Seminari 5

MATEMATIČKE METODE ZA INFORMATIČARE

Damir Horvat

FOI, Varaždin

Sadržaj

prvi zadatak

Zadatak 1

Zadan je pravac $p \ldots \dfrac{x-2}{1} = \dfrac{y+4}{-2} = \dfrac{z+1}{1}$ *i točka* $A(3,4,2)$.

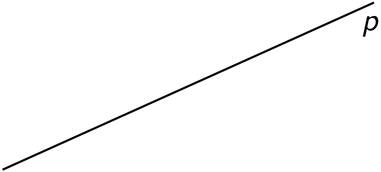
a) *Odredite jednadžbu normale n iz točke A na pravac p.*

b) *Odredite simetričnu točku točke A s obzirom na pravac p.*

c) *Odredite sve točke na pravcu p koje su od točke A udaljene* $10\sqrt{2}$.

Rješenje

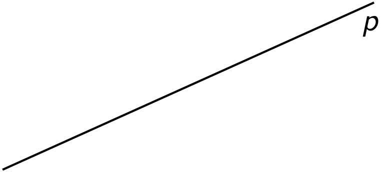
a)



Rješenje

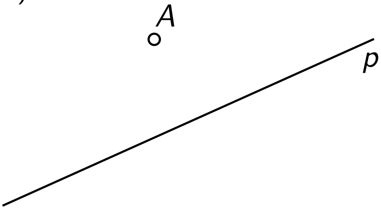
$$p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$$

a)



Rješenje $A(3,4,2)$ $p \ldots \; \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

a)

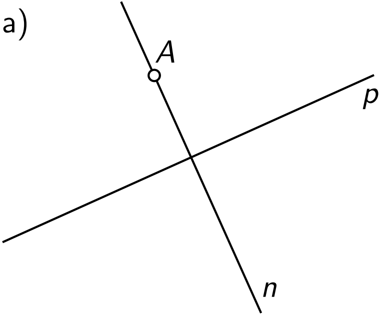


Rješenje

a)

$A(3,4,2)$

$$p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$$



Rješenje

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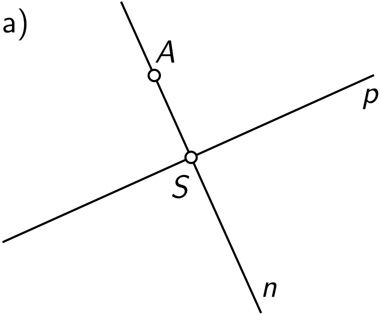

Rješenje

$A(3,4,2)$

$$p \ldots \frac{x-2}{1}=\frac{y+4}{-2}=\frac{z+1}{1}$$

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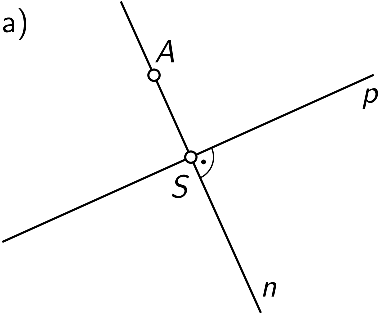

Rješenje

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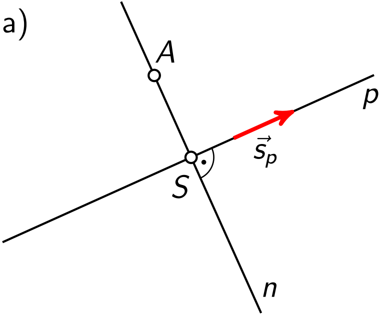

Rješenje

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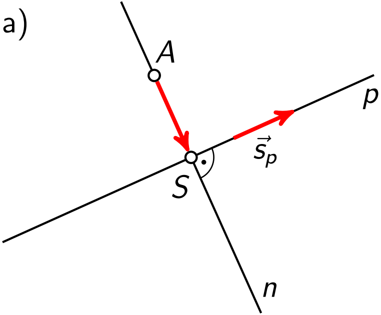

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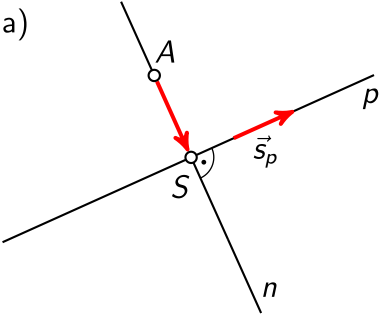

$\overrightarrow{AS} \perp \vec{s}_p$

Rješenje

$A(3,4,2)$

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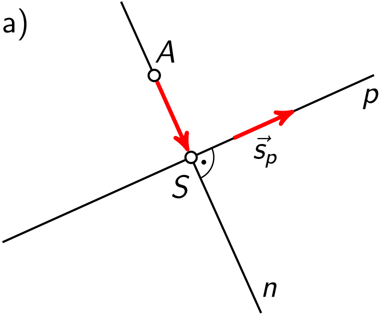

$$\overrightarrow{AS} \perp \vec{s}_p \ \Rightarrow \ \overrightarrow{AS} \cdot \vec{s}_p = 0$$

Rješenje

$A(3, 4, 2)$

$$p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$$

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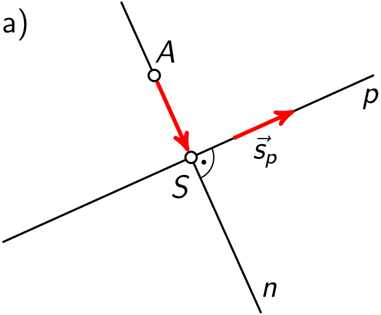

$$\overrightarrow{AS} \perp \vec{s}_p \ \Rightarrow \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

Rješenje $A(3,4,2)$ $\vec{s}_p = (1,-2,1)$ $p \ldots \dfrac{x-2}{1} = \dfrac{y+4}{-2} = \dfrac{z+1}{1}$

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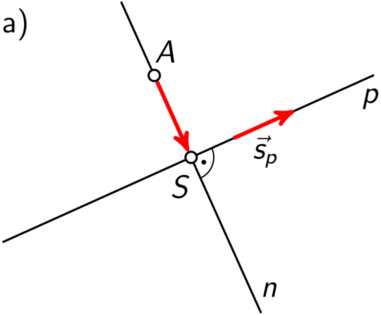

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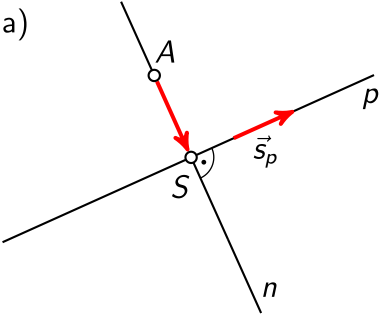

$p \ldots \left\{ \begin{array}{l} \\ \\ \\ \end{array} \right.$

$\overrightarrow{AS} \perp \vec{s}_p \Rightarrow \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$

Rješenje

$A(3, 4, 2) \qquad \vec{s}_p = (1, -2, 1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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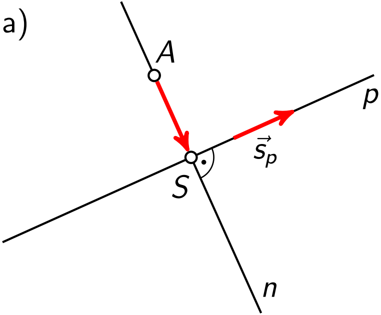

$$p \ldots \begin{cases} x = \\ y = \\ z = \end{cases}$$

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Rješenje

$A(3,4,2)$ $\vec{s}_p = (1,-2,1)$ $p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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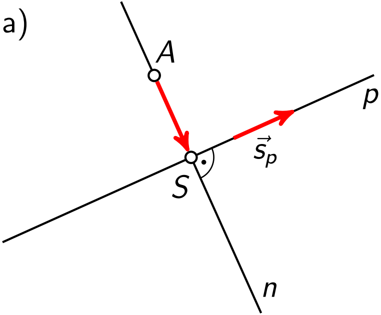

$$p \ldots \begin{cases} x = 2 \\ y = -4 \\ z = -1 \end{cases}$$

$$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

Rješenje

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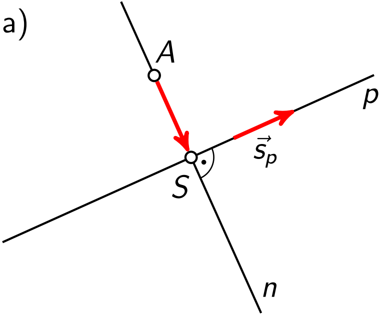

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 \\ z = -1 \end{cases}$$

$$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

Rješenje

$A(3, 4, 2)$ $\vec{s}_p = (1, -2, 1)$ $p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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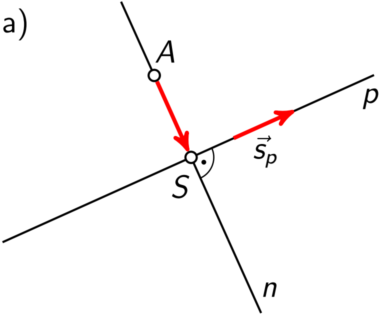

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 \end{cases}$$

$$\overrightarrow{AS} \perp \vec{s}_p \ \Rightarrow \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

Rješenje

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \dots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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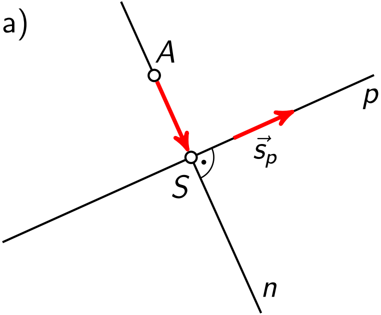

$$p \dots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

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Rješenje

$A(3,4,2)$ $\qquad \vec{s}_p = (1,-2,1)$ $\qquad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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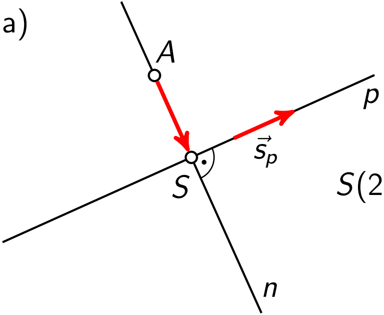

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$$S(2+t, -4-2t, -1+t)$$

$$\overrightarrow{AS} \perp \vec{s}_p \ \Rightarrow \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

Rješenje

$A(3,4,2)$ $\vec{s}_p = (1,-2,1)$ $p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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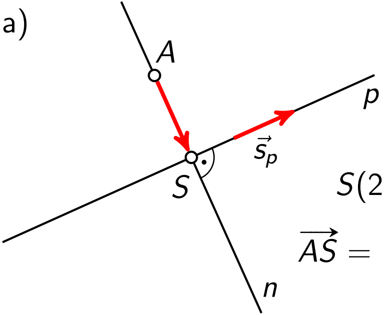

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$S(2+t, -4-2t, -1+t)$

$\overrightarrow{AS} =$

$\overrightarrow{AS} \perp \vec{s}_p \Rightarrow \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$

Rješenje

$A(3,4,2)$ $\vec{s}_p = (1,-2,1)$ $p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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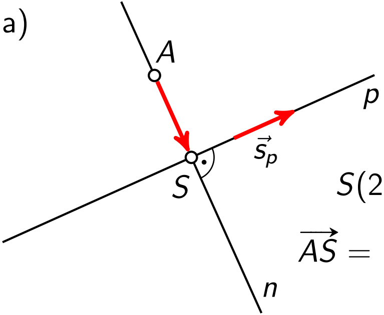

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$S(2+t, -4-2t, -1+t)$

$\overrightarrow{AS} = ((2+t) - 3,$

$\overrightarrow{AS} \perp \vec{s}_p \Rightarrow \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$

Rješenje

$A(3,4,2)$ $\vec{s}_p = (1,-2,1)$ $p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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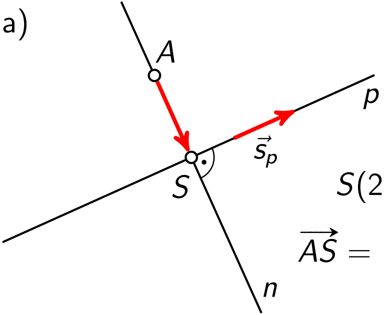

$$p \ldots \begin{cases} x = 2+t \\ y = -4-2t \\ z = -1+t \end{cases}$$

$S(2+t, -4-2t, -1+t)$

$\overrightarrow{AS} = \big((2+t)-3, (-4-2t)-4,$

$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$

Rješenje

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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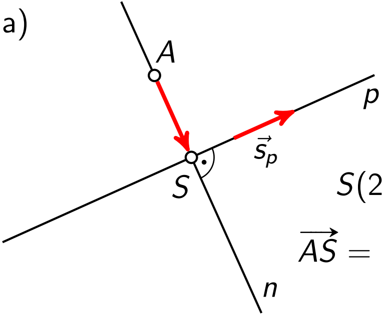

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$S(2+t, -4-2t, -1+t)$

$$\overrightarrow{AS} = \big((2+t) - 3, (-4-2t) - 4, (-1+t) - 2\big)$$

$$\overrightarrow{AS} \perp \vec{s}_p \;\; \Rightarrow \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

Rješenje

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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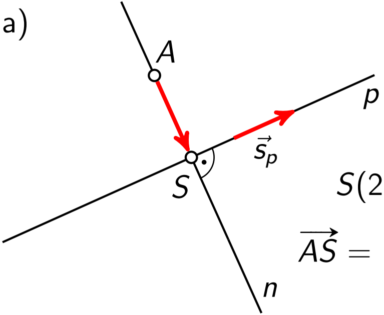

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$S(2+t, -4-2t, -1+t)$

$\overrightarrow{AS} = \big((2+t)-3, (-4-2t)-4, (-1+t)-2\big)$

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$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$

Rješenje

$A(3, 4, 2) \qquad \vec{s}_p = (1, -2, 1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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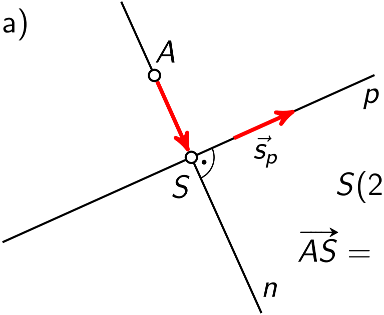

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$S(2 + t, -4 - 2t, -1 + t)$

$\overrightarrow{AS} = ((2 + t) - 3, (-4 - 2t) - 4, (-1 + t) - 2)$

$\overrightarrow{AS} = (t - 1,$

$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$

Rješenje

$A(3, 4, 2)$ $\quad \vec{s}_p = (1, -2, 1)$ $\quad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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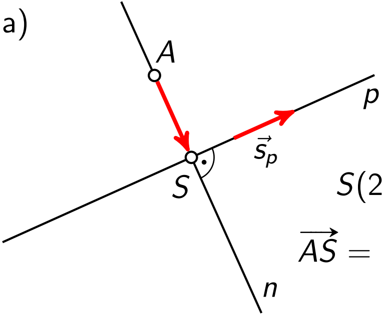

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$$S(2 + t, -4 - 2t, -1 + t)$$

$$\overrightarrow{AS} = \big((2 + t) - 3, (-4 - 2t) - 4, (-1 + t) - 2\big)$$

$$\overrightarrow{AS} = (t - 1, -8 - 2t,$$

$$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

Rješenje

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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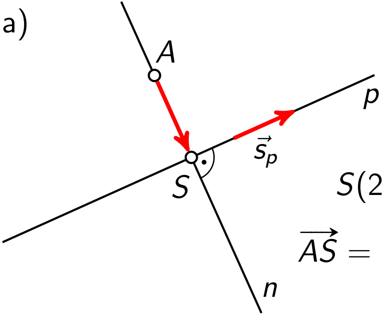

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$$S(2+t, -4-2t, -1+t)$$

$$\overrightarrow{AS} = \big((2+t)-3, (-4-2t)-4, (-1+t)-2\big)$$

$$\overrightarrow{AS} = (t-1, -8-2t, t-3)$$

$$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

Rješenje

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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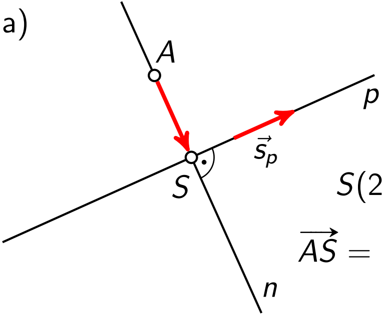

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$$S(2+t, -4-2t, -1+t)$$

$$\overrightarrow{AS} = \big((2+t)-3, (-4-2t)-4, (-1+t)-2\big)$$

$$\overrightarrow{AS} = (t-1, -8-2t, t-3)$$

$$\overrightarrow{AS} \perp \vec{s}_p \ \Rightarrow \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

$$(t-1, -8-2t, t-3) \cdot$$

Rješenje

$A(3, 4, 2)$ $\quad \vec{s}_p = (1, -2, 1)$ $\quad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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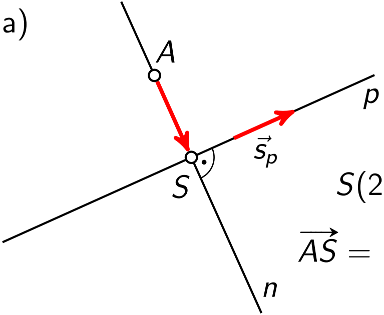

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$$S(2 + t, -4 - 2t, -1 + t)$$

$$\overrightarrow{AS} = ((2 + t) - 3, (-4 - 2t) - 4, (-1 + t) - 2)$$

$$\overrightarrow{AS} = (t - 1, -8 - 2t, t - 3)$$

$$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

$$(t - 1, -8 - 2t, t - 3) \cdot (1, -2, 1)$$

Rješenje

$A(3,4,2)$ $\vec{s}_p = (1,-2,1)$ $p \ldots \dfrac{x-2}{1} = \dfrac{y+4}{-2} = \dfrac{z+1}{1}$

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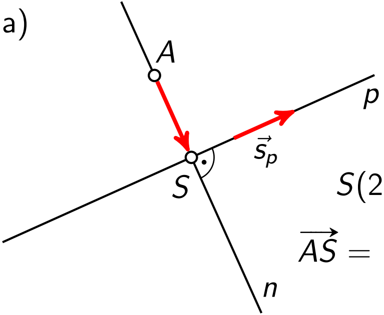

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$$S(2+t, -4-2t, -1+t)$$

$$\overrightarrow{AS} = \big((2+t)-3, (-4-2t)-4, (-1+t)-2\big)$$

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$$(t-1, -8-2t, t-3) \cdot (1,-2,1) = 0$$

Rješenje

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \dfrac{x-2}{1} = \dfrac{y+4}{-2} = \dfrac{z+1}{1}$

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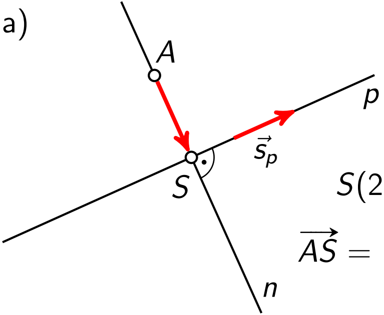

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$$\overrightarrow{AS} \perp \vec{s}_p \ \Rightarrow \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

$$(t-1, -8-2t, t-3) \cdot (1,-2,1) = 0$$

$$(t-1) \cdot 1$$

Rješenje

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \; \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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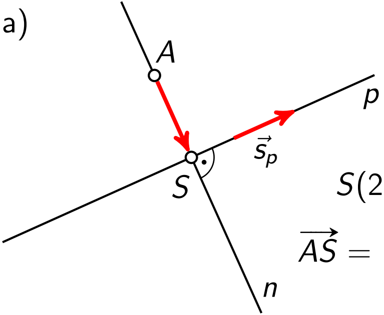

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$$\overrightarrow{AS} \perp \vec{s}_p \;\; \Rightarrow \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0}$$

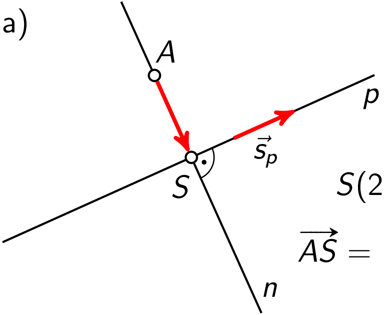
$$(t-1, -8-2t, t-3) \cdot (1,-2,1) = 0$$

$$(t-1) \cdot 1 + (-8-2t) \cdot (-2)$$

Rješenje

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

a)



$$p \ldots \begin{cases} x = 2+t \\ y = -4-2t \\ z = -1+t \end{cases}$$

$$S(2+t, -4-2t, -1+t)$$

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Rješenje

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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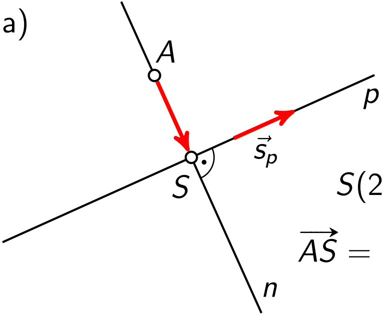

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

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Rješenje

$A(3,4,2)$ $\qquad \vec{s}_p = (1,-2,1)$ $\qquad p \ldots \; \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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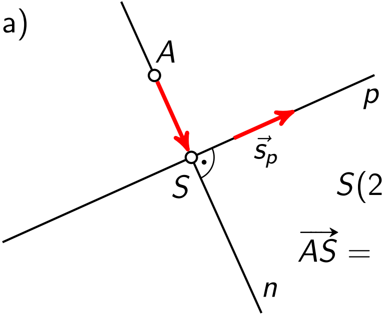

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$$\rightsquigarrow$$

$$(t-1, -8-2t, t-3) \cdot (1,-2,1) = 0$$

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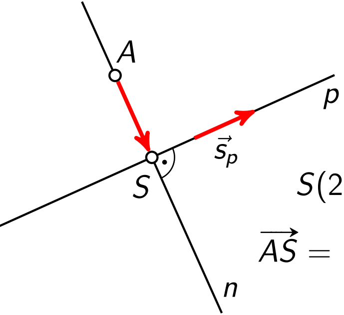
$$t - 1$$

Rješenje

$A(3,4,2)$ $\qquad \vec{s}_p = (1,-2,1)$ $\qquad p \dots \dfrac{x-2}{1} = \dfrac{y+4}{-2} = \dfrac{z+1}{1}$

a)



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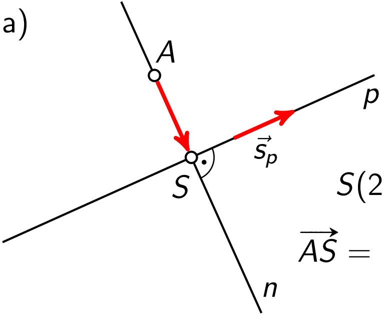
$$t - 1 + 16 + 4t$$

Rješenje

a)

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



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$$t - 1 + 16 + 4t + t - 3$$

Rješenje

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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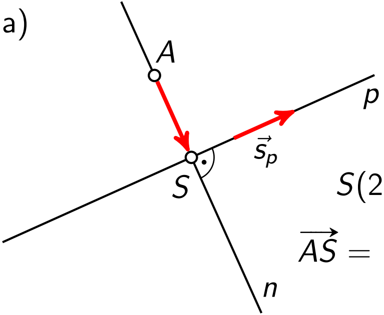

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Rješenje

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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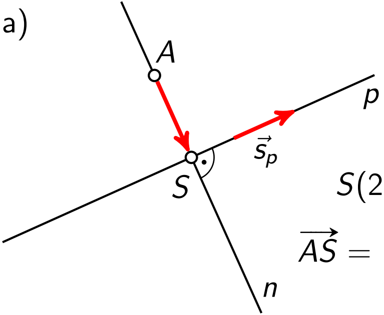

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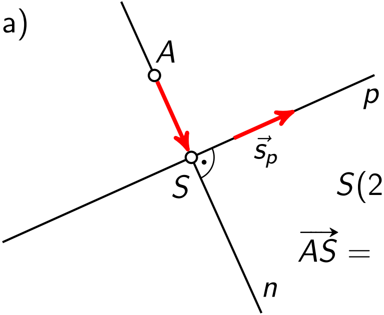
$$t - 1 + 16 + 4t + t - 3 = 0$$

$$6t + 12 = 0$$

Rješenje

$A(3,4,2) \qquad \vec{s}_p=(1,-2,1) \qquad p\ldots\ \frac{x-2}{1}=\frac{y+4}{-2}=\frac{z+1}{1}$

a)



$$p\ldots\begin{cases} x=2+t\\ y=-4-2t\\ z=-1+t\end{cases}$$

$$S(2+t,-4-2t,-1+t)$$

$$\overrightarrow{AS}=\big((2+t)-3,(-4-2t)-4,(-1+t)-2\big)$$

$$\overrightarrow{AS}=(t-1,-8-2t,t-3)$$

$$\overrightarrow{AS}\perp\vec{s}_p \ \Rightarrow\ \boxed{\overrightarrow{AS}\cdot\vec{s}_p=0}$$

$$(t-1,-8-2t,t-3)\cdot(1,-2,1)=0$$

$$(t-1)\cdot 1+(-8-2t)\cdot(-2)+(t-3)\cdot 1=0$$

$$t-1+16+4t+t-3=0$$

$$6t+12=0 \rightsquigarrow t=-2$$

Rješenje

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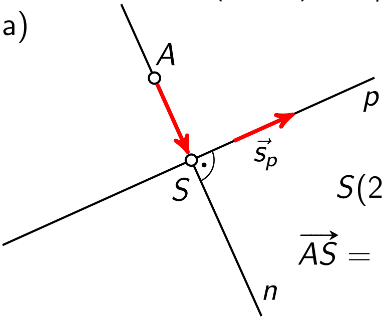

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$$S(2+t, -4-2t, -1+t)$$

$$\overrightarrow{AS} = \big((2+t)-3, (-4-2t)-4, (-1+t)-2\big)$$

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$$t - 1 + 16 + 4t + t - 3 = 0$$

$$6t + 12 = 0 \rightsquigarrow \boxed{t = -2}$$

Rješenje

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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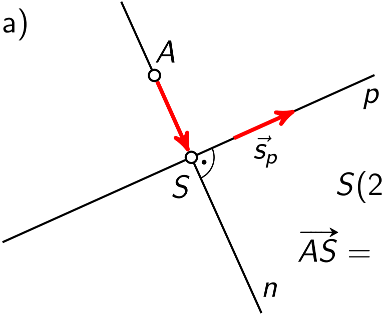

$S($

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

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Rješenje

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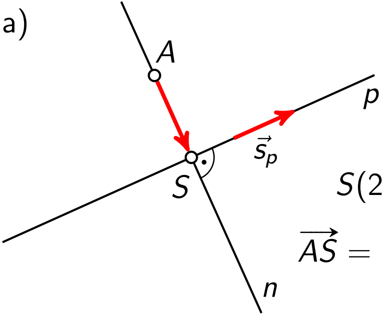

$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$S(2+t, -4-2t, -1+t)$

$$\overrightarrow{AS} = \big((2+t)-3, (-4-2t)-4, (-1+t)-2\big)$$

$$\overrightarrow{AS} = (t-1, -8-2t, t-3)$$

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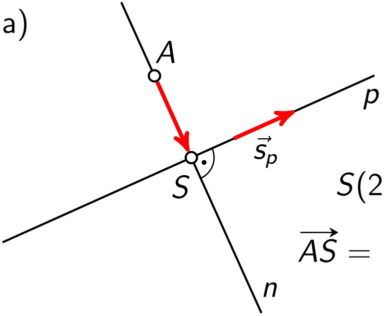
Rješenje

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

a)



$\overrightarrow{AS} =$

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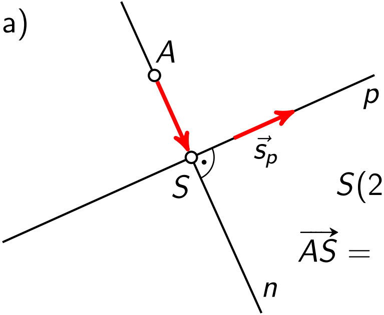
Rješenje

a)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \; \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$$\overrightarrow{AS} = (-3,-4,-5)$$

$$S(0,0,-3)$$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$$S(2+t, -4-2t, -1+t)$$

$$\overrightarrow{AS} = \big((2+t) - 3, (-4-2t) - 4, (-1+t) - 2\big)$$

$$\overrightarrow{AS} = (t-1, -8-2t, t-3)$$

$$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0} \rightsquigarrow$$

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Rješenje

$A(3,4,2)$ $\qquad \vec{s}_p = (1,-2,1)$ $\qquad p \ldots \; \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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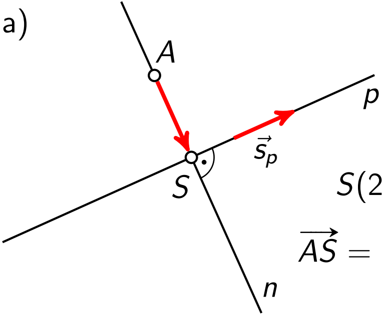

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$n \ldots A, \overrightarrow{AS}$

Rješenje

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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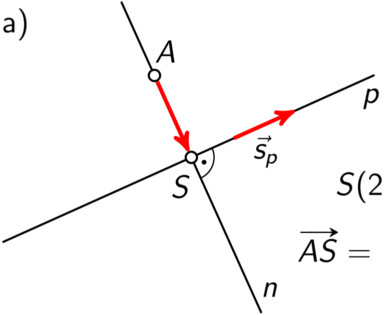

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$n \ldots$ ______ = ______ = ______

$$(t-1, -8-2t, t-3) \cdot (1,-2,1) = 0$$

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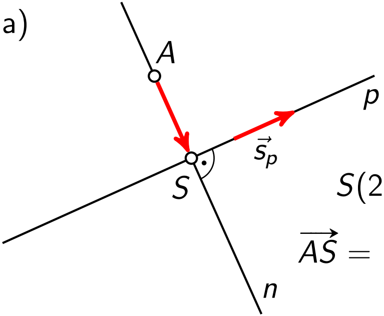
$n \ldots A, \overrightarrow{AS}$

Rješenje

a)

$A(3,4,2)$ $\qquad \vec{s}_p = (1,-2,1)$ $\qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



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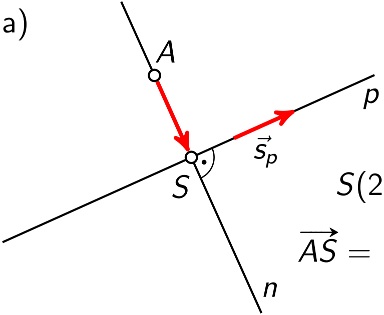
Rješenje

a)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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$$(t-1, -8-2t, t-3) \cdot (1,-2,1) = 0$$

$$n \ldots A, \overrightarrow{AS}$$

$$(t-1) \cdot 1 + (-8-2t) \cdot (-2) + (t-3) \cdot 1 = 0$$

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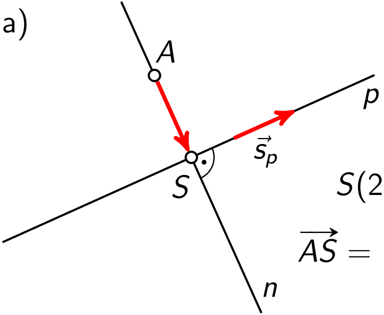
Rješenje

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \; \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

a)



$$\overrightarrow{AS} = (-3,-4,-5)$$

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$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

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$$\overrightarrow{AS} = \big((2+t)-3, (-4-2t)-4, (-1+t)-2\big)$$

$$\overrightarrow{AS} = (t-1, -8-2t, t-3)$$

$$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0} \rightsquigarrow$$

$$n \ldots \; \frac{x-3}{-3} = \frac{y-4}{-4} = \frac{\qquad}{-5}$$

$$(t-1, -8-2t, t-3) \cdot (1,-2,1) = 0$$

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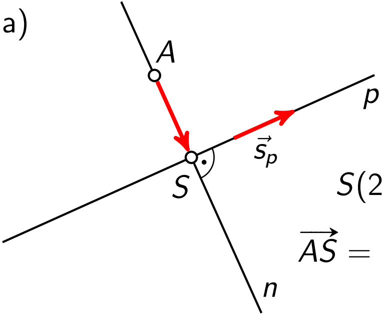
Rješenje

a)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$$\overrightarrow{AS} = (-3,-4,-5)$$

$$S(0,0,-3)$$

$$p \ldots \begin{cases} x = 2+t \\ y = -4-2t \\ z = -1+t \end{cases}$$

$$S(2+t,-4-2t,-1+t)$$

$$\overrightarrow{AS} = \big((2+t)-3,(-4-2t)-4,(-1+t)-2\big)$$

$$\overrightarrow{AS} = (t-1,-8-2t,t-3)$$

$$\overrightarrow{AS} \perp \vec{s}_p \;\Rightarrow\; \boxed{\overrightarrow{AS} \cdot \vec{s}_p = 0} \rightsquigarrow$$

$$n \ldots \frac{x-3}{-3} = \frac{y-4}{-4} = \frac{z-2}{-5}$$

$$(t-1,-8-2t,t-3) \cdot (1,-2,1) = 0$$

$$n \ldots A,\ \overrightarrow{AS}$$

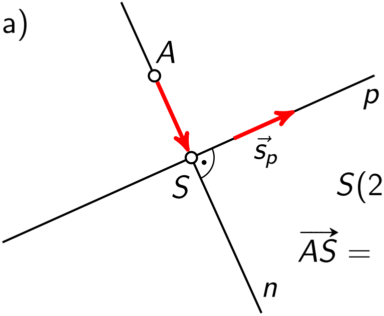
$$(t-1)\cdot 1 + (-8-2t)\cdot(-2) + (t-3)\cdot 1 = 0$$

$$t-1+16+4t+t-3 = 0$$

$$6t+12 = 0 \rightsquigarrow \boxed{t=-2}$$

Rješenje

a)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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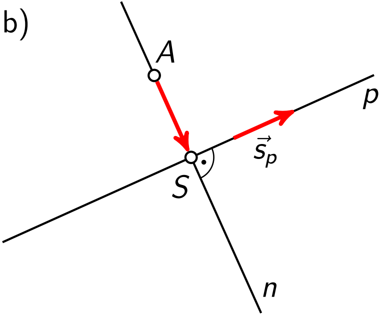
$n \ldots A, \overrightarrow{AS}$

$$(t-1) \cdot 1 + (-8-2t) \cdot (-2) + (t-3) \cdot 1 = 0$$

$$t - 1 + 16 + 4t + t - 3 = 0$$

$$6t + 12 = 0 \rightsquigarrow \boxed{t = -2}$$

b)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \dots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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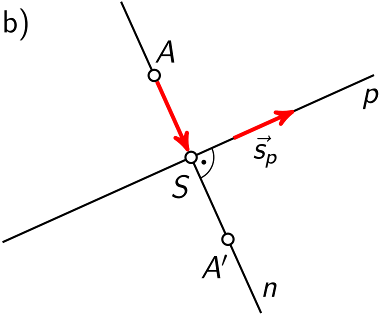
b)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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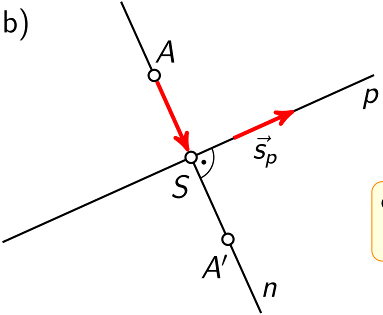
$S(0,0,-3)$

b)

$A(3,4,2)$ $\qquad \vec{s}_p = (1,-2,1)$ $\qquad p \ldots \; \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

ortogonalna projekcija točke A na pravac p

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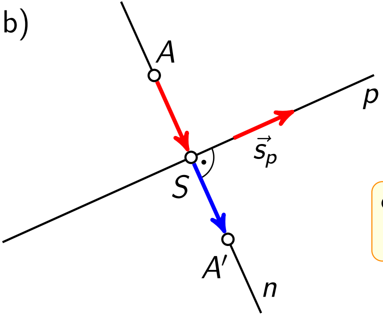

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ortogonalna projekcija
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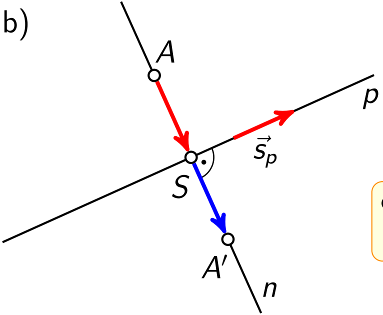

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ortogonalna projekcija točke *A* na pravac *p*

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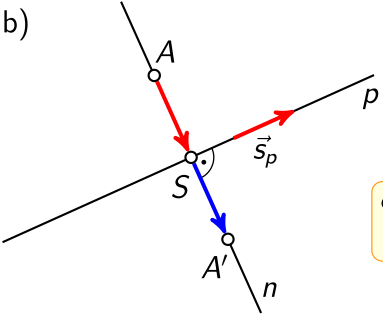

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$\vec{r}_{A'} - \vec{r}_S$

b)

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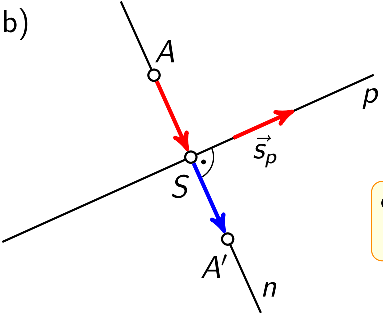

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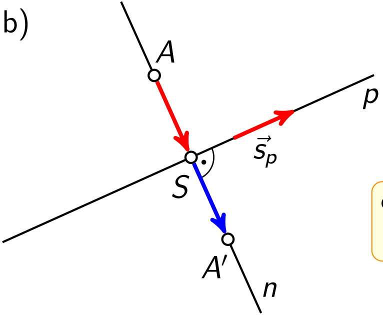

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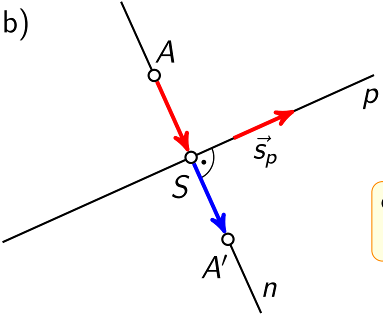
$$\vec{r}_{A'} =$$

$A(3,4,2)$ $\quad \vec{s}_p=(1,-2,1)$ $\quad p \ldots \; \frac{x-2}{1}=\frac{y+4}{-2}=\frac{z+1}{1}$

b)



$$\overrightarrow{AS}=(-3,-4,-5)$$

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$$\vec{r}_{A'}-\vec{r}_S=\overrightarrow{AS}$$

$$\vec{r}_{A'}=\vec{r}_S$$

b)

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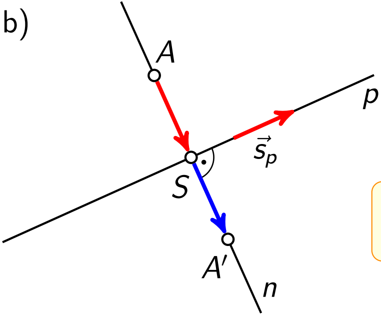

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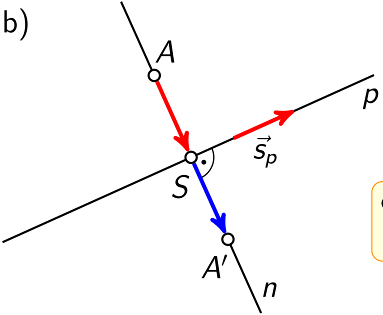
$$\vec{r}_{A'} = \vec{r}_S + \overrightarrow{AS}$$

b)

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \dfrac{x-2}{1} = \dfrac{y+4}{-2} = \dfrac{z+1}{1}$



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$$\vec{r}_{A'} =$$

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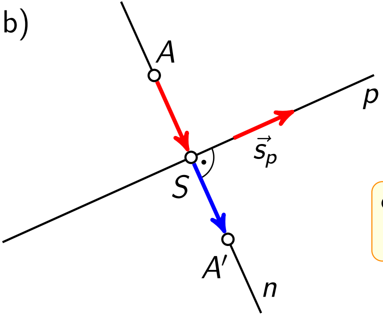

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$$\vec{r}_{A'} = (0,0,-3)$$

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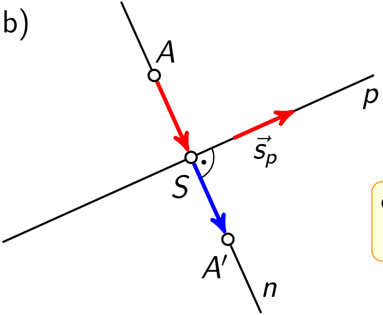
b)



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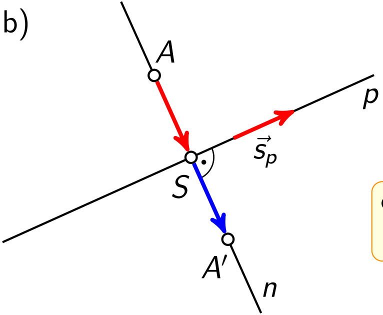
$$\vec{r}_{A'} = (0,0,-3) + (-3,-4,-5)$$

b)

$A(3,4,2)$ $\vec{s}_p=(1,-2,1)$ $p\ldots\ \dfrac{x-2}{1}=\dfrac{y+4}{-2}=\dfrac{z+1}{1}$



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$$\vec{r}_{A'}-\vec{r}_S=\overrightarrow{AS}$$

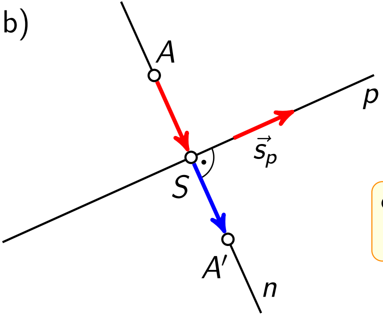
$$\vec{r}_{A'}=\vec{r}_S+\overrightarrow{AS}$$

$$\vec{r}_{A'}=(0,0,-3)+(-3,-4,-5)$$

$$\vec{r}_{A'}=$$

b)

$$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$$



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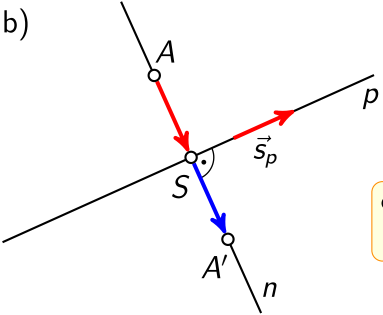
$$\vec{r}_{A'} = (0,0,-3) + (-3,-4,-5)$$

$$\vec{r}_{A'} = (-3,-4,-8)$$

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \; \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

b)



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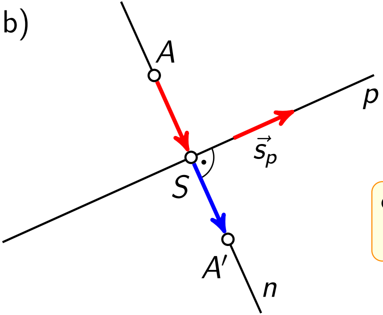
$$\vec{r}_{A'} = (0,0,-3) + (-3,-4,-5)$$

$$\vec{r}_{A'} = (-3,-4,-8)$$

$A'(-3,-4,-8)$

b)

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \dfrac{x-2}{1} = \dfrac{y+4}{-2} = \dfrac{z+1}{1}$



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ortogonalna projekcija
točke A na pravac p

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$$\boxed{A'(-3,-4,-8)}$$

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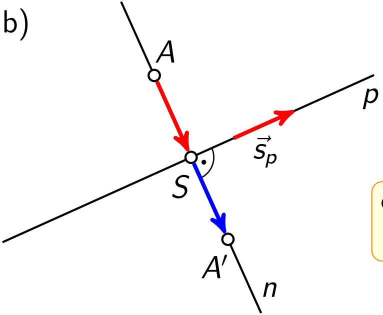

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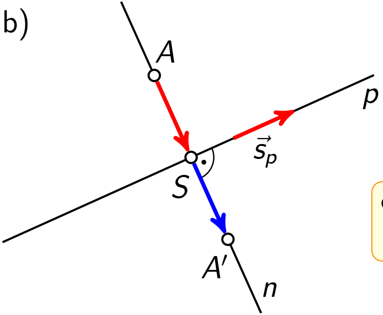
udaljenost točke od pravca

b)

$A(3,4,2)$ $\quad \vec{s}_p=(1,-2,1)$ $\quad p \ldots \dfrac{x-2}{1}=\dfrac{y+4}{-2}=\dfrac{z+1}{1}$



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ortogonalna projekcija točke A na pravac p

$$\overrightarrow{SA'}=\overrightarrow{AS}$$

$$\vec{r}_{A'}-\vec{r}_S=\overrightarrow{AS}$$

$$\vec{r}_{A'}=\vec{r}_S+\overrightarrow{AS}$$

$$\vec{r}_{A'}=(0,0,-3)+(-3,-4,-5)$$

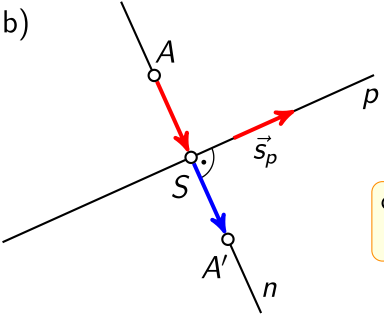
$$\vec{r}_{A'}=(-3,-4,-8)$$

$$\boxed{A'(-3,-4,-8)}$$

udaljenost točke od pravca

$$d(A,p)=$$

b)



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ortogonalna projekcija
točke A na pravac p

$$\overrightarrow{SA'} = \overrightarrow{AS}$$
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$$\vec{r}_{A'} = \vec{r}_S + \overrightarrow{AS}$$
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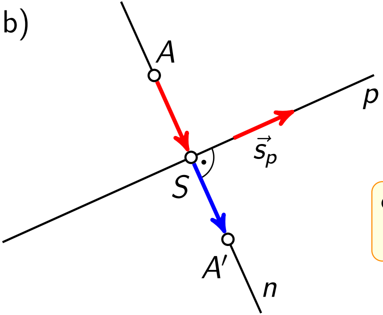
udaljenost točke od pravca

$$d(A,p) = |AS|$$

b)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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$$\vec{r}_{A'} = (-3,-4,-8)$$

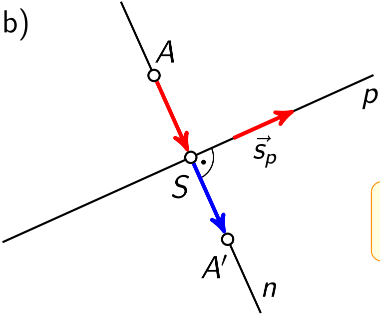
$$\boxed{A'(-3,-4,-8)}$$

udaljenost točke od pravca

$$d(A,p) = |AS| = \left|\overrightarrow{AS}\right|$$

b)

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



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$$\vec{r}_{A'} = (-3,-4,-8)$$

$$\boxed{A'(-3,-4,-8)}$$

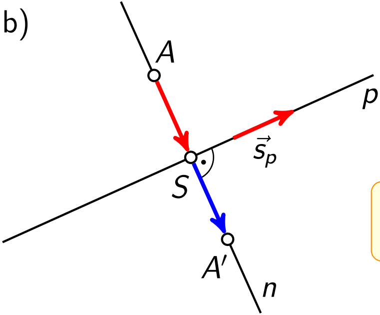
udaljenost točke od pravca

$$d(A,p) = |AS| = \left|\overrightarrow{AS}\right|$$

$$d(A,p) =$$

b)

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \; \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



$$\overrightarrow{AS} = (-3,-4,-5)$$

$$S(0,0,-3)$$

ortogonalna projekcija točke *A* na pravac *p*

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$$\overrightarrow{SA'} = \overrightarrow{AS}$$

$$\vec{r}_{A'} - \vec{r}_S = \overrightarrow{AS}$$

$$\vec{r}_{A'} = \vec{r}_S + \overrightarrow{AS}$$

$$\vec{r}_{A'} = (0,0,-3) + (-3,-4,-5)$$

$$\vec{r}_{A'} = (-3,-4,-8)$$

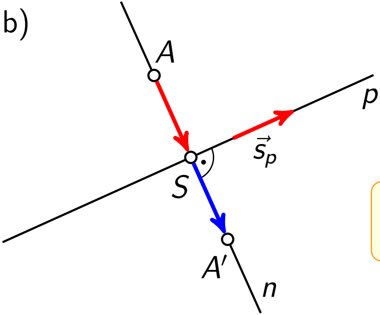
$$\boxed{A'(-3,-4,-8)}$$

udaljenost točke od pravca

$$d(A,p) = |AS| = \left|\overrightarrow{AS}\right|$$

$$d(A,p) = \sqrt{9+16+25}$$

b)



$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$S(0,0,-3)$

ortogonalna projekcija točke A na pravac p

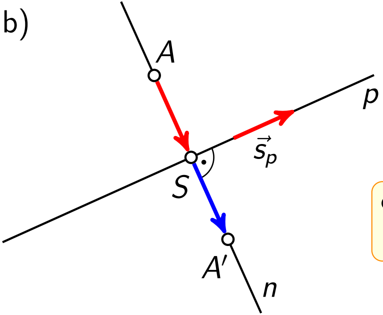
$$\overrightarrow{SA'} = \overrightarrow{AS}$$
$$\vec{r}_{A'} - \vec{r}_S = \overrightarrow{AS}$$
$$\vec{r}_{A'} = \vec{r}_S + \overrightarrow{AS}$$
$$\vec{r}_{A'} = (0,0,-3) + (-3,-4,-5)$$
$$\vec{r}_{A'} = (-3,-4,-8)$$

$$\boxed{A'(-3,-4,-8)}$$

udaljenost točke od pravca

$$d(A,p) = |AS| = \left|\overrightarrow{AS}\right|$$
$$d(A,p) = \sqrt{9+16+25}$$
$$d(A,p) =$$

b)



$A(3,4,2) \quad \vec{s}_p = (1,-2,1) \quad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

ortogonalna projekcija točke A na pravac p

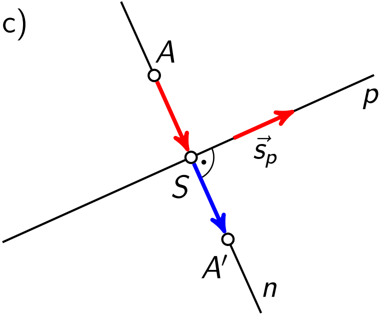
$$\overrightarrow{SA'} = \overrightarrow{AS}$$
$$\vec{r}_{A'} - \vec{r}_S = \overrightarrow{AS}$$
$$\vec{r}_{A'} = \vec{r}_S + \overrightarrow{AS}$$
$$\vec{r}_{A'} = (0,0,-3) + (-3,-4,-5)$$
$$\vec{r}_{A'} = (-3,-4,-8)$$

$$\boxed{A'(-3,-4,-8)}$$

udaljenost točke od pravca

$$d(A,p) = |AS| = \left|\overrightarrow{AS}\right|$$
$$d(A,p) = \sqrt{9+16+25}$$
$$d(A,p) = 5\sqrt{2}$$

c)



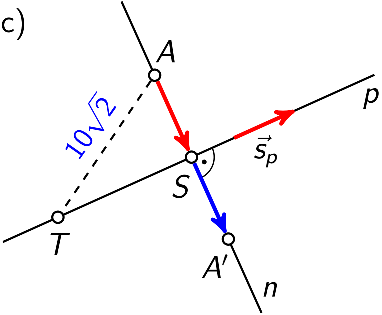
$A(3,4,2)$ $\vec{s}_p = (1,-2,1)$ $p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

c)



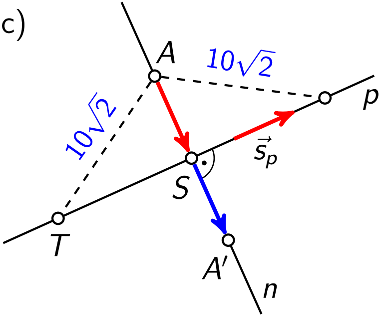
$A(3,4,2)$ $\vec{s}_p = (1,-2,1)$ $p\ldots\ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p\ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

c)



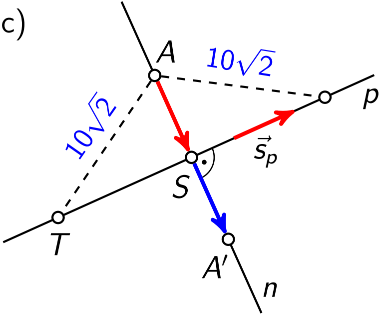
$A(3,4,2)$ $\vec{s}_p = (1,-2,1)$ $p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

c)



$A(3,4,2)$ $\quad \vec{s}_p=(1,-2,1)$ $\quad p\ldots\ \frac{x-2}{1}=\frac{y+4}{-2}=\frac{z+1}{1}$

$\overrightarrow{AS}=(-3,-4,-5)$

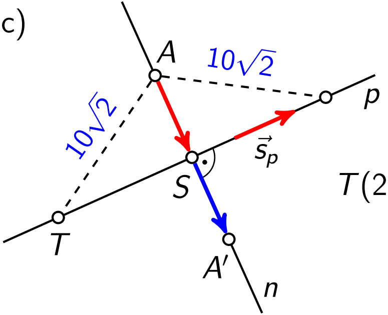
$S(0,0,-3)$

$$p\ldots\begin{cases}x=2+t\\ y=-4-2t\\ z=-1+t\end{cases}$$

$d(A,T)=10\sqrt{2}$

c)

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



$\overrightarrow{AS} = (-3,-4,-5)$

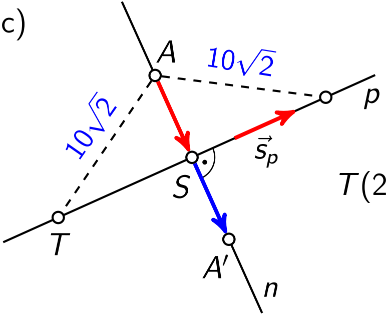
$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$T(2+t, -4-2t, -1+t)$

$d(A,T) = 10\sqrt{2}$

c)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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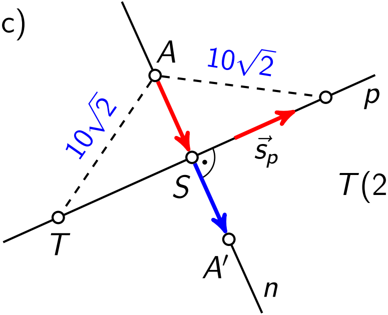
$T(2+t, -4-2t, -1+t)$

$$d(A, T) = 10\sqrt{2}$$

$$\sqrt{}$$

c)



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$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

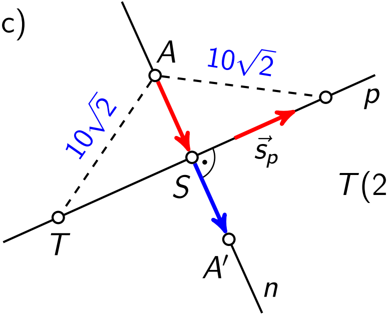
$T(2+t, -4-2t, -1+t)$

$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad}$$

c)

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

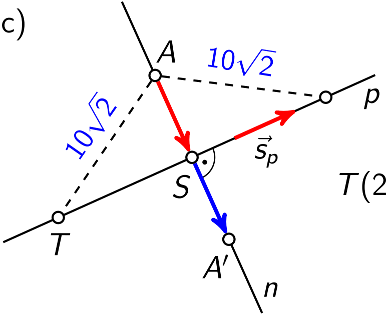
$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$T(2+t, -4-2t, -1+t)$

$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 \qquad\qquad\qquad\qquad}$$

c)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \dots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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$$p \dots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

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$$d(A,T) = 10\sqrt{2}$$

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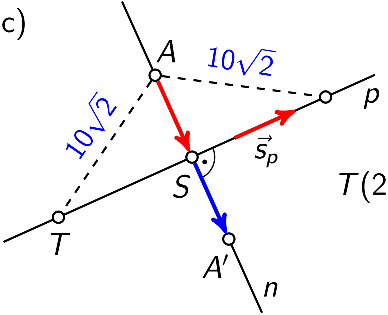
c)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \dots \dfrac{x-2}{1} = \dfrac{y+4}{-2} = \dfrac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

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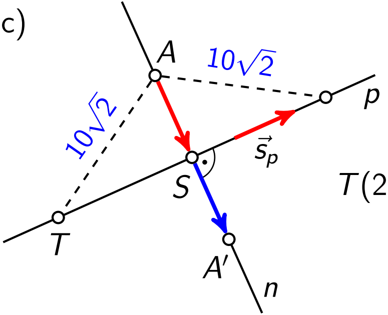
$$p \dots \begin{cases} x = 2+t \\ y = -4-2t \\ z = -1+t \end{cases}$$

$T(2+t, -4-2t, -1+t)$

$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

c)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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$$p \ldots \begin{cases} x = 2+t \\ y = -4-2t \\ z = -1+t \end{cases}$$

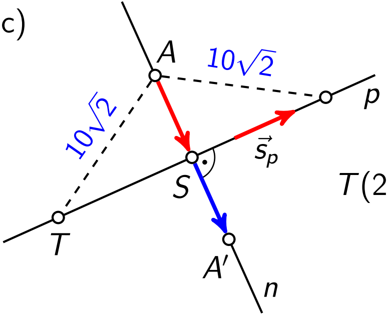
$T(2+t,-4-2t,-1+t)$

$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2+((-4-2t)-4)^2+((-1+t)-2)^2} = 10\sqrt{2}$$

$$\sqrt{}$$

c)



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$T(2+t, -4-2t, -1+t)$

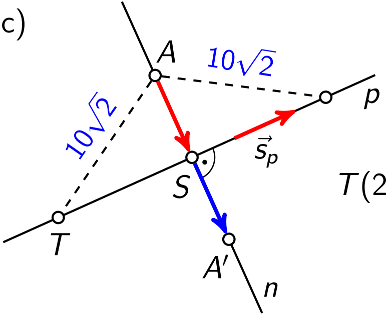
$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

$$\sqrt{(t-1)^2 \qquad\qquad\qquad\qquad\qquad\qquad}$$

c)

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

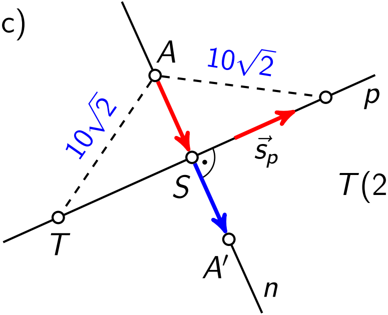
$T(2+t, -4-2t, -1+t)$

$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

$$\sqrt{(t-1)^2 + (-2t-8)^2}$$

c)



$A(3,4,2)$ $\vec{s}_p = (1,-2,1)$ $p \dots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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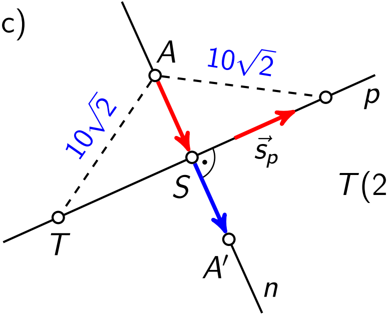
$$\sqrt{(t-1)^2 + (-2t-8)^2 + (t-3)^2}$$

c)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

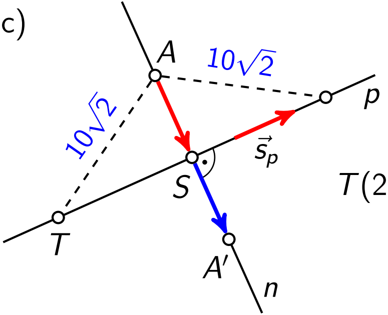
$T(2+t, -4-2t, -1+t)$

$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

$$\sqrt{(t-1)^2 + (-2t-8)^2 + (t-3)^2} = 10\sqrt{2}$$

c)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \dots \dfrac{x-2}{1} = \dfrac{y+4}{-2} = \dfrac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \dots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$T(2+t, -4-2t, -1+t)$

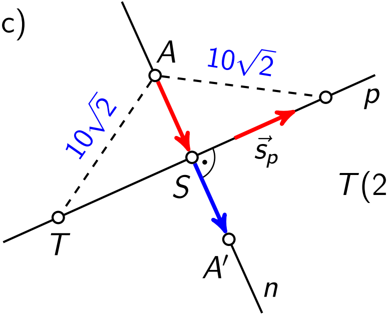
$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

$$\sqrt{(t-1)^2 + (-2t-8)^2 + (t-3)^2} = 10\sqrt{2} \; /^{2}$$

c)

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$T(2+t, -4-2t, -1+t)$

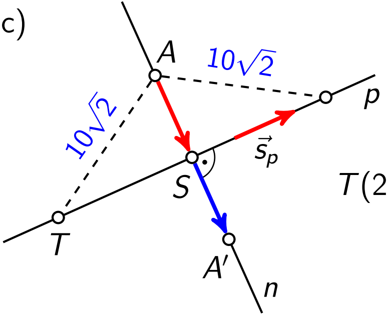
$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

$$\sqrt{(t-1)^2 + (-2t-8)^2 + (t-3)^2} = 10\sqrt{2} \ /^2$$

$$(t-1)^2 + (-2t-8)^2 + (t-3)^2$$

c)



$A(3,4,2)$ $\qquad \vec{s}_p = (1,-2,1)$ $\qquad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$T(2+t, -4-2t, -1+t)$

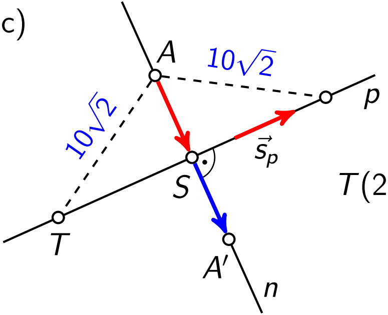
$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

$$\sqrt{(t-1)^2 + (-2t-8)^2 + (t-3)^2} = 10\sqrt{2} \ /^2$$

$$(t-1)^2 + (-2t-8)^2 + (t-3)^2 = 200$$

c)



$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3) \qquad p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$

$T(2+t, -4-2t, -1+t)$

$$d(A,T) = 10\sqrt{2}$$

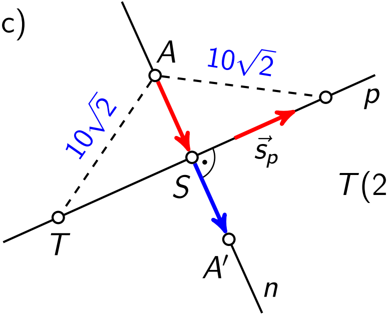
$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

$$\sqrt{(t-1)^2 + (-2t-8)^2 + (t-3)^2} = 10\sqrt{2} \ /^2$$

$$(t-1)^2 + (-2t-8)^2 + (t-3)^2 = 200$$

$$6t^2$$

c)



$A(3,4,2)$ $\quad \vec{s}_p=(1,-2,1)$ $\quad p\ldots\ \frac{x-2}{1}=\frac{y+4}{-2}=\frac{z+1}{1}$

$\overrightarrow{AS}=(-3,-4,-5)$

$S(0,0,-3)$

$$p\ldots\begin{cases} x=2+t \\ y=-4-2t \\ z=-1+t \end{cases}$$

$T(2+t,-4-2t,-1+t)$

$$d(A,T)=10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2+((-4-2t)-4)^2+((-1+t)-2)^2}=10\sqrt{2}$$

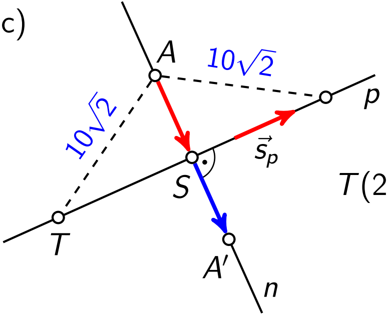
$$\sqrt{(t-1)^2+(-2t-8)^2+(t-3)^2}=10\sqrt{2}\ /^2$$

$$(t-1)^2+(-2t-8)^2+(t-3)^2=200$$

$$6t^2+24t$$

c)

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \dots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \dots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$T(2+t, -4-2t, -1+t)$

$$d(A,T) = 10\sqrt{2}$$

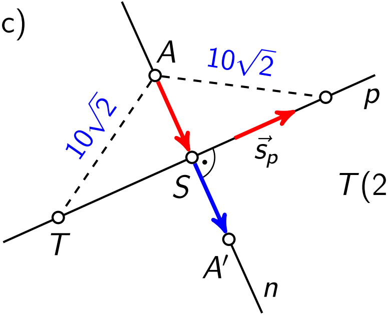
$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

$$\sqrt{(t-1)^2 + (-2t-8)^2 + (t-3)^2} = 10\sqrt{2} \;/^{2}$$

$$(t-1)^2 + (-2t-8)^2 + (t-3)^2 = 200$$

$$6t^2 + 24t + 74$$

c)



$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

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$$p \ldots \begin{cases} x = 2+t \\ y = -4-2t \\ z = -1+t \end{cases}$$

$T(2+t, -4-2t, -1+t)$

$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

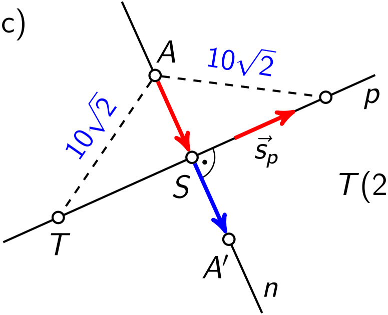
$$\sqrt{(t-1)^2 + (-2t-8)^2 + (t-3)^2} = 10\sqrt{2} \ /^2$$

$$(t-1)^2 + (-2t-8)^2 + (t-3)^2 = 200$$

$$6t^2 + 24t + 74 = 200$$

c)

$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$



$\overrightarrow{AS} = (-3,-4,-5)$

$S(0,0,-3)$

$$p \ldots \begin{cases} x = 2 + t \\ y = -4 - 2t \\ z = -1 + t \end{cases}$$

$T(2+t, -4-2t, -1+t)$

$$d(A,T) = 10\sqrt{2}$$

$$\sqrt{((2+t)-3)^2 + ((-4-2t)-4)^2 + ((-1+t)-2)^2} = 10\sqrt{2}$$

$$\sqrt{(t-1)^2 + (-2t-8)^2 + (t-3)^2} = 10\sqrt{2} \;\Big/^{2}$$

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$$6t^2 + 24t + 74 = 200$$

$$6t^2 + 24t - 126 = 0$$

c)

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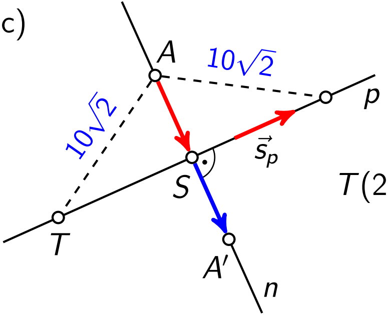

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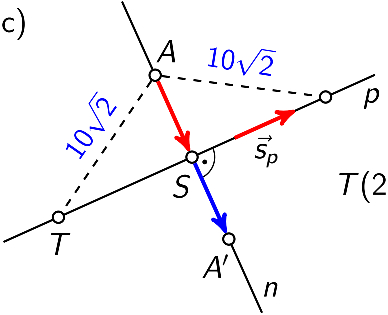
$$6t^2 + 24t - 126 = 0 \ / : 6$$

c)



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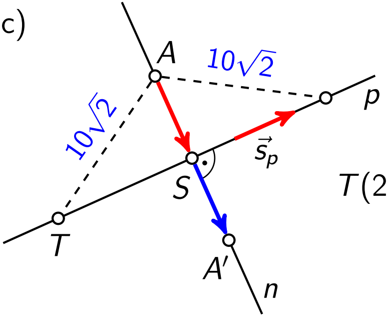
$$t^2 + 4t - 21 = 0$$

c)



$$A(3,4,2) \qquad \vec{s}_p = (1,-2,1) \qquad p \ldots \ \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$$

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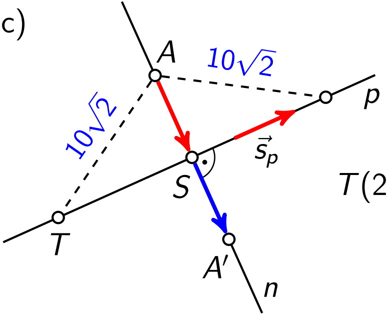
$$t^2 + 4t - 21 = 0$$

$$t_1 = 3, \ t_2 = -7$$

c)



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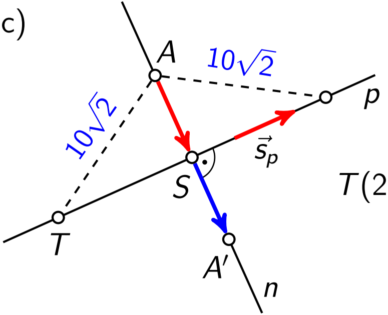

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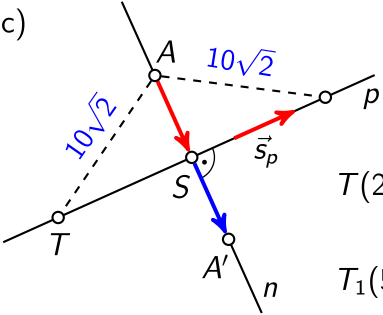

$A(3,4,2)$ $\quad \vec{s}_p = (1,-2,1)$ $\quad p \dots \frac{x-2}{1} = \frac{y+4}{-2} = \frac{z+1}{1}$

$\overrightarrow{AS} = (-3,-4,-5)$

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$$p \dots \begin{cases} x = 2+t \\ y = -4-2t \\ z = -1+t \end{cases}$$

$T(2+t, -4-2t, -1+t)$

$t = 3$

$T_1(5,-10,2)$

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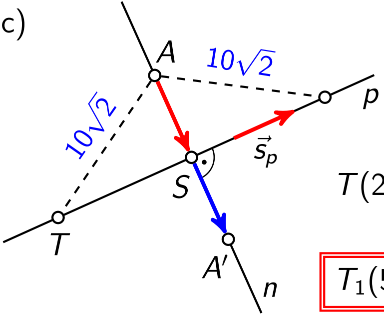
c)



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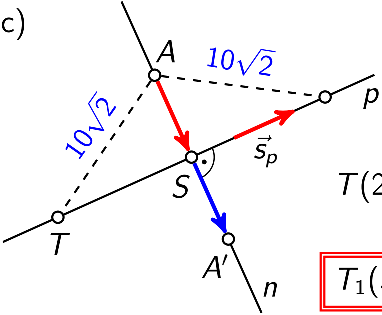
c)



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$T(2+t, -4-2t, -1+t)$

$t = 3$ $\quad t = -7$

$\boxed{\boxed{T_1(5,-10,2)}}$ $\quad T_2(-5,10,-8)$

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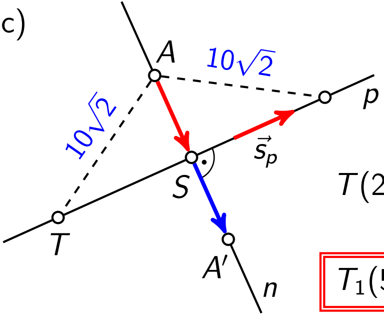

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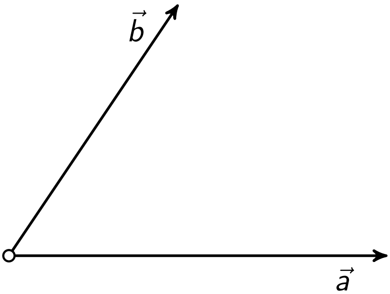
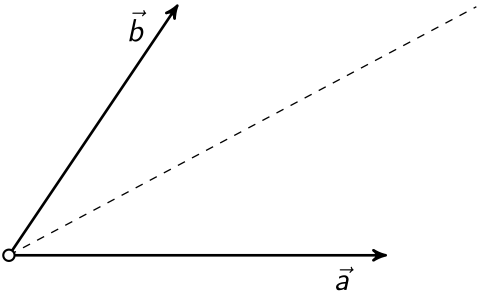
drugi zadatak

Simetrala kuta između dva vektora



Simetrala kuta između dva vektora



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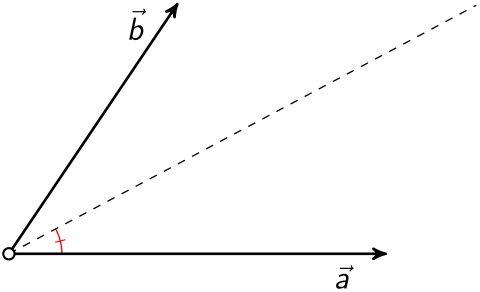

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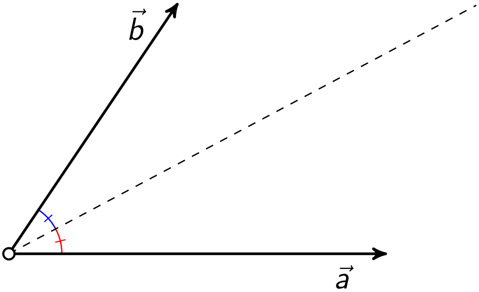
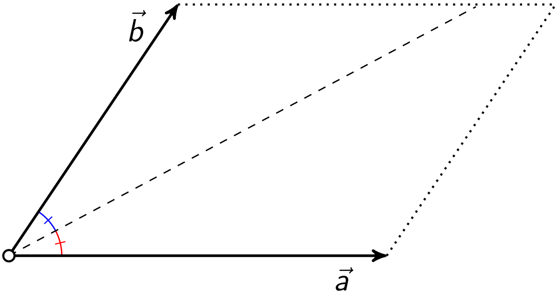
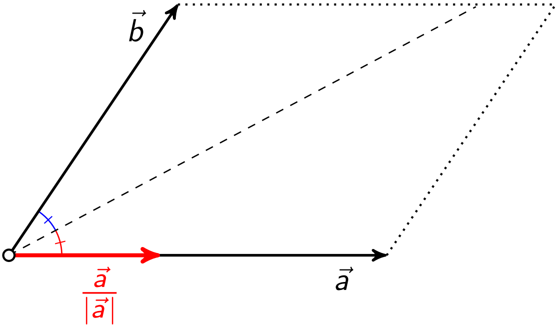


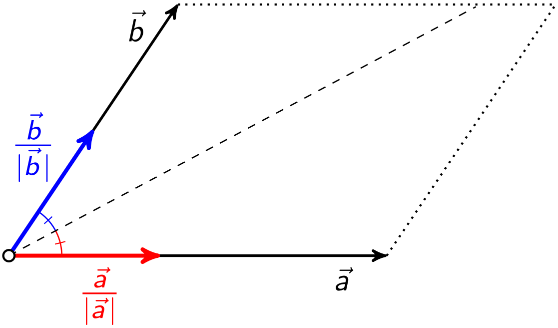
Simetrala kuta između dva vektora



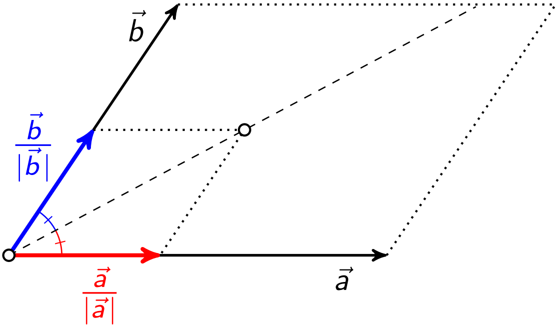
Simetrala kuta između dva vektora



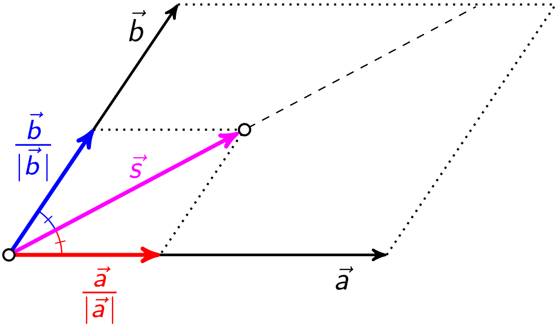
Simetrala kuta između dva vektora



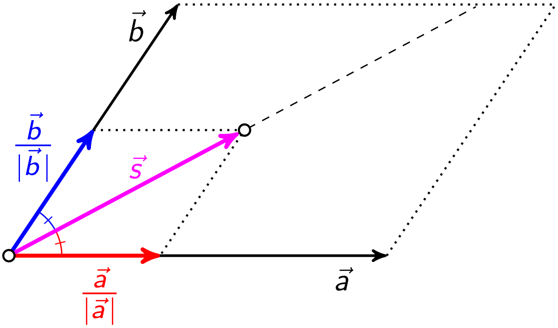
Simetrala kuta između dva vektora



Simetrala kuta između dva vektora



Simetrala kuta između dva vektora



$$\vec{s} = \frac{\vec{a}}{|\vec{a}|} + \frac{\vec{b}}{|\vec{b}|}$$

Zadatak 2

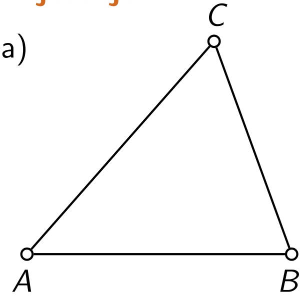
Zadane su točke $A(0,4,5)$, $B(0,0,2)$ *i* $C(6,0,2)$.

a) *Odredite točku* T *u kojoj simetrala* s_β *unutarnjeg kuta trokuta* ABC *pri vrhu* B *siječe stranicu* $\overline{AC}$.

b) *Odredite u kojem omjeru točka* T *dijeli dužinu* $\overline{AC}$.

Rješenje

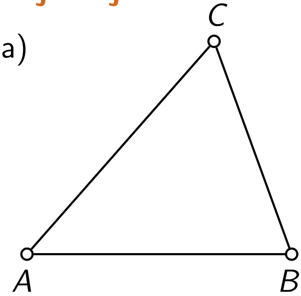
a)



Rješenje

$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$

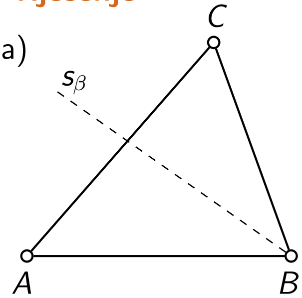
a)



Rješenje

$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$

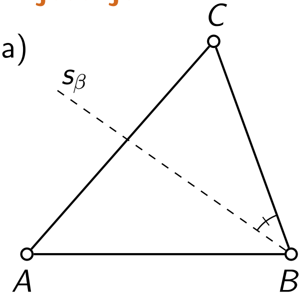
a)



Rješenje

$A(0,4,5), \ B(0,0,2), \ C(6,0,2)$

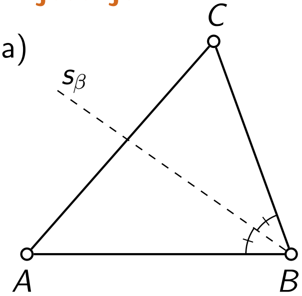
a)



Rješenje

$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$

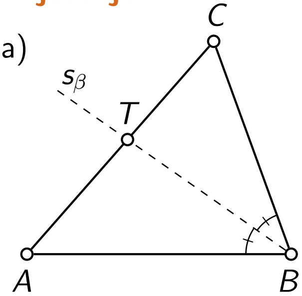
a)



Rješenje

$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$

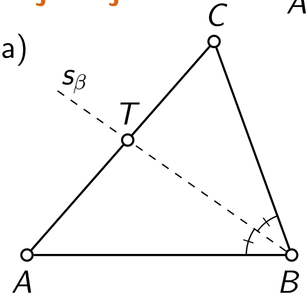
a)



Rješenje

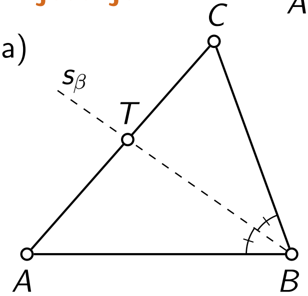
$AC \ldots A, \overrightarrow{AC} \qquad A(0,4,5), \; B(0,0,2), \; C(6,0,2)$

a)



Rješenje

a)



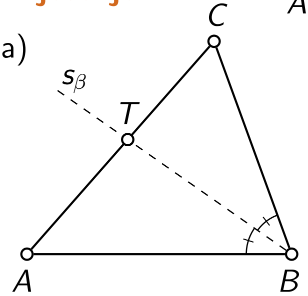
$AC \ldots A, \overrightarrow{AC}$

$A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$\overrightarrow{AC} =$

Rješenje

a)



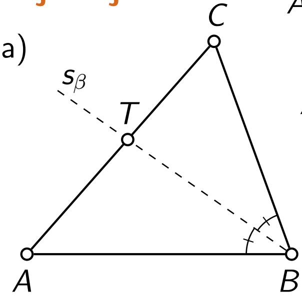
$AC \ldots A, \overrightarrow{AC}$

$A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$\overrightarrow{AC} = (6,-4,-3)$

Rješenje

a)



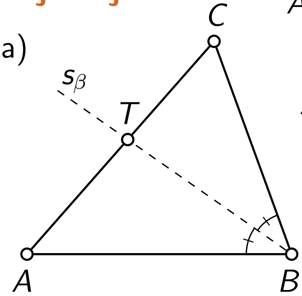
$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$AC \ldots \left\{ \vphantom{\begin{matrix}a\\b\\c\\d\end{matrix}} \right.$$

$$\overrightarrow{AC} = (6,-4,-3)$$

Rješenje

a)



$AC \ldots A,\ \overrightarrow{AC}$

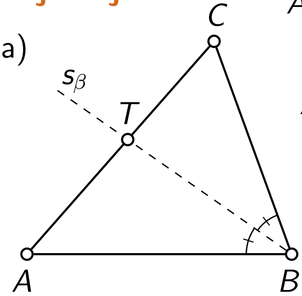
$A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$\overrightarrow{AC} = (6,-4,-3)$

$$AC \ldots \begin{cases} x = \\ y = \\ z = \end{cases}$$

Rješenje

a)



$AC \ldots A, \overrightarrow{AC}$

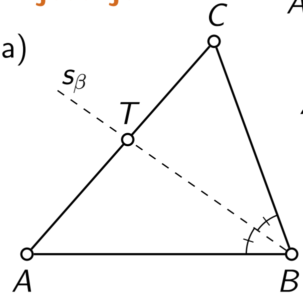
$A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$\overrightarrow{AC} = (6,-4,-3)$$

$$AC \ldots \begin{cases} x = 0 \\ y = 4 \\ z = 5 \end{cases}$$

Rješenje

a)



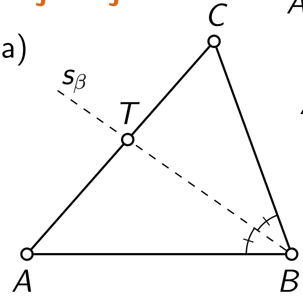
$AC \ldots A, \overrightarrow{AC}$ $A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$AC \ldots \begin{cases} x = 0 + \\ y = 4 + \\ z = 5 + \end{cases}$$

$$\overrightarrow{AC} = (6, -4, -3)$$

Rješenje

a)

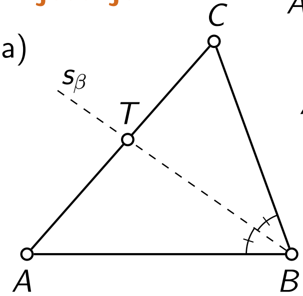


$AC \ldots A,\ \overrightarrow{AC}$ $\qquad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$AC \ldots \begin{cases} x = 0 + 6 \\ y = 4 + (-4) \\ z = 5 + (-3) \end{cases} \qquad \overrightarrow{AC} = (6,-4,-3)$$

Rješenje

a)



$AC \ldots A, \overrightarrow{AC}$ $\qquad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

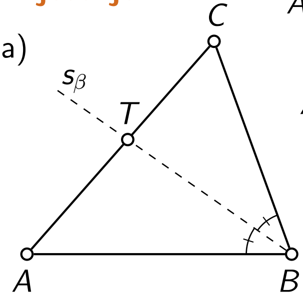
$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6, -4, -3)$$

Rješenje

$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

a)



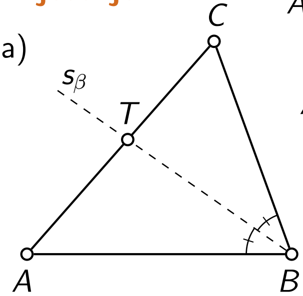
$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6, -4, -3)$$

$$AC \ldots \left\{ \begin{array}{l} \\ \\ \\ \end{array} \right.$$

Rješenje

a)



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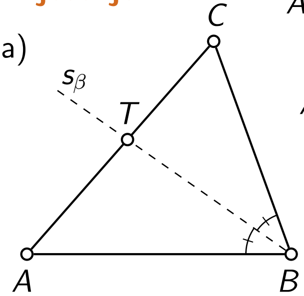
$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6,-4,-3)$$

$$AC \ldots \begin{cases} x = 6v \\ \\ \end{cases}$$

Rješenje

a)



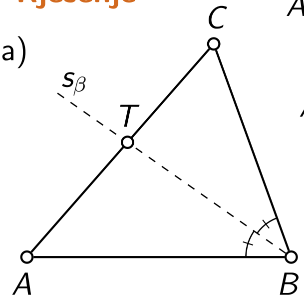
$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases} \qquad \overrightarrow{AC} = (6,-4,-3)$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ \end{cases}$$

Rješenje

a)



$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

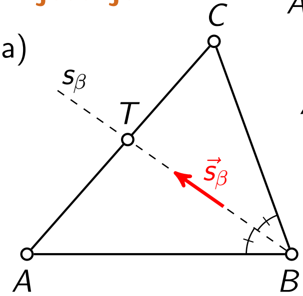
$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6, -4, -3)$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

Rješenje

a)



$AC \dots A,\ \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

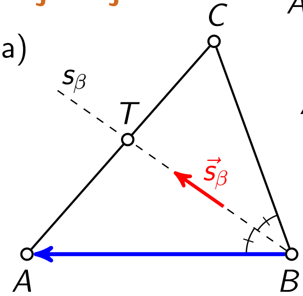
$$AC \dots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6,-4,-3)$$

$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

Rješenje

a)



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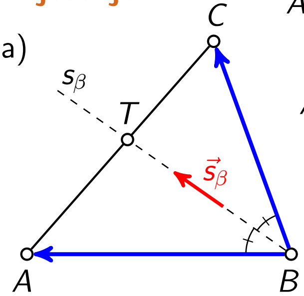
Rješenje

a)



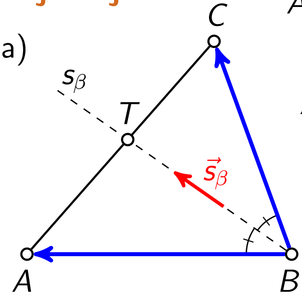
$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5), \ B(0,0,2), \ C(6,0,2)$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases} \qquad \overrightarrow{AC} = (6,-4,-3)$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

Rješenje

a)



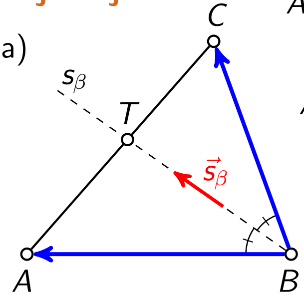
$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases} \qquad \overrightarrow{AC} = (6,-4,-3)$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases} \qquad \vec{s} = \frac{\overrightarrow{BA}}{|\overrightarrow{BA}|} + \frac{\overrightarrow{BC}}{|\overrightarrow{BC}|}$$

Rješenje

a)



$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6, -4, -3)$$

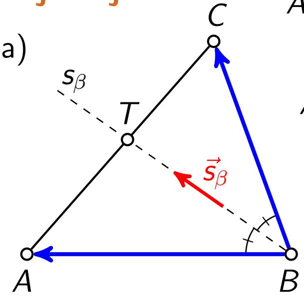
$$\overrightarrow{BA} =$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{|\overrightarrow{BA}|} + \frac{\overrightarrow{BC}}{|\overrightarrow{BC}|}$$

Rješenje

a)



$AC \ldots\ A,\ \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

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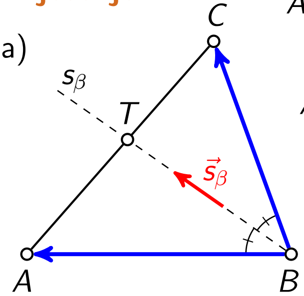
$$\overrightarrow{BA} = (0,4,3)$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{|\overrightarrow{BA}|} + \frac{\overrightarrow{BC}}{|\overrightarrow{BC}|}$$

Rješenje

a)



$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

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$\overrightarrow{AC} = (6,-4,-3)$

$\overrightarrow{BA} = (0,4,3)$

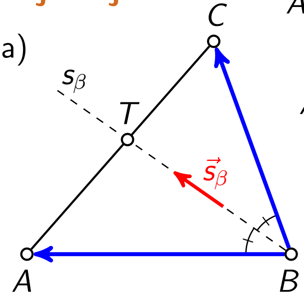
$\overrightarrow{BC} =$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{|\overrightarrow{BA}|} + \frac{\overrightarrow{BC}}{|\overrightarrow{BC}|}$$

Rješenje

a)



$AC \ldots\ A,\ \overrightarrow{AC}$ $A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6,-4,-3)$$

$$\overrightarrow{BA} = (0,4,3)$$

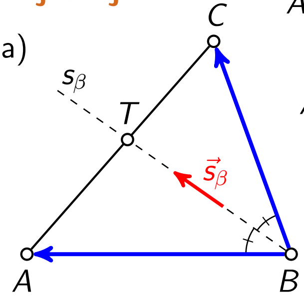
$$\overrightarrow{BC} = (6,0,0)$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{|\overrightarrow{BA}|} + \frac{\overrightarrow{BC}}{|\overrightarrow{BC}|}$$

Rješenje

a)



$AC \ldots\ A,\ \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

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$$\overrightarrow{BC} = (6,0,0)$$

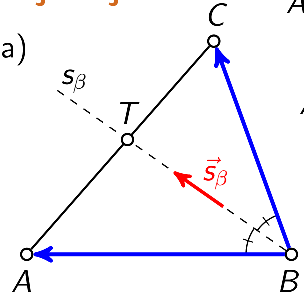
$$|\overrightarrow{BA}| =$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{|\overrightarrow{BA}|} + \frac{\overrightarrow{BC}}{|\overrightarrow{BC}|}$$

Rješenje

a)



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$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6, -4, -3)$$

$$\overrightarrow{BA} = (0, 4, 3)$$

$$\overrightarrow{BC} = (6, 0, 0)$$

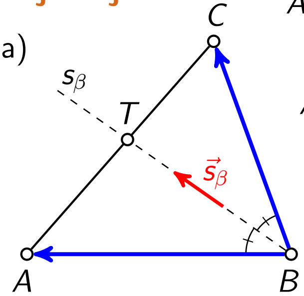
$$|\overrightarrow{BA}| = \sqrt{}$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{|\overrightarrow{BA}|} + \frac{\overrightarrow{BC}}{|\overrightarrow{BC}|}$$

Rješenje

a)



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$$\overrightarrow{BC} = (6, 0, 0)$$

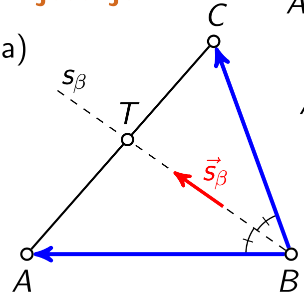
$$\left|\overrightarrow{BA}\right| = \sqrt{0^2 \qquad\qquad}$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{\left|\overrightarrow{BA}\right|} + \frac{\overrightarrow{BC}}{\left|\overrightarrow{BC}\right|}$$

Rješenje

a)



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$$\overrightarrow{AC} = (6, -4, -3)$$

$$\overrightarrow{BA} = (0, 4, 3)$$

$$\overrightarrow{BC} = (6, 0, 0)$$

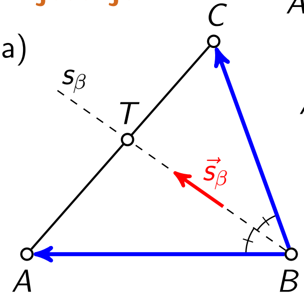
$$|\overrightarrow{BA}| = \sqrt{0^2 + 4^2}$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{|\overrightarrow{BA}|} + \frac{\overrightarrow{BC}}{|\overrightarrow{BC}|}$$

Rješenje

a)



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$$\overrightarrow{AC} = (6,-4,-3)$$

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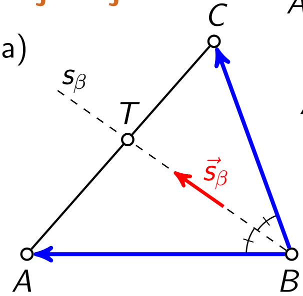
$$\left|\overrightarrow{BA}\right| = \sqrt{0^2 + 4^2 + 3^2}$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{\left|\overrightarrow{BA}\right|} + \frac{\overrightarrow{BC}}{\left|\overrightarrow{BC}\right|}$$

Rješenje

a)



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$$\overrightarrow{AC} = (6,-4,-3)$$

$$\overrightarrow{BA} = (0,4,3)$$

$$\overrightarrow{BC} = (6,0,0)$$

$$\left|\overrightarrow{BA}\right| = \sqrt{0^2 + 4^2 + 3^2} = 5$$

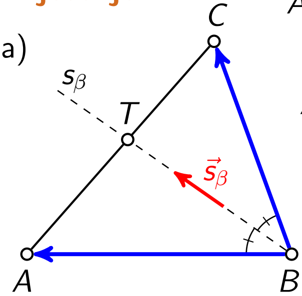
$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{\left|\overrightarrow{BA}\right|} + \frac{\overrightarrow{BC}}{\left|\overrightarrow{BC}\right|}$$

Rješenje

$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

a)



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$$\overrightarrow{AC} = (6, -4, -3)$$

$$\overrightarrow{BA} = (0, 4, 3)$$

$$\overrightarrow{BC} = (6, 0, 0)$$

$$\left|\overrightarrow{BA}\right| = \sqrt{0^2 + 4^2 + 3^2} = 5$$

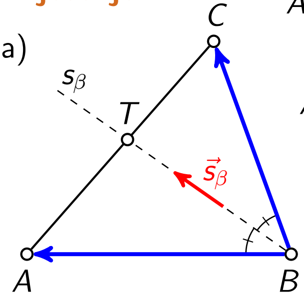
$$\left|\overrightarrow{BC}\right| =$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{\left|\overrightarrow{BA}\right|} + \frac{\overrightarrow{BC}}{\left|\overrightarrow{BC}\right|}$$

Rješenje

a)



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$$\left|\overrightarrow{BA}\right| = \sqrt{0^2 + 4^2 + 3^2} = 5$$

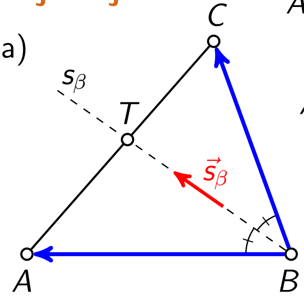
$$\left|\overrightarrow{BC}\right| = \sqrt{}$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{\left|\overrightarrow{BA}\right|} + \frac{\overrightarrow{BC}}{\left|\overrightarrow{BC}\right|}$$

Rješenje

a)



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$$\left|\overrightarrow{BA}\right| = \sqrt{0^2 + 4^2 + 3^2} = 5$$

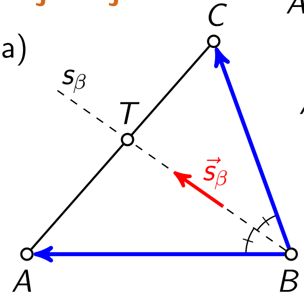
$$\left|\overrightarrow{BC}\right| = \sqrt{6^2 }$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{\left|\overrightarrow{BA}\right|} + \frac{\overrightarrow{BC}}{\left|\overrightarrow{BC}\right|}$$

Rješenje

a)



$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6,-4,-3)$$

$$\overrightarrow{BA} = (0,4,3)$$

$$\overrightarrow{BC} = (6,0,0)$$

$$\left|\overrightarrow{BA}\right| = \sqrt{0^2 + 4^2 + 3^2} = 5$$

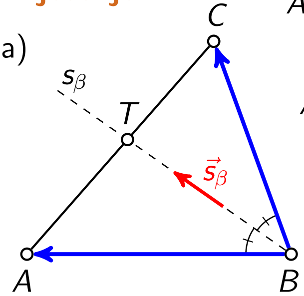
$$\left|\overrightarrow{BC}\right| = \sqrt{6^2 + 0^2 }$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{|\overrightarrow{BA}|} + \frac{\overrightarrow{BC}}{|\overrightarrow{BC}|}$$

Rješenje

a)



$$AC \ldots A,\ \overrightarrow{AC} \qquad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6,-4,-3)$$

$$\overrightarrow{BA} = (0,4,3)$$

$$\overrightarrow{BC} = (6,0,0)$$

$$\left|\overrightarrow{BA}\right| = \sqrt{0^2 + 4^2 + 3^2} = 5$$

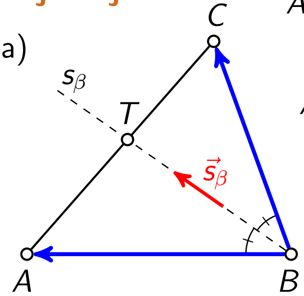
$$\left|\overrightarrow{BC}\right| = \sqrt{6^2 + 0^2 + 0^2}$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{\left|\overrightarrow{BA}\right|} + \frac{\overrightarrow{BC}}{\left|\overrightarrow{BC}\right|}$$

Rješenje

a)



$AC \ldots A, \overrightarrow{AC}$ $\quad A(0,4,5), \ B(0,0,2), \ C(6,0,2)$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6, -4, -3)$$

$$\overrightarrow{BA} = (0, 4, 3)$$

$$\overrightarrow{BC} = (6, 0, 0)$$

$$\left|\overrightarrow{BA}\right| = \sqrt{0^2 + 4^2 + 3^2} = 5$$

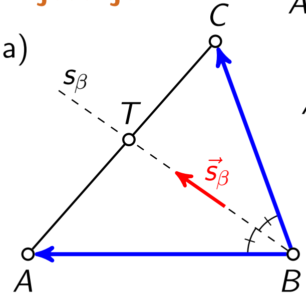
$$\left|\overrightarrow{BC}\right| = \sqrt{6^2 + 0^2 + 0^2} = 6$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{|\overrightarrow{BA}|} + \frac{\overrightarrow{BC}}{|\overrightarrow{BC}|}$$

Rješenje

a)



$$AC \ldots\ A,\ \overrightarrow{AC} \qquad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

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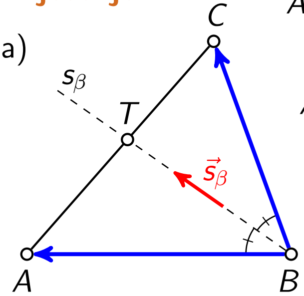
$$\vec{s} = \frac{\overrightarrow{BA}}{\left|\overrightarrow{BA}\right|} + \frac{\overrightarrow{BC}}{\left|\overrightarrow{BC}\right|} = \frac{1}{5} \cdot$$

Rješenje

a)



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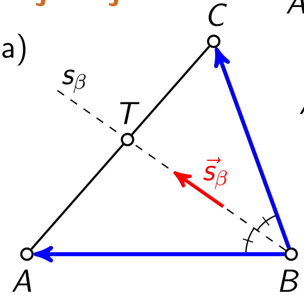
Rješenje

a)



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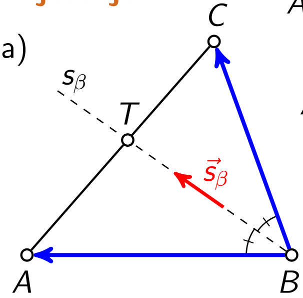
Rješenje

a)



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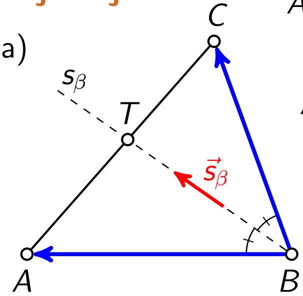
Rješenje

a)



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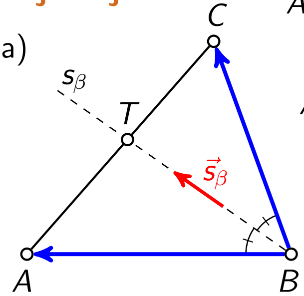
$$\vec{s} =$$

Rješenje

a)



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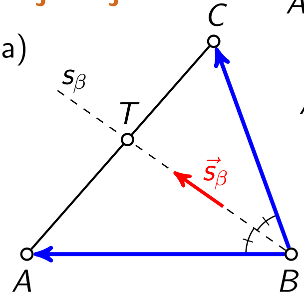
$$\vec{s} = \left(1, \frac{4}{5}, \frac{3}{5}\right)$$

Rješenje

a)



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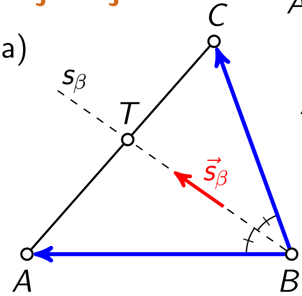
$$\vec{s} = \left(1, \frac{4}{5}, \frac{3}{5}\right) \qquad \vec{s}_\beta = 5\vec{s}$$

Rješenje

a)



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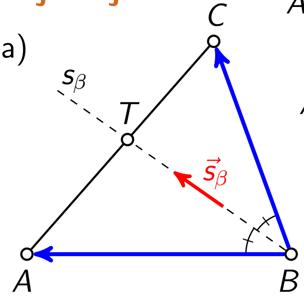
Rješenje

a)



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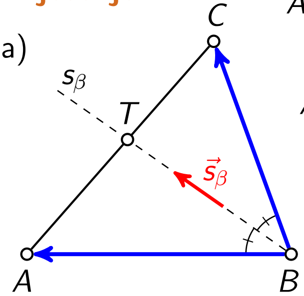
$$s_\beta \ldots B,\ \vec{s}_\beta$$

Rješenje

a)



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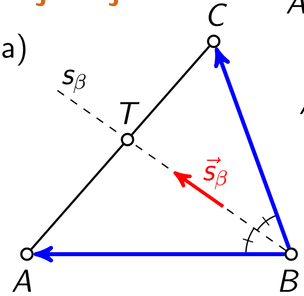
$$s_\beta \ldots B,\ \vec{s}_\beta \qquad s_\beta \ldots \begin{cases} \\ \\ \end{cases}$$

Rješenje

a)



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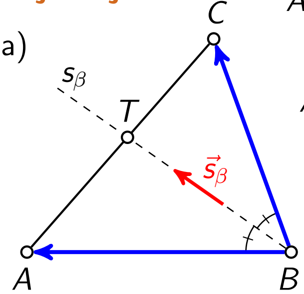
Rješenje

a)



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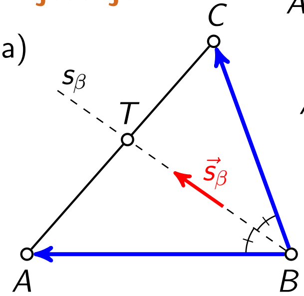
$$s_\beta \ldots B,\ \vec{s}_\beta \qquad s_\beta \ldots \begin{cases} x = 0 \\ y = 0 \\ z = 2 \end{cases}$$

Rješenje

a)



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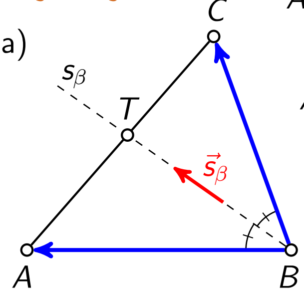
$$s_\beta \ldots B,\ \vec{s}_\beta \qquad s_\beta \ldots \begin{cases} x = 0 + \\ y = 0 + \\ z = 2 + \end{cases}$$

Rješenje

a)



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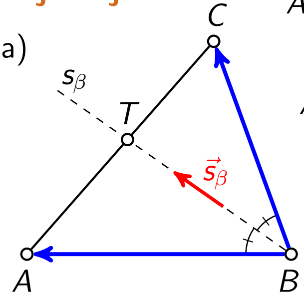
$$s_\beta \ldots B,\ \vec{s}_\beta \qquad s_\beta \ldots \begin{cases} x = 0 + 5 \\ y = 0 + 4 \\ z = 2 + 3 \end{cases}$$

Rješenje

a)



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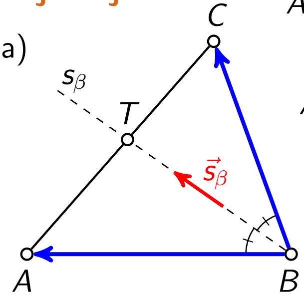
$$s_\beta \ldots\ B,\ \vec{s}_\beta \qquad s_\beta \ldots \begin{cases} x = 0 + 5 \cdot u \\ y = 0 + 4 \cdot u \\ z = 2 + 3 \cdot u \end{cases}$$

Rješenje

a)



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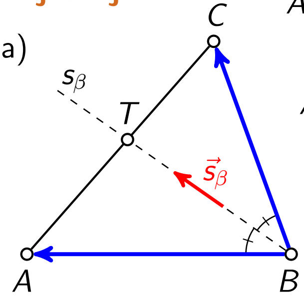
$$\vec{s} = \left(1, \frac{4}{5}, \frac{3}{5}\right) \qquad \vec{s}_\beta = 5\vec{s} = (5,4,3)$$

$$s_\beta \ldots \begin{cases} \\ \\ \\ \end{cases}$$

$$s_\beta \ldots B,\ \vec{s}_\beta \qquad s_\beta \ldots \begin{cases} x = 0 + 5 \cdot u \\ y = 0 + 4 \cdot u \\ z = 2 + 3 \cdot u \end{cases}$$

Rješenje

a)



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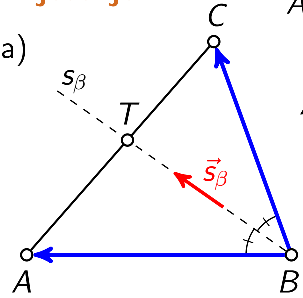
$$s_\beta \ldots \begin{cases} x = 5u \\ \\ \\ \end{cases}$$

$$s_\beta \ldots B,\ \vec{s}_\beta$$

$$s_\beta \ldots \begin{cases} x = 0 + 5 \cdot u \\ y = 0 + 4 \cdot u \\ z = 2 + 3 \cdot u \end{cases}$$

Rješenje

a)



$$AC \ldots A,\ \overrightarrow{AC} \qquad A(0,4,5),\ B(0,0,2),\ C(6,0,2)$$

$$AC \ldots \begin{cases} x = 0 + 6 \cdot v \\ y = 4 + (-4) \cdot v \\ z = 5 + (-3) \cdot v \end{cases}$$

$$\overrightarrow{AC} = (6,-4,-3)$$

$$\overrightarrow{BA} = (0,4,3)$$

$$\overrightarrow{BC} = (6,0,0)$$

$$\left|\overrightarrow{BA}\right| = \sqrt{0^2 + 4^2 + 3^2} = 5$$

$$\left|\overrightarrow{BC}\right| = \sqrt{6^2 + 0^2 + 0^2} = 6$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$\vec{s} = \frac{\overrightarrow{BA}}{\left|\overrightarrow{BA}\right|} + \frac{\overrightarrow{BC}}{\left|\overrightarrow{BC}\right|} = \frac{1}{5} \cdot (0,4,3) + \frac{1}{6} \cdot (6,0,0)$$

$$\vec{s} = \left(1, \frac{4}{5}, \frac{3}{5}\right) \qquad \vec{s}_\beta = 5\vec{s} = (5,4,3)$$

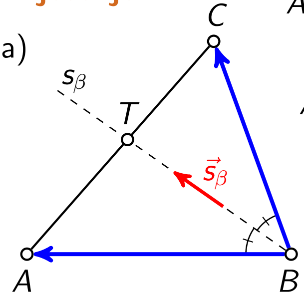
$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ \end{cases}$$

$$s_\beta \ldots B,\ \vec{s}_\beta$$

$$s_\beta \ldots \begin{cases} x = 0 + 5 \cdot u \\ y = 0 + 4 \cdot u \\ z = 2 + 3 \cdot u \end{cases}$$

Rješenje

a)



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$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$s_\beta \ldots B,\ \vec{s}_\beta$

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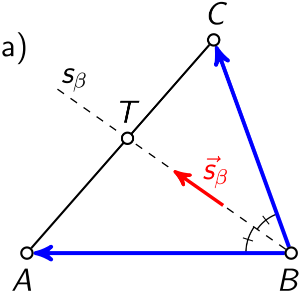
a)



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$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

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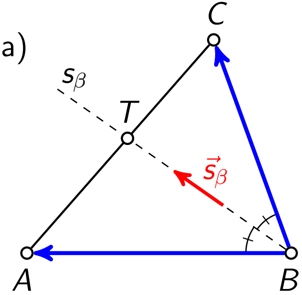

$$\boxed{T = s_\beta \cap AC}$$

$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

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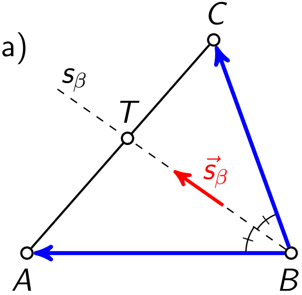
a)



$$\boxed{T = s_\beta \cap AC}$$

$$5u = 6v$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

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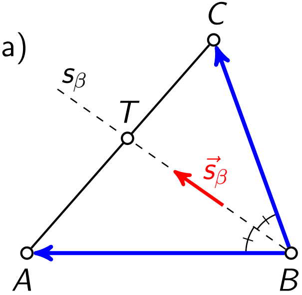

$$\boxed{T = s_\beta \cap AC}$$

$$5u = 6v$$

$$4u = 4 - 4v$$

$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

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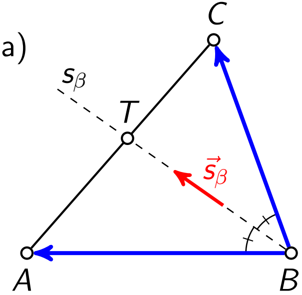

$$\boxed{T = s_\beta \cap AC}$$

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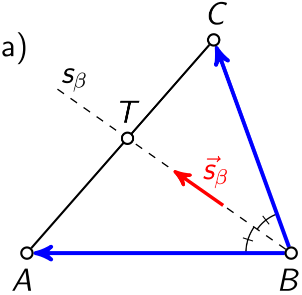
a)



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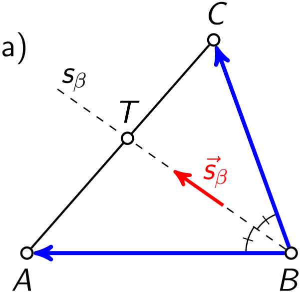

$$\boxed{T = s_\beta \cap AC}$$

$$\begin{array}{r} 5u = 6v \\ 4u = 4 - 4v \\ 2 + 3u = 5 - 3v \\ \hline 5u - 6v = 0 \end{array}$$

$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$s_\beta \dots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

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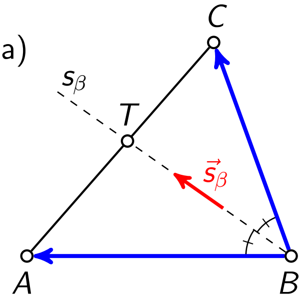

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$$\begin{aligned} 5u &= 6v \\ 4u &= 4 - 4v \\ 2 + 3u &= 5 - 3v \end{aligned}$$

$$5u - 6v = 0$$

$$4u + 4v = 4$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

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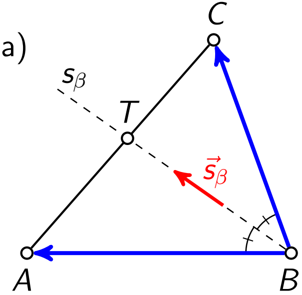

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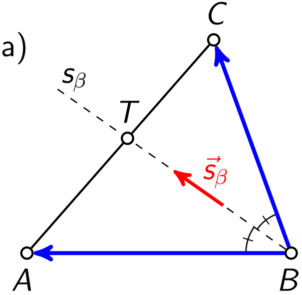
$$\begin{aligned} 5u &= 6v \\ 4u &= 4 - 4v \\ 2 + 3u &= 5 - 3v \end{aligned}$$

$$\begin{aligned} 5u - 6v &= 0 \\ 4u + 4v &= 4 \\ 3u + 3v &= 3 \end{aligned}$$

a)



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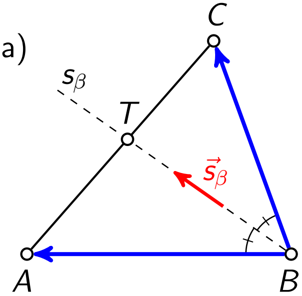
$$4u + 4v = 4$$
$$3u + 3v = 3$$

u	v	

a)



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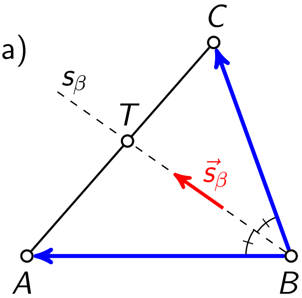
u	v	
5	-6	0

a)



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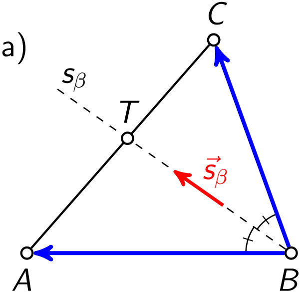
u	v	
5	−6	0
4	4	4

a)



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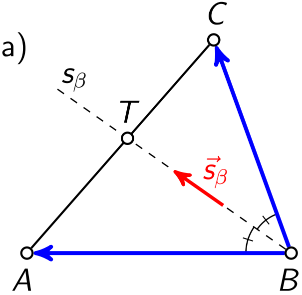
u	v	
5	−6	0
4	4	4
3	3	3

a)



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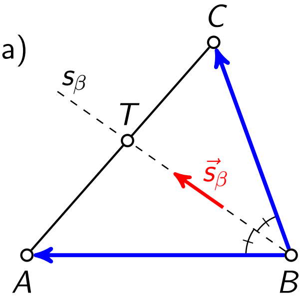
u	v	
5	-6	0
4	4	4
3	3	3

a)



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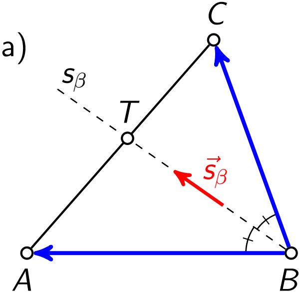
u	v		
5	-6	0	
4	4	4	$/ : 4$
3	3	3	

a)



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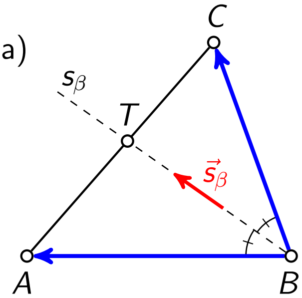
u	v		
5	-6	0	
4	4	4	$/:4$
3	3	3	$/:3$

a)



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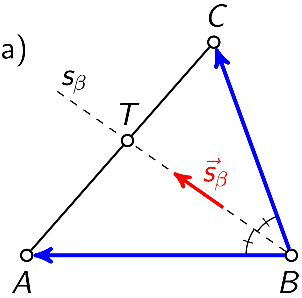
u	v		
5	-6	0	
4	4	4	$/ : 4$
3	3	3	$/ : 3$
5	-6	0	

a)



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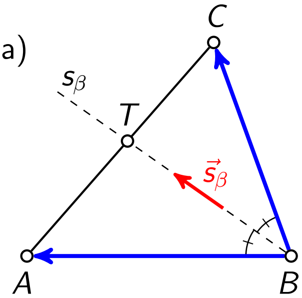
u	v		
5	-6	0	
4	4	4	/ : 4
3	3	3	/ : 3
5	-6	0	
1	1	1	

a)



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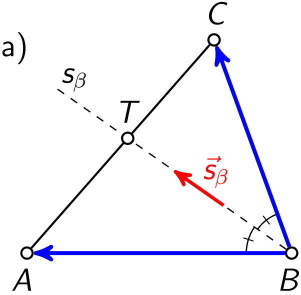
u	v		
5	−6	0	
4	4	4	/ : 4
3	3	3	/ : 3
5	−6	0	
1	1	1	
1	1	1	

a)



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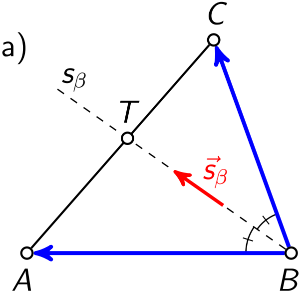
u	v		
5	−6	0	
4	4	4	/ : 4
3	3	3	/ : 3
5	−6	0	
1	1	1	
1	1	1	

a)



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$$5u - 6v = 0$$
$$4u + 4v = 4$$
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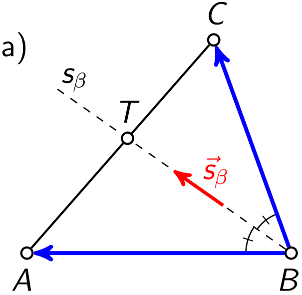
u	v		
5	−6	0	
4	4	4	/ : 4
3	3	3	/ : 3
5	−6	0	
1	1	1	
1	1	1	
5	−6	0	

a)



$$\boxed{T = s_\beta \cap AC}$$

$$5u = 6v$$
$$4u = 4 - 4v$$
$$2 + 3u = 5 - 3v$$

$$5u - 6v = 0$$
$$4u + 4v = 4$$
$$3u + 3v = 3$$

u	v		
5	-6	0	
4	4	4	$/:4$
3	3	3	$/:3$
5	-6	0	
1	1	1	
1	1	1	
5	-6	0	
1	1	1	

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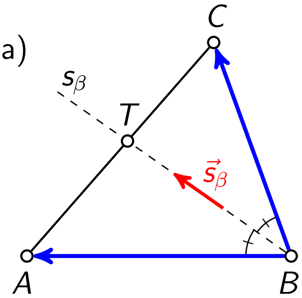
a)



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$$5u - 6v = 0$$
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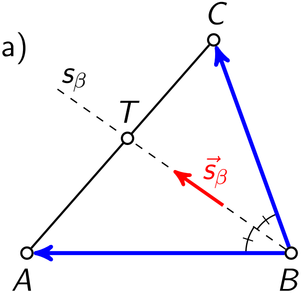
u	v		
5	−6	0	
4	4	4	/ : 4
3	3	3	/ : 3
5	−6	0	
1	1	1	
1	1	1	
5	−6	0	
1	1	1	

a)



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$$5u - 6v = 0$$
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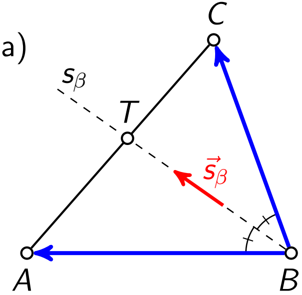
$$3u + 3v = 3$$

u	v		
5	-6	0	
4	4	4	$/ : 4$
3	3	3	$/ : 3$
5	-6	0	
1	1	1	
1	1	1	
5	-6	0	
1	$\textcircled{1}$	1	

a)



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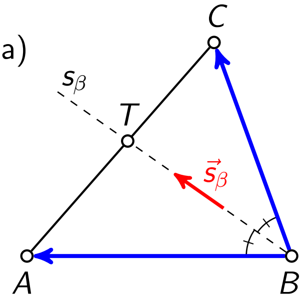
$$\begin{array}{cc|cl} u & v & & \\ \hline 5 & -6 & 0 & \\ 4 & 4 & 4 & /:4 \\ 3 & 3 & 3 & /:3 \\ \hline 5 & -6 & 0 & \\ 1 & 1 & 1 & \\ 1 & 1 & 1 & \\ \hline 5 & -6 & 0 & \\ 1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline \end{array}$$

a)



$$\boxed{T = s_\beta \cap AC}$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

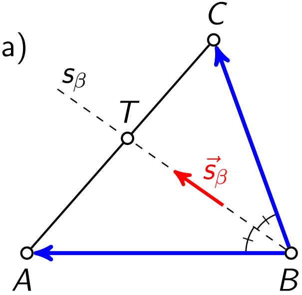
$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\begin{aligned} 5u &= 6v \\ 4u &= 4 - 4v \\ 2 + 3u &= 5 - 3v \end{aligned}$$

$$\begin{aligned} 5u - 6v &= 0 \\ 4u + 4v &= 4 \\ 3u + 3v &= 3 \end{aligned}$$

u	v		
5	−6	0	
4	4	4	/ : 4
3	3	3	/ : 3
5	−6	0	
1	1	1	
1	1	1	
5	−6	0	$\leftarrow +$
1	①	1	/ · 6

a)



$$\boxed{T = s_\beta \cap AC}$$

$$\begin{aligned} 5u &= 6v \\ 4u &= 4-4v \\ 2+3u &= 5-3v \end{aligned}$$

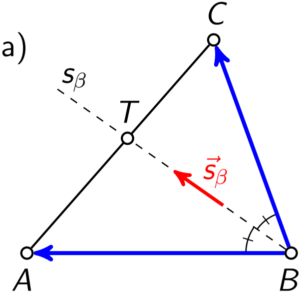
$$\begin{aligned} 5u - 6v &= 0 \\ 4u + 4v &= 4 \\ 3u + 3v &= 3 \end{aligned}$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\begin{array}{cc|cl}
u & v & & \\
\hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\
\hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\
\hline
5 & -6 & 0 & \overset{+}{\leftarrow} \\
1 & \textcircled{1} & 1 & /\cdot 6 \\
\hline
 & & & \\
1 & 1 & 1 &
\end{array}$$

a)



$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\boxed{T = s_\beta \cap AC}$$

$$\begin{aligned} 5u &= 6v \\ 4u &= 4 - 4v \\ 2 + 3u &= 5 - 3v \end{aligned}$$

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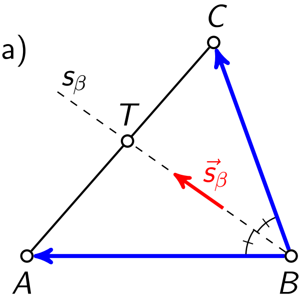
$$\begin{array}{cc|cl}
u & v & & \\
\hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\
\hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\
\hline
5 & -6 & 0 & \xleftarrow{+} \\
1 & \textcircled{1} & 1 & /\cdot 6 \\
\hline
11 & & & \\
1 & 1 & 1 & \\
\end{array}$$

a)



$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

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$$\begin{aligned} 5u &= 6v \\ 4u &= 4 - 4v \\ 2 + 3u &= 5 - 3v \end{aligned}$$

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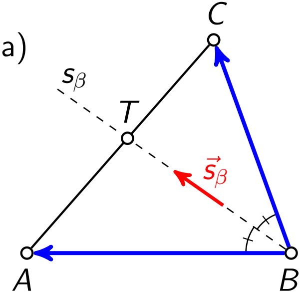
$$\begin{array}{cc|cl} u & v & & \\ \hline 5 & -6 & 0 & \\ 4 & 4 & 4 & /:4 \\ 3 & 3 & 3 & /:3 \\ \hline 5 & -6 & 0 & \\ 1 & 1 & 1 & \\ 1 & 1 & 1 & \\ \hline 5 & -6 & 0 & \xleftarrow{+} \\ 1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline 11 & 0 & & \\ 1 & 1 & 1 & \end{array}$$

a)



$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

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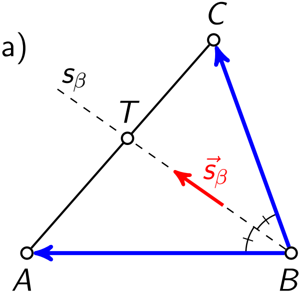
$$\begin{array}{r} 5u = 6v \\ 4u = 4 - 4v \\ 2 + 3u = 5 - 3v \\ \hline 5u - 6v = 0 \\ 4u + 4v = 4 \\ 3u + 3v = 3 \end{array}$$

$$\begin{array}{cc|cl} u & v & & \\ \hline 5 & -6 & 0 & \\ 4 & 4 & 4 & /:4 \\ 3 & 3 & 3 & /:3 \\ \hline 5 & -6 & 0 & \\ 1 & 1 & 1 & \\ 1 & 1 & 1 & \\ \hline 5 & -6 & 0 & \overset{+}{\longleftarrow} \\ 1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline 11 & 0 & 6 & \\ 1 & 1 & 1 & \end{array}$$

a)



$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$s_\beta \dots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

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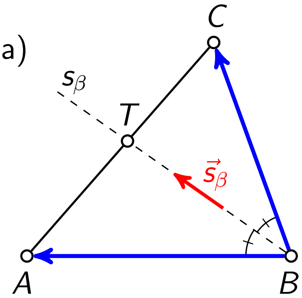
$$\begin{array}{r} 5u = 6v \\ 4u = 4 - 4v \\ 2 + 3u = 5 - 3v \\ \hline \end{array}$$

$$\begin{array}{l} 5u - 6v = 0 \\ 4u + 4v = 4 \\ 3u + 3v = 3 \end{array}$$

$$\begin{array}{cc|cl} u & v & & \\ \hline 5 & -6 & 0 & \\ 4 & 4 & 4 & /:4 \\ 3 & 3 & 3 & /:3 \\ \hline 5 & -6 & 0 & \\ 1 & 1 & 1 & \\ 1 & 1 & 1 & \\ \hline 5 & -6 & 0 & \overset{+}{\leftarrow} \\ 1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline 11 & 0 & 6 & \\ 1 & 1 & 1 & \\ \hline \end{array}$$

a)



$$\boxed{T = s_\beta \cap AC}$$

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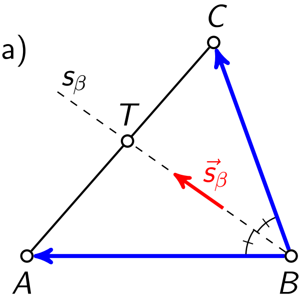
$$\begin{array}{r}
5u = 6v \\
4u = 4 - 4v \\
2 + 3u = 5 - 3v \\ \hline
\end{array}$$

$$\begin{array}{l}
5u - 6v = 0 \\
4u + 4v = 4 \\
3u + 3v = 3
\end{array}$$

$$\begin{array}{cc|cl}
u & v & & \\ \hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\ \hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\ \hline
5 & -6 & 0 & \xleftarrow{+} \\
1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline
\textcircled{11} & 0 & 6 & \\
1 & 1 & 1 & \\ \hline
\end{array}$$

a)



$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

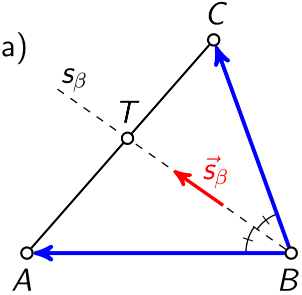
$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\boxed{T = s_\beta \cap AC}$$

$$\begin{array}{rcl} 5u &=& 6v \\ 4u &=& 4 - 4v \\ 2 + 3u &=& 5 - 3v \\ \hline 5u - 6v &=& 0 \\ 4u + 4v &=& 4 \\ 3u + 3v &=& 3 \end{array}$$

$$\begin{array}{cc|cl}
u & v & & \\ \hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\ \hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\ \hline
5 & -6 & 0 & \overset{+}{\leftarrow} \\
1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline
\textcircled{11} & 0 & 6 & /\cdot \frac{-1}{11} \\
1 & 1 & 1 & \\ \hline
\end{array}$$

a)



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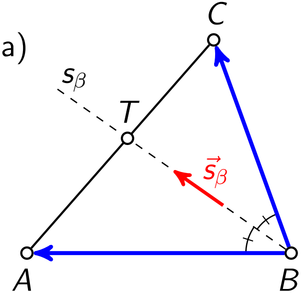
$$5u - 6v = 0$$
$$4u + 4v = 4$$
$$3u + 3v = 3$$

u	v		
5	−6	0	
4	4	4	$/ : 4$
3	3	3	$/ : 3$
5	−6	0	
1	1	1	
1	1	1	
5	−6	0	$+$
1	$\textcircled{1}$	1	$/ \cdot 6$
$\textcircled{11}$	0	6	$/ \cdot \frac{-1}{11}$
1	1	1	$+$

a)



$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

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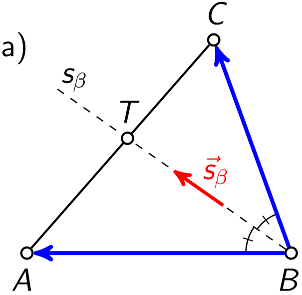
$$\begin{array}{cc|cl}
u & v & & \\
\hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\
\hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\
\hline
5 & -6 & 0 & \leftarrow + \\
1 & \textcircled{1} & 1 & /\cdot 6 \\
\hline
\textcircled{11} & 0 & 6 & /\cdot \frac{-1}{11} \\
1 & 1 & 1 & \leftarrow + \\
\hline
11 & 0 & 6 & \\
\end{array}$$

a)



$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$s_\beta \dots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\boxed{T = s_\beta \cap AC}$$

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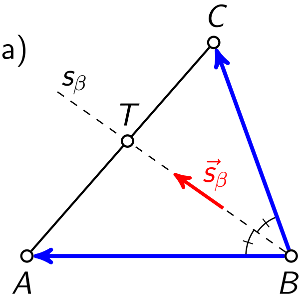
$$\begin{array}{cc|cl}
u & v & & \\
\hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\
\hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\
\hline
5 & -6 & 0 & \xleftarrow{+} \\
1 & \textcircled{1} & 1 & /\cdot 6 \\
\hline
\textcircled{11} & 0 & 6 & /\cdot \frac{-1}{11} \\
1 & 1 & 1 & \xleftarrow{+} \\
\hline
11 & 0 & 6 & \\
0 & & &
\end{array}$$

a)



$$\boxed{T = s_\beta \cap AC}$$

$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

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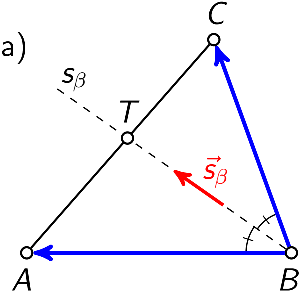
$$\begin{array}{r} 5u = 6v \\ 4u = 4 - 4v \\ 2 + 3u = 5 - 3v \\ \hline \end{array}$$

$$\begin{array}{l} 5u - 6v = 0 \\ 4u + 4v = 4 \\ 3u + 3v = 3 \end{array}$$

$$\begin{array}{cc|cl}
u & v & & \\ \hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\ \hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\ \hline
5 & -6 & 0 & \leftarrow + \\
1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline
\textcircled{11} & 0 & 6 & /\cdot \frac{-1}{11} \\
1 & 1 & 1 & \leftarrow + \\ \hline
11 & 0 & 6 & \\
0 & 1 & &
\end{array}$$

a)



$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

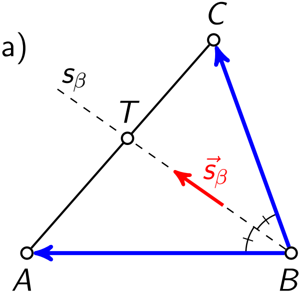
$$s_\beta \dots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\boxed{T = s_\beta \cap AC}$$

$$\begin{array}{rl} 5u &= 6v \\ 4u &= 4 - 4v \\ 2 + 3u &= 5 - 3v \\ \hline 5u - 6v &= 0 \\ 4u + 4v &= 4 \\ 3u + 3v &= 3 \end{array}$$

$$\begin{array}{cc|cl} u & v & & \\ \hline 5 & -6 & 0 & \\ 4 & 4 & 4 & /:4 \\ 3 & 3 & 3 & /:3 \\ \hline 5 & -6 & 0 & \\ 1 & 1 & 1 & \\ 1 & 1 & 1 & \\ \hline 5 & -6 & 0 & \leftarrow + \\ 1 & \enclose{circle}{1} & 1 & /\cdot 6 \\ \hline \enclose{circle}{11} & 0 & 6 & /\cdot \frac{-1}{11} \\ 1 & 1 & 1 & \leftarrow + \\ \hline 11 & 0 & 6 & \\ 0 & 1 & \frac{5}{11} & \end{array}$$

a)



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$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$s_\beta \dots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

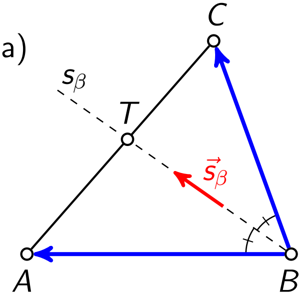
$$\begin{array}{r}
5u = 6v \\
4u = 4 - 4v \\
2 + 3u = 5 - 3v \\
\hline
\end{array}$$

$$\begin{array}{l}
5u - 6v = 0 \\
4u + 4v = 4 \\
3u + 3v = 3
\end{array}$$

$$\begin{array}{cc|cl}
u & v & & \\
\hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\
\hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\
\hline
5 & -6 & 0 & \leftarrow + \\
1 & \enclose{circle}{1} & 1 & /\cdot 6 \\
\hline
\enclose{circle}{11} & 0 & 6 & /\cdot \dfrac{-1}{11} \\
1 & 1 & 1 & \leftarrow + \\
\hline
11 & 0 & 6 & \\
0 & 1 & \dfrac{5}{11} &
\end{array}$$

$$u = \frac{6}{11}$$

a)



$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$s_\beta \dots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

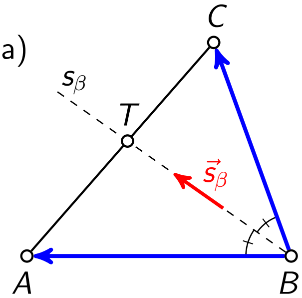
$$\boxed{T = s_\beta \cap AC}$$

$$\begin{array}{r} 5u = 6v \\ 4u = 4 - 4v \\ 2 + 3u = 5 - 3v \\ \hline \end{array}$$

$$\begin{array}{l} 5u - 6v = 0 \\ 4u + 4v = 4 \\ 3u + 3v = 3 \end{array}$$

$$\begin{array}{cc|cl}
u & v & & \\ \hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\ \hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\ \hline
5 & -6 & 0 & \leftarrow + \\
1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline
\textcircled{11} & 0 & 6 & /\cdot \frac{-1}{11} \\
1 & 1 & 1 & \leftarrow + \\ \hline
11 & 0 & 6 & \\
0 & 1 & \frac{5}{11} &
\end{array}$$

$$\boxed{u = \frac{6}{11}}$$



$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\boxed{T = s_\beta \cap AC}$$

$$\begin{aligned} 5u &= 6v \\ 4u &= 4 - 4v \\ 2 + 3u &= 5 - 3v \end{aligned}$$

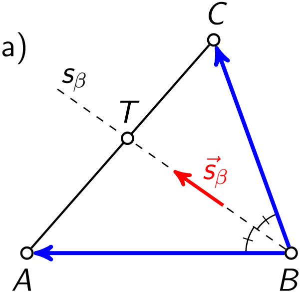
$$\begin{aligned} 5u - 6v &= 0 \\ 4u + 4v &= 4 \\ 3u + 3v &= 3 \end{aligned}$$

$$v = \frac{5}{11}$$

$$\boxed{u = \frac{6}{11}}$$

u	v		
5	−6	0	
4	4	4	/ : 4
3	3	3	/ : 3
5	−6	0	
1	1	1	
1	1	1	
5	−6	0	+
1	1	1	/ · 6
11	0	6	/ · $\frac{-1}{11}$
1	1	1	+
11	0	6	
0	1	$\frac{5}{11}$	

a)



$$\boxed{T = s_\beta \cap AC}$$

$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

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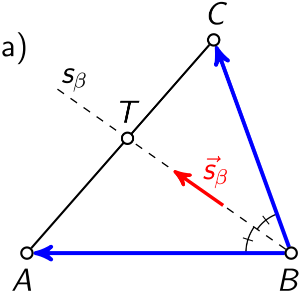
$$\begin{array}{cc|cl}
u & v & & \\ \hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\ \hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\ \hline
5 & -6 & 0 & \leftarrow + \\
1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline
\textcircled{11} & 0 & 6 & /\cdot \frac{-1}{11} \\
1 & 1 & 1 & \leftarrow + \\ \hline
11 & 0 & 6 & \\
0 & 1 & \frac{5}{11} &
\end{array}$$

$$\boxed{v = \frac{5}{11}}$$

$$\boxed{u = \frac{6}{11}}$$

a)



$$\boxed{T = s_\beta \cap AC}$$

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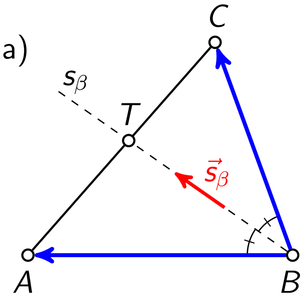
$$\begin{array}{cc|cl}
u & v & & \\ \hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\ \hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\ \hline
5 & -6 & 0 & + \\
1 & \bigcirc\!\!\!\!1 & 1 & /\cdot 6 \\ \hline
\bigcirc\!\!\!\!\!11 & 0 & 6 & /\cdot \frac{-1}{11} \\
1 & 1 & 1 & + \\ \hline
11 & 0 & 6 & \\
0 & 1 & \frac{5}{11} &
\end{array}$$

$$\boxed{v = \frac{5}{11}}$$

$$\boxed{u = \frac{6}{11}}$$



$$\boxed{T = s_\beta \cap AC}$$

$$\begin{aligned} 5u &= 6v \\ 4u &= 4-4v \\ 2+3u &= 5-3v \end{aligned}$$

$$\begin{aligned} 5u-6v &= 0 \\ 4u+4v &= 4 \\ 3u+3v &= 3 \end{aligned}$$

$$\begin{array}{cc|cl}
u & v & & \\ \hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\ \hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\ \hline
5 & -6 & 0 & \leftarrow + \\
1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline
\textcircled{11} & 0 & 6 & /\cdot \frac{-1}{11} \\
1 & 1 & 1 & \leftarrow + \\ \hline
11 & 0 & 6 & \\
0 & 1 & \frac{5}{11} &
\end{array}$$

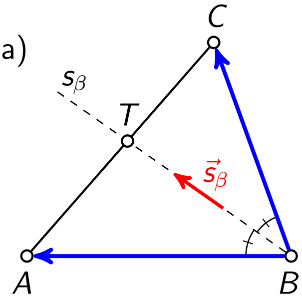
$$AC \ldots \begin{cases} x = 6v \\ y = 4-4v \\ z = 5-3v \end{cases}$$

$$\boxed{v = \frac{5}{11}}$$

$T\Big($

$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2+3u \end{cases}$$

$$\boxed{u = \frac{6}{11}}$$



$$\boxed{T = s_\beta \cap AC}$$

$$\begin{aligned} 5u &= 6v \\ 4u &= 4 - 4v \\ 2 + 3u &= 5 - 3v \end{aligned}$$

$$\begin{aligned} 5u - 6v &= 0 \\ 4u + 4v &= 4 \\ 3u + 3v &= 3 \end{aligned}$$

$$\begin{array}{cc|cl}
u & v & & \\ \hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\ \hline
5 & -6 & 0 & \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\ \hline
5 & -6 & 0 & + \\
1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline
\textcircled{11} & 0 & 6 & /\cdot \frac{-1}{11} \\
1 & 1 & 1 & + \\ \hline
11 & 0 & 6 & \\
0 & 1 & \frac{5}{11} &
\end{array}$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

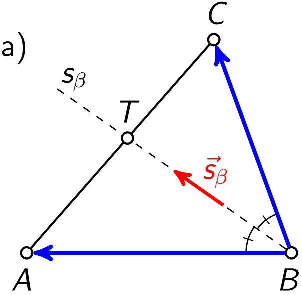
$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\boxed{v = \frac{5}{11}}$$

$$T\left(\frac{30}{11},\right.$$

$$\boxed{u = \frac{6}{11}}$$

a)



$$\boxed{T = s_\beta \cap AC}$$

$$AC \dots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

$$s_\beta \dots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\begin{aligned} 5u &= 6v \\ 4u &= 4 - 4v \\ 2 + 3u &= 5 - 3v \end{aligned}$$

$$\begin{aligned} 5u - 6v &= 0 \\ 4u + 4v &= 4 \\ 3u + 3v &= 3 \end{aligned}$$

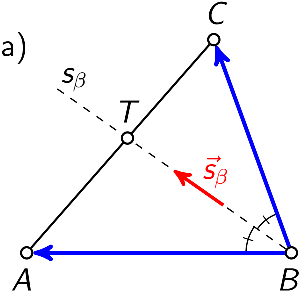
$$\begin{array}{rr|rl}
u & v & & \\ \hline
5 & -6 & 0 & \\
4 & 4 & 4 & /:4 \\
3 & 3 & 3 & /:3 \\ \hline
5 & -6 & 0 & + \\
1 & 1 & 1 & \\
1 & 1 & 1 & \\ \hline
5 & -6 & 0 & + \\
1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline
\textcircled{11} & 0 & 6 & /\cdot \frac{-1}{11} \\
1 & 1 & 1 & + \\ \hline
11 & 0 & 6 & \\
0 & 1 & \frac{5}{11} &
\end{array}$$

$$\boxed{v = \frac{5}{11}}$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\right.$$

$$\boxed{u = \frac{6}{11}}$$

a)



$$\boxed{T = s_\beta \cap AC}$$

$$\begin{aligned} 5u &= 6v\\ 4u &= 4-4v\\ 2+3u &= 5-3v \end{aligned}$$

$$\begin{aligned} 5u-6v &= 0\\ 4u+4v &= 4\\ 3u+3v &= 3 \end{aligned}$$

$$\begin{array}{cc|cl} u & v & & \\ \hline 5 & -6 & 0 & \\ 4 & 4 & 4 & /:4 \\ 3 & 3 & 3 & /:3 \\ \hline 5 & -6 & 0 & \\ 1 & 1 & 1 & \\ 1 & 1 & 1 & \\ \hline 5 & -6 & 0 & + \\ 1 & \enclose{circle}{1} & 1 & /\cdot 6 \\ \hline \enclose{circle}{11} & 0 & 6 & /\cdot \frac{-1}{11} \\ 1 & 1 & 1 & + \\ \hline 11 & 0 & 6 & \\ 0 & 1 & \frac{5}{11} & \end{array}$$

$$AC \dots \begin{cases} x = 6v\\ y = 4-4v\\ z = 5-3v \end{cases}$$

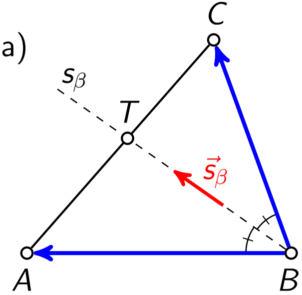
$$\boxed{v = \frac{5}{11}}$$

$$T\left(\frac{30}{11}, \frac{24}{11}, \frac{40}{11}\right)$$

$$s_\beta \dots \begin{cases} x = 5u\\ y = 4u\\ z = 2+3u \end{cases}$$

$$\boxed{u = \frac{6}{11}}$$

a)



$$\boxed{T = s_\beta \cap AC}$$

$$\begin{aligned} 5u &= 6v \\ 4u &= 4 - 4v \\ 2 + 3u &= 5 - 3v \end{aligned}$$

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$$\begin{array}{cc|cl} u & v & & \\ \hline 5 & -6 & 0 & \\ 4 & 4 & 4 & /:4 \\ 3 & 3 & 3 & /:3 \\ \hline 5 & -6 & 0 & \\ 1 & 1 & 1 & \\ 1 & 1 & 1 & \\ \hline 5 & -6 & 0 & + \\ 1 & \textcircled{1} & 1 & /\cdot 6 \\ \hline \textcircled{11} & 0 & 6 & /\cdot \frac{-1}{11} \\ 1 & 1 & 1 & + \\ \hline 11 & 0 & 6 & \\ 0 & 1 & \frac{5}{11} & \end{array}$$

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

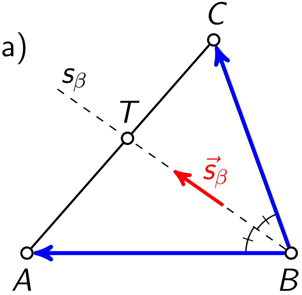
$$\boxed{v = \frac{5}{11}}$$

$$\boxed{T\left(\frac{30}{11}, \frac{24}{11}, \frac{40}{11}\right)}$$

$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\boxed{u = \frac{6}{11}}$$

a)



$$\boxed{T = s_\beta \cap AC}$$

$$5u = 6v$$
$$4u = 4 - 4v$$
$$2 + 3u = 5 - 3v$$

$$5u - 6v = 0$$
$$4u + 4v = 4$$
$$3u + 3v = 3$$

u	v		
5	−6	0	
4	4	4	$/:4$
3	3	3	$/:3$
5	−6	0	
1	1	1	
1	1	1	
5	−6	0	+
1	$\textcircled{1}$	1	$/\cdot 6$
$\textcircled{11}$	0	6	$/\cdot \frac{-1}{11}$
1	1	1	+
11	0	6	
0	1	$\frac{5}{11}$	

$$AC \ldots \begin{cases} x = 6v \\ y = 4 - 4v \\ z = 5 - 3v \end{cases}$$

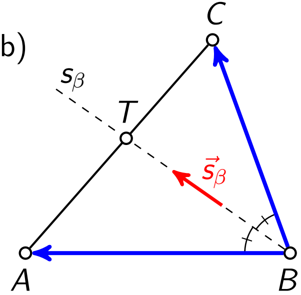
$$\boxed{v = \frac{5}{11}}$$

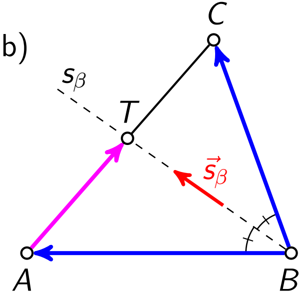
$$\boxed{\boxed{T\left(\frac{30}{11}, \frac{24}{11}, \frac{40}{11}\right)}}$$

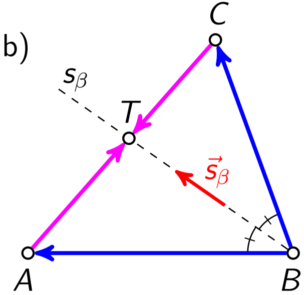
$$s_\beta \ldots \begin{cases} x = 5u \\ y = 4u \\ z = 2 + 3u \end{cases}$$

$$\boxed{u = \frac{6}{11}}$$

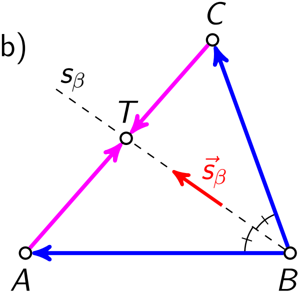
b)




b)
C
s_β
T
$\vec{s}_\beta$
A
B

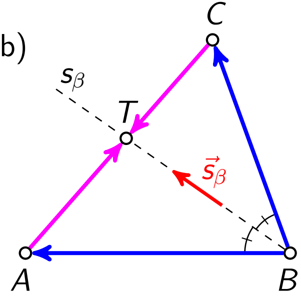

b)
C
s_β
T
$\vec{s}_\beta$
A
B

b)



$$\overrightarrow{AT} = \lambda \overrightarrow{CT}$$

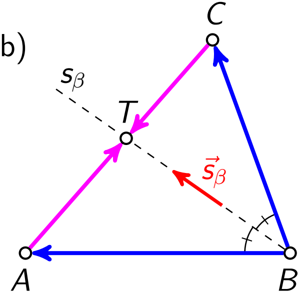
b)



$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$

$$\overrightarrow{AT} = \lambda \overrightarrow{CT}$$

b)

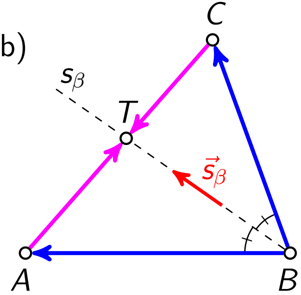


$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

b)



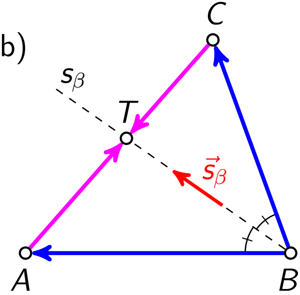
$$A(0,4,5),\ B(0,0,2),\ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

$$\overrightarrow{AT} =$$

b)



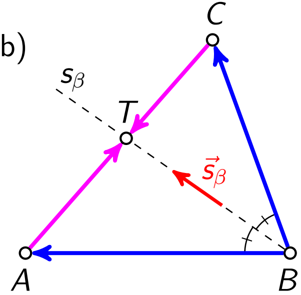
$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT}=\lambda\overrightarrow{CT}$$

$$\overrightarrow{AT}=\left(\frac{30}{11},\,-\frac{20}{11},\,-\frac{15}{11}\right)$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

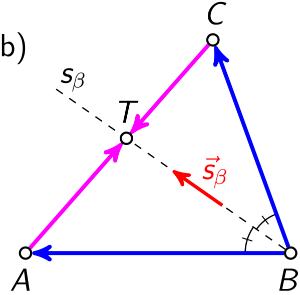
$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

$$\overrightarrow{AT} = \left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

$$\overrightarrow{CT} =$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

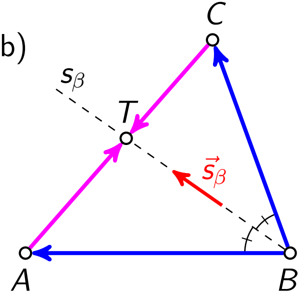
$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

$$\overrightarrow{AT} = \left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11},\ \frac{24}{11},\ \frac{18}{11}\right)$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

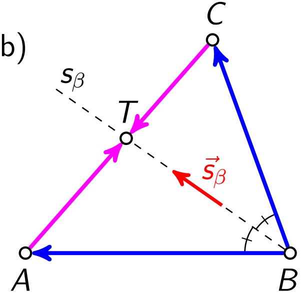
$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT}=\lambda\overrightarrow{CT}$$

$$\overrightarrow{AT}=\left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

$$\overrightarrow{CT}=\left(-\frac{36}{11},\ \frac{24}{11},\ \frac{18}{11}\right)$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

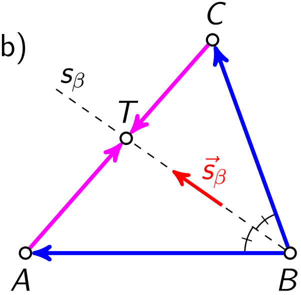
$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

$$\overrightarrow{AT} = \left(\frac{30}{11}, -\frac{20}{11}, -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11}, \frac{24}{11}, \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{}$$

b)



$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

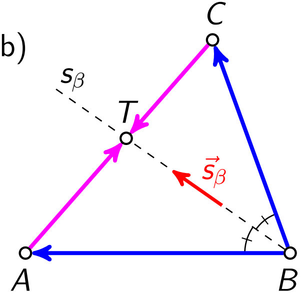
$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

$$\overrightarrow{AT} = \left(\frac{30}{11}, -\frac{20}{11}, -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11}, \frac{24}{11}, \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}}$$

b)



$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

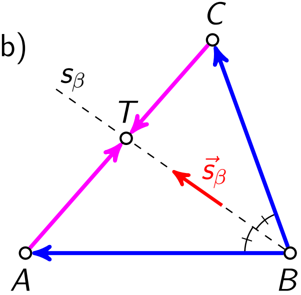
$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

$$\overrightarrow{AT} = \left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11},\ \frac{24}{11},\ \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \underline{\qquad\qquad}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

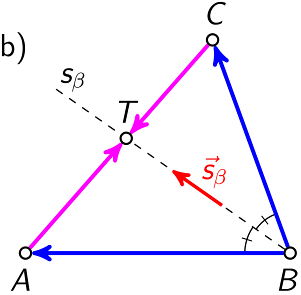
$$\overrightarrow{AT}=\lambda\overrightarrow{CT}$$

$$\overrightarrow{AT}=\left(\frac{30}{11},\,-\frac{20}{11},\,-\frac{15}{11}\right)$$

$$\overrightarrow{CT}=\left(-\frac{36}{11},\,\frac{24}{11},\,\frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}}=\frac{-\frac{20}{11}}{}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

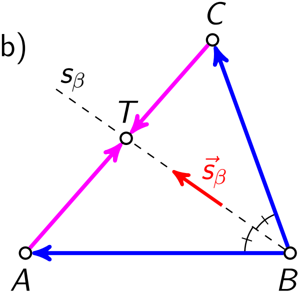
$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

$$\overrightarrow{AT} = \left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11},\ \frac{24}{11},\ \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda \overrightarrow{CT}$$

$$\overrightarrow{AT} = \left(\frac{30}{11}, -\frac{20}{11}, -\frac{15}{11}\right)$$

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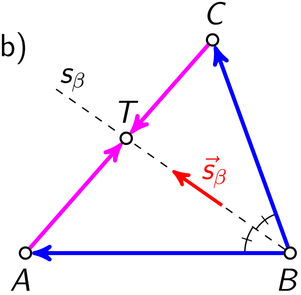
b)



$A(0,4,5),\;\; B(0,0,2),\;\; C(6,0,2)$

$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$

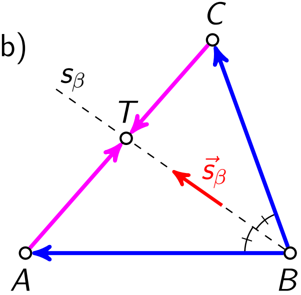
$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

$$\overrightarrow{AT} = \left(\frac{30}{11}, -\frac{20}{11}, -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11}, \frac{24}{11}, \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}} = \frac{-\frac{15}{11}}{}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

$$\overrightarrow{AT} = \left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

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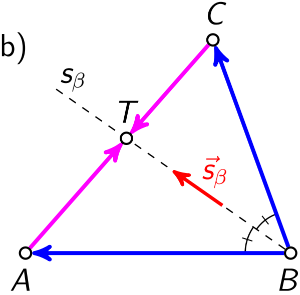
$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}} = \frac{-\frac{15}{11}}{\frac{18}{11}}$$

b)



$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT}=\lambda\overrightarrow{CT}$$

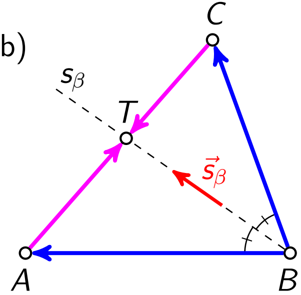
$$\overrightarrow{AT}=\left(\frac{30}{11},-\frac{20}{11},-\frac{15}{11}\right)$$

$$\overrightarrow{CT}=\left(-\frac{36}{11},\ \frac{24}{11},\ \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}}=\frac{-\frac{20}{11}}{\frac{24}{11}}=\frac{-\frac{15}{11}}{\frac{18}{11}}$$

$$-\frac{5}{6}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

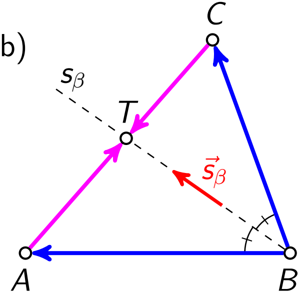
$$\overrightarrow{AT} = \left(\frac{30}{11},\, -\frac{20}{11},\, -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11},\, \frac{24}{11},\, \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}} = \frac{-\frac{15}{11}}{\frac{18}{11}}$$

$$-\frac{5}{6} = -\frac{5}{6}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

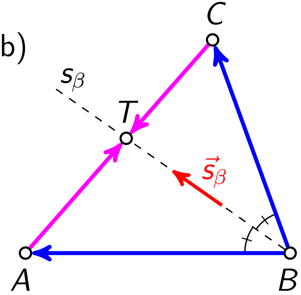
$$\overrightarrow{AT} = \left(\frac{30}{11}, -\frac{20}{11}, -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11}, \frac{24}{11}, \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}} = \frac{-\frac{15}{11}}{\frac{18}{11}}$$

$$-\frac{5}{6} = -\frac{5}{6} = -\frac{5}{6}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT}=\lambda\overrightarrow{CT}$$

$$\overrightarrow{AT}=\left(\frac{30}{11},-\frac{20}{11},-\frac{15}{11}\right)$$

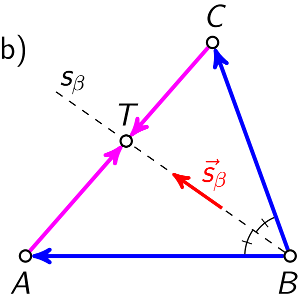
$$\overrightarrow{CT}=\left(-\frac{36}{11},\ \frac{24}{11},\ \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}}=\frac{-\frac{20}{11}}{\frac{24}{11}}=\frac{-\frac{15}{11}}{\frac{18}{11}}$$

$$-\frac{5}{6}=-\frac{5}{6}=-\frac{5}{6}$$

$$\lambda=-\frac{5}{6}\ \leftsquigarrow$$

b)



$A(0,4,5),\ B(0,0,2),\ C(6,0,2)$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT}$$

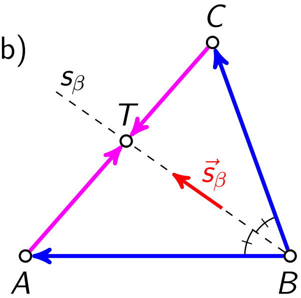
$$\overrightarrow{AT} = \left(\frac{30}{11}, -\frac{20}{11}, -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11}, \frac{24}{11}, \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}} = \frac{-\frac{15}{11}}{\frac{18}{11}}$$

$$\boxed{\lambda = -\frac{5}{6}} \leftarrow -\frac{5}{6} = -\frac{5}{6} = -\frac{5}{6}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT} \rightsquigarrow \overrightarrow{AT} = -\frac{5}{6}\,\overrightarrow{CT}$$

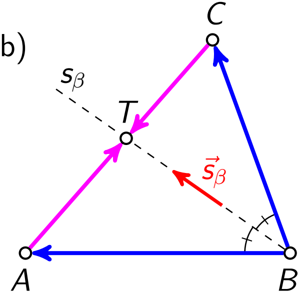
$$\overrightarrow{AT} = \left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11},\ \frac{24}{11},\ \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}} = \frac{-\frac{15}{11}}{\frac{18}{11}}$$

$$\boxed{\lambda = -\frac{5}{6}} \leftsquigarrow -\frac{5}{6} = -\frac{5}{6} = -\frac{5}{6}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT} \rightsquigarrow \overrightarrow{AT} = -\frac{5}{6}\,\overrightarrow{CT} \rightsquigarrow |AT| : |CT| = 5 : 6$$

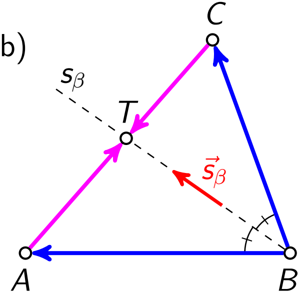
$$\overrightarrow{AT} = \left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11},\ \frac{24}{11},\ \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}} = \frac{-\frac{15}{11}}{\frac{18}{11}}$$

$$\boxed{\lambda = -\frac{5}{6}} \leftsquigarrow -\frac{5}{6} = -\frac{5}{6} = -\frac{5}{6}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

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$$\overrightarrow{AT} = \lambda \overrightarrow{CT} \rightsquigarrow \overrightarrow{AT} = -\frac{5}{6}\,\overrightarrow{CT} \rightsquigarrow \boxed{\boxed{|AT| : |CT| = 5 : 6}}$$

$$\overrightarrow{AT} = \left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

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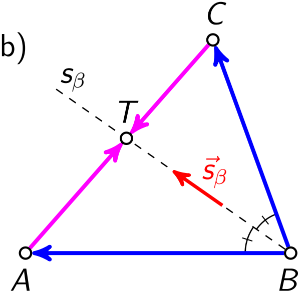
$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}} = \frac{-\frac{15}{11}}{\frac{18}{11}}$$

$$\boxed{\lambda = -\frac{5}{6}} \leftsquigarrow -\frac{5}{6} = -\frac{5}{6} = -\frac{5}{6}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\left|\overrightarrow{BA}\right| = 5$$

$$\left|\overrightarrow{BC}\right| = 6$$

$$\overrightarrow{AT} = \lambda\overrightarrow{CT} \rightsquigarrow \overrightarrow{AT} = -\frac{5}{6}\,\overrightarrow{CT} \rightsquigarrow \boxed{\boxed{|AT| : |CT| = 5 : 6}}$$

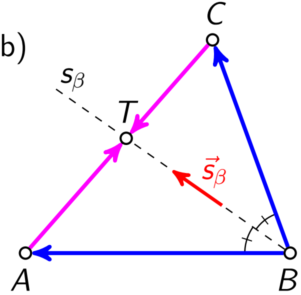
$$\overrightarrow{AT} = \left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11},\ \frac{24}{11},\ \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}} = \frac{-\frac{15}{11}}{\frac{18}{11}}$$

$$\boxed{\lambda = -\frac{5}{6}} \leftsquigarrow -\frac{5}{6} = -\frac{5}{6} = -\frac{5}{6}$$

b)



$$A(0,4,5),\ \ B(0,0,2),\ \ C(6,0,2)$$

$$T\left(\frac{30}{11},\ \frac{24}{11},\ \frac{40}{11}\right)$$

$$\left|\overrightarrow{BA}\right| = 5$$

$$\left|\overrightarrow{BC}\right| = 6$$

Simetrala unutarnjeg kuta trokuta dijeli tom kutu nasuprotnu stranicu u omjeru preostale dvije stranice.

$$\overrightarrow{AT} = \lambda\overrightarrow{CT} \rightsquigarrow \overrightarrow{AT} = -\frac{5}{6}\,\overrightarrow{CT} \rightsquigarrow \boxed{\boxed{|AT| : |CT| = 5 : 6}}$$

$$\overrightarrow{AT} = \left(\frac{30}{11},\ -\frac{20}{11},\ -\frac{15}{11}\right)$$

$$\overrightarrow{CT} = \left(-\frac{36}{11},\ \frac{24}{11},\ \frac{18}{11}\right)$$

$$\frac{\frac{30}{11}}{-\frac{36}{11}} = \frac{-\frac{20}{11}}{\frac{24}{11}} = \frac{-\frac{15}{11}}{\frac{18}{11}}$$

$$\boxed{\lambda = -\frac{5}{6}} \leftsquigarrow -\frac{5}{6} = -\frac{5}{6} = -\frac{5}{6}$$

treći zadatak

Zadatak 3

Zadani su pravci

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \quad i \quad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}.$$

a) *Pokažite da su p_1 i p_2 mimosmjerni pravci.*

b) *Odredite zajedničku normalu pravaca p_1 i p_2.*

c) *Izračunajte udaljenost pravaca p_1 i p_2.*

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) Prvi način

Rješenje $p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1}$ $p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$

a) Prvi način

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

Rješenje $p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1}$ $p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$

a) **Prvi način**

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$T_1(0, 1, 2)$

Rješenje $p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1}$ $p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$

a) Prvi način

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$T_1(0,1,2)$ $\vec{s}_1 = (-2,2,1)$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$T_1(0,1,2)$ $\qquad \vec{s}_1 = (-2,2,1)$

$T_2(1,1,3)$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$T_1(0, 1, 2) \qquad \vec{s}_1 = (-2, 2, 1)$

$T_2(1, 1, 3) \qquad \vec{s}_2 = (2, 0, -2)$

Rješenje $p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1}$ $p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (-2, 2, 1)$$

$$T_2(1, 1, 3) \qquad \vec{s}_2 = (2, 0, -2)$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) Prvi način

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (-2, 2, 1)$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (2, 0, -2)$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

Rješenje $p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1}$ $p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$

a) Prvi način

$$\overset{x_1\ y_1\ z_1}{T_1(0,1,2)} \qquad \vec{s}_1 = \overset{\alpha_1\ \ \beta_1\ \gamma_1}{(-2,2,1)}$$

$$\overset{x_2\ y_2\ z_2}{T_2(1,1,3)} \qquad \vec{s}_2 = (2,0,-2)$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & & \\ & & \\ & & \end{vmatrix}$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & 1-1 & \\ & & \\ & & \end{vmatrix}$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & 1-1 & 3-2 \\ & & \\ & & \end{vmatrix}$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & 1-1 & 3-2 \\ -2 & 2 & 1 \\ & & \end{vmatrix}$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & 1-1 & 3-2 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix}$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

$$\begin{vmatrix} 1-0 & 1-1 & 3-2 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = \begin{vmatrix} \; & \; & \; \\ \; & \; & \; \\ \; & \; & \; \end{vmatrix}$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) Prvi način

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & 1-1 & 3-2 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = \begin{vmatrix} 1 & 0 & 1 \\ & & \\ & & \end{vmatrix}$$

Rješenje $p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1}$ $p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$

a) Prvi način

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & 1-1 & 3-2 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = \begin{vmatrix} 1 & 0 & 1 \\ -2 & 2 & 1 \\ & & \end{vmatrix}$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & 1-1 & 3-2 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = \begin{vmatrix} 1 & 0 & 1 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix}$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$\overset{x_1\ y_1\ z_1}{T_1(0,1,2)} \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$\overset{x_2\ y_2\ z_2}{T_2(1,1,3)} \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & 1-1 & 3-2 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = \begin{vmatrix} 1 & 0 & 1 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = -8$$

Rješenje $p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1}$ $p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$

a) Prvi način

$$\overset{x_1\ y_1\ z_1}{T_1(0,1,2)} \qquad \vec{s}_1 = \overset{\alpha_1\ \beta_1\ \gamma_1}{(-2,2,1)}$$

$$\overset{x_2\ y_2\ z_2}{T_2(1,1,3)} \qquad \vec{s}_2 = \overset{\alpha_2\ \beta_2\ \gamma_2}{(2,0,-2)}$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & 1-1 & 3-2 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = \begin{vmatrix} 1 & 0 & 1 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = -8 \neq 0$$

Rješenje

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Prvi način**

$$T_1(\overset{x_1}{0}, \overset{y_1}{1}, \overset{z_1}{2}) \qquad \vec{s}_1 = (\overset{\alpha_1}{-2}, \overset{\beta_1}{2}, \overset{\gamma_1}{1})$$

$$T_2(\overset{x_2}{1}, \overset{y_2}{1}, \overset{z_2}{3}) \qquad \vec{s}_2 = (\overset{\alpha_2}{2}, \overset{\beta_2}{0}, \overset{\gamma_2}{-2})$$

$$\alpha_1 : \alpha_2 \neq \beta_1 : \beta_2 \implies p_1 \nparallel p_2$$

Uvjet komplanarnosti

$$\begin{vmatrix} x_2 - x_1 & y_2 - y_1 & z_2 - z_1 \\ \alpha_1 & \beta_1 & \gamma_1 \\ \alpha_2 & \beta_2 & \gamma_2 \end{vmatrix} = 0$$

$$\begin{vmatrix} 1-0 & 1-1 & 3-2 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = \begin{vmatrix} 1 & 0 & 1 \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = -8 \neq 0$$

p_1 i p_2 su mimosmjerni pravci

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) Drugi način

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) Drugi način

$$p_1 \ldots \left\{ \vphantom{\begin{array}{c} x \\ y \\ z \end{array}} \right.$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = \\ y = \\ z = \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = \\ y = 1 \\ z = 2 \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) Drugi način

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 \\ z = 2 \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_1 \dots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \dots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \dots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \dots \begin{cases} \\ \\ \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = \\ y = \\ z = \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 \\ y = 1 \\ z = 3 \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$\boxed{\frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} = u}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$\boxed{\frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} = u}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\boxed{\frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2} = v}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$\boxed{p_1 \cap p_2}$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$\boxed{p_1 \cap p_2}$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$-2u = 1 + 2v$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$p_1 \dots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \dots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$\boxed{p_1 \cap p_2}$$

$$p_1 \dots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$-2u = 1 + 2v$$

$$1 + 2u = 1$$

$$p_2 \dots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$\boxed{p_1 \cap p_2}$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$-2u = 1 + 2v$$
$$1 + 2u = 1$$
$$2 + u = 3 - 2v$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) Drugi način

$$\boxed{p_1 \cap p_2}$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$\begin{aligned} -2u &= 1 + 2v \\ 1 + 2u &= 1 \\ 2 + u &= 3 - 2v \end{aligned}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$\boxed{p_1 \cap p_2}$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$\begin{aligned} -2u &= 1 + 2v \\ 1 + 2u &= 1 \\ 2 + u &= 3 - 2v \\ \hline 2u + 2v &= -1 \end{aligned}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$\boxed{p_1 \cap p_2}$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\begin{aligned} -2u &= 1 + 2v \\ 1 + 2u &= 1 \\ 2 + u &= 3 - 2v \\ \hline 2u + 2v &= -1 \\ 2u &= 0 \end{aligned}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$\boxed{p_1 \cap p_2}$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\begin{aligned} -2u &= 1 + 2v \\ 1 + 2u &= 1 \\ 2 + u &= 3 - 2v \\ \hline 2u + 2v &= -1 \\ 2u &= 0 \\ u + 2v &= 1 \end{aligned}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

u	v	

$p_1 \cap p_2$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\begin{array}{c} -2u = 1 + 2v \\ 1 + 2u = 1 \\ 2 + u = 3 - 2v \\ \hline 2u + 2v = -1 \\ 2u = 0 \\ u + 2v = 1 \end{array}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$p_1 \cap p_2$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\begin{aligned} -2u &= 1 + 2v \\ 1 + 2u &= 1 \\ 2 + u &= 3 - 2v \\ \hline 2u + 2v &= -1 \\ 2u &= 0 \\ u + 2v &= 1 \end{aligned}$$

u	v	
2	2	-1

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$\boxed{p_1 \cap p_2}$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\begin{aligned} -2u &= 1 + 2v \\ 1 + 2u &= 1 \\ 2 + u &= 3 - 2v \\ \hline 2u + 2v &= -1 \\ 2u &= 0 \\ u + 2v &= 1 \end{aligned}$$

u	v	
2	2	-1
2	0	0

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\boxed{p_1 \cap p_2}$$

$$\begin{array}{r} -2u = 1 + 2v \\ 1 + 2u = 1 \\ 2 + u = 3 - 2v \\ \hline 2u + 2v = -1 \\ 2u = 0 \\ u + 2v = 1 \end{array}$$

u	v	
2	2	-1
2	0	0
1	2	1

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) $\boxed{\text{Drugi način}}$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\boxed{p_1 \cap p_2}$$

$$\begin{array}{r} -2u = 1 + 2v \\ 1 + 2u = 1 \\ 2 + u = 3 - 2v \\ \hline 2u + 2v = -1 \\ 2u = 0 \\ u + 2v = 1 \end{array}$$

u	v	
2	2	-1
2	0	0
1	2	1

$$p_1 \dots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \dots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \dots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \dots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\boxed{p_1 \cap p_2}$$

$$\begin{array}{r} -2u = 1 + 2v \\ 1 + 2u = 1 \\ 2 + u = 3 - 2v \\ \hline 2u + 2v = -1 \\ 2u = 0 \\ u + 2v = 1 \end{array}$$

$$\begin{array}{cc|cl} u & v & & \\ \hline 2 & 2 & -1 & \\ 2 & 0 & 0 & /:2 \\ 1 & 2 & 1 & \\ \hline \end{array}$$

$$p_1 \ldots \frac{x}{-2}=\frac{y-1}{2}=\frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2}=\frac{y-1}{0}=\frac{z-3}{-2}$$

a) $\boxed{\text{Drugi način}}$

$$p_1 \ldots \begin{cases} x=-2u \\ y=1+2u \\ z=2+u \end{cases}$$

$$p_2 \ldots \begin{cases} x=1+2v \\ y=1 \\ z=3-2v \end{cases}$$

$$\boxed{p_1 \cap p_2}$$

$$\begin{array}{r} -2u=1+2v \\ 1+2u=1 \\ 2+u=3-2v \\ \hline 2u+2v=-1 \\ 2u=0 \\ u+2v=1 \end{array}$$

$$\begin{array}{cc|cl} u & v & & \\ \hline 2 & 2 & -1 & \\ 2 & 0 & 0 & /:2 \\ 1 & 2 & 1 & \\ \hline 2 & 2 & -1 & \end{array}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$\boxed{p_1 \cap p_2}$

$$\begin{array}{r} -2u = 1 + 2v \\ 1 + 2u = 1 \\ 2 + u = 3 - 2v \\ \hline 2u + 2v = -1 \\ 2u = 0 \\ u + 2v = 1 \end{array}$$

u	v		
2	2	-1	
2	0	0	/ : 2
1	2	1	
2	2	-1	
1	0	0	

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$\boxed{p_1 \cap p_2}$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\begin{array}{r} -2u = 1 + 2v \\ 1 + 2u = 1 \\ 2 + u = 3 - 2v \\ \hline 2u + 2v = -1 \\ 2u = 0 \\ u + 2v = 1 \end{array}$$

$$\begin{array}{cc|c} u & v & \\ \hline 2 & 2 & -1 \\ 2 & 0 & 0 \\ 1 & 2 & 1 \\ \hline 2 & 2 & -1 \\ 1 & 0 & 0 \\ 1 & 2 & 1 \end{array}$$

$/ : 2$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) $\boxed{\text{Drugi način}}$

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$\boxed{p_1 \cap p_2}$

$$\begin{aligned} -2u &= 1 + 2v \\ 1 + 2u &= 1 \\ 2 + u &= 3 - 2v \end{aligned}$$

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u	v		
2	2	-1	
2	0	0	$/ : 2$
1	2	1	
2	2	-1	
1	0	0	
1	2	1	

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a) Drugi način

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$$\begin{array}{cc|cl} u & v & & \\ \hline 2 & 2 & -1 & \\ 2 & 0 & 0 & /:2 \\ 1 & 2 & 1 & \\ \hline 2 & 2 & -1 & \\ \textcircled{1} & 0 & 0 & \\ 1 & 2 & 1 & \\ \hline \end{array}$$

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$$\begin{array}{cc|cl}
u & v & & \\
\hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\
\hline
2 & 2 & -1 & \leftarrow + \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & \\
\hline
\end{array}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

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$$\begin{array}{cc|cl} u & v & & \\ \hline 2 & 2 & -1 & \\ 2 & 0 & 0 & /:2 \\ 1 & 2 & 1 & \\ \hline 2 & 2 & -1 & \leftarrow + \\ \textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\ 1 & 2 & 1 & \leftarrow + \\ \hline & & & \end{array}$$

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u & v & & \\ \hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\ \hline
2 & 2 & -1 & \xleftarrow{+} \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & \xleftarrow{+} \\ \hline
0 & & & \\
1 & 0 & 0 &
\end{array}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

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u & v & & \\
\hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\
\hline
2 & 2 & -1 & \xleftarrow{+} \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
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\hline
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1 & 0 & 0 &
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2u + 2v = -1 \\
2u = 0 \\
u + 2v = 1
\end{array}$$

$$\begin{array}{cc|cl}
u & v & & \\ \hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\ \hline
2 & 2 & -1 & \xleftarrow{+} \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & \xleftarrow[+]{} \\ \hline
0 & 2 & -1 & \\
1 & 0 & 0 & \\
0 & 2 & 1 & \\ \hline
\end{array}$$

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$$\begin{array}{cc|cl}
u & v & & \\ \hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\ \hline
2 & 2 & -1 & \leftarrow + \\
\enclose{circle}{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & \leftarrow + \\ \hline
0 & \enclose{circle}{2} & -1 & \\
1 & 0 & 0 & \\
0 & 2 & 1 & \\ \hline
\end{array}$$

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u & v & & \\ \hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\ \hline
2 & 2 & -1 & \xleftarrow{+} \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & \xleftarrow[+]{} \\ \hline
0 & \textcircled{2} & -1 & /\cdot(-1) \\
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\end{array}$$

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$$\begin{array}{r}
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1 + 2u = 1 \\
2 + u = 3 - 2v \\ \hline
2u + 2v = -1 \\
2u = 0 \\
u + 2v = 1
\end{array}$$

$$\begin{array}{cc|cl}
u & v & & \\ \hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\ \hline
2 & 2 & -1 & \leftarrow + \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & \leftarrow + \\ \hline
0 & \textcircled{2} & -1 & /\cdot(-1) \\
1 & 0 & 0 & \\
0 & 2 & 1 & \leftarrow + \\ \hline
\end{array}$$

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u & v & & \\ \hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\ \hline
2 & 2 & -1 & \leftarrow + \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & \leftarrow + \\ \hline
0 & \textcircled{2} & -1 & /\cdot(-1) \\
1 & 0 & 0 & \\
0 & 2 & 1 & \leftarrow + \\ \hline
0 & 2 & -1 &
\end{array}$$

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u & v & & \\
\hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\
\hline
2 & 2 & -1 & + \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & + \\
\hline
0 & \textcircled{2} & -1 & /\cdot(-1) \\
1 & 0 & 0 & \\
0 & 2 & 1 & + \\
\hline
0 & 2 & -1 & \\
1 & 0 & 0 &
\end{array}$$

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u	v		
2	2	-1	
2	0	0	$/ : 2$
1	2	1	
2	2	-1	$\leftarrow +$
$\textcircled{1}$	0	0	$/\cdot(-2)$ $/\cdot(-1)$
1	2	1	$\leftarrow +$
0	$\textcircled{2}$	-1	$/\cdot(-1)$
1	0	0	
0	2	1	$\leftarrow +$
0	2	-1	
1	0	0	
0	0		

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

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$$p_1 \dots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \dots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) **Drugi način**

$$\boxed{p_1 \cap p_2}$$

$$p_1 \dots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases}$$

$$p_2 \dots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

$$\begin{array}{r} -2u = 1 + 2v \\ 1 + 2u = 1 \\ 2 + u = 3 - 2v \\ \hline 2u + 2v = -1 \\ 2u = 0 \\ u + 2v = 1 \end{array}$$

$$\begin{array}{cc|cl}
u & v & & \\
\hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\
\hline
2 & 2 & -1 & \leftarrow + \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & \leftarrow + \\
\hline
0 & \textcircled{2} & -1 & /\cdot(-1) \\
1 & 0 & 0 & \\
0 & 2 & 1 & \leftarrow + \\
\hline
0 & 2 & -1 & \\
1 & 0 & 0 & \\
\boxed{0} & \boxed{0} & \boxed{2} &
\end{array}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

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$$\begin{array}{cc|cl} u & v & & \\ \hline 2 & 2 & -1 & \\ 2 & 0 & 0 & /:2 \\ 1 & 2 & 1 & \\ \hline 2 & 2 & -1 & \leftarrow + \\ \textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\ 1 & 2 & 1 & \leftarrow + \\ \hline 0 & \textcircled{2} & -1 & /\cdot(-1) \\ 1 & 0 & 0 & \\ 0 & 2 & 1 & \leftarrow + \\ \hline 0 & 2 & -1 & \\ 1 & 0 & 0 & \\ 0 & 0 & 2 & \end{array}$$

$$\boxed{0 = 2} \leftsquigarrow \boxed{0 \quad 0 \quad 2}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

a) $\boxed{\text{Drugi način}}$

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$$\begin{aligned} -2u &= 1 + 2v \\ 1 + 2u &= 1 \\ 2 + u &= 3 - 2v \end{aligned}$$

$$\begin{aligned} 2u + 2v &= -1 \\ 2u &= 0 \\ u + 2v &= 1 \end{aligned}$$

$$\begin{array}{cc|cl}
u & v & & \\
\hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\
\hline
2 & 2 & -1 & + \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & + \\
\hline
0 & \textcircled{2} & -1 & /\cdot(-1) \\
1 & 0 & 0 & \\
0 & 2 & 1 & + \\
\hline
0 & 2 & -1 & \\
1 & 0 & 0 & \\
\boxed{0} & \boxed{0} & \boxed{2} &
\end{array}$$

sustav nema rješenja

$$\boxed{0 = 2} \leftsquigarrow \boxed{0 \quad 0 \quad 2}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

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$$\begin{array}{r}
-2u = 1 + 2v \\
1 + 2u = 1 \\
2 + u = 3 - 2v \\ \hline
2u + 2v = -1 \\
2u = 0 \\
u + 2v = 1
\end{array}$$

$$\begin{array}{cc|cl}
u & v & & \\ \hline
2 & 2 & -1 & \\
2 & 0 & 0 & /:2 \\
1 & 2 & 1 & \\ \hline
2 & 2 & -1 & \leftarrow + \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & \leftarrow + \\ \hline
0 & \textcircled{2} & -1 & /\cdot(-1) \\
1 & 0 & 0 & \\
0 & 2 & 1 & \leftarrow + \\ \hline
0 & 2 & -1 & \\
1 & 0 & 0 & \\
0 & 0 & 2 &
\end{array}$$

$$p_1 \cap p_2 = \emptyset$$

sustav nema rješenja

$$\boxed{0 = 2} \leftsquigarrow \boxed{0 \quad 0 \mid 2}$$

$$p_1 \dots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \dots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

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$$\begin{array}{cc|cl} u & v & & \\ \hline 2 & 2 & -1 & \\ 2 & 0 & 0 & /:2 \\ 1 & 2 & 1 & \\ \hline 2 & 2 & -1 & \leftarrow + \\ \enclose{circle}{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\ 1 & 2 & 1 & \leftarrow + \\ \hline 0 & \enclose{circle}{2} & -1 & /\cdot(-1) \\ 1 & 0 & 0 & \\ 0 & 2 & 1 & \leftarrow + \\ \hline 0 & 2 & -1 & \\ 1 & 0 & 0 & \\ 0 & 0 & 2 & \end{array}$$

$$\boxed{0 = 2} \leftsquigarrow \boxed{0 \quad 0 \mid 2}$$

sustav nema rješenja

$$p_1 \cap p_2 = \emptyset$$

$$p_1 \nparallel p_2$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

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$$\begin{array}{cc|cl}
u & v & & \\
\hline
2 & 2 & -1 & \\
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2 & 2 & -1 & \leftarrow + \\
\textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\
1 & 2 & 1 & \leftarrow + \\
\hline
0 & \textcircled{2} & -1 & /\cdot(-1) \\
1 & 0 & 0 & \\
0 & 2 & 1 & \leftarrow + \\
\hline
0 & 2 & -1 & \\
1 & 0 & 0 & \\
\boxed{0} & \boxed{0} & \boxed{2} &
\end{array}$$

$$\boxed{0 = 2} \leftarrow$$

sustav nema rješenja

$$\left.\begin{array}{c} p_1 \cap p_2 = \emptyset \\ p_1 \nparallel p_2 \end{array}\right\}$$

$$p_1 \ldots \frac{x}{-2} = \frac{y-1}{2} = \frac{z-2}{1} \qquad p_2 \ldots \frac{x-1}{2} = \frac{y-1}{0} = \frac{z-3}{-2}$$

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$$\begin{array}{cc|cl} u & v & & \\ \hline 2 & 2 & -1 & \\ 2 & 0 & 0 & /:2 \\ 1 & 2 & 1 & \\ \hline 2 & 2 & -1 & + \\ \textcircled{1} & 0 & 0 & /\cdot(-2)\ /\cdot(-1) \\ 1 & 2 & 1 & + \\ \hline 0 & \textcircled{2} & -1 & /\cdot(-1) \\ 1 & 0 & 0 & \\ 0 & 2 & 1 & + \\ \hline 0 & 2 & -1 & \\ 1 & 0 & 0 & \\ 0 & 0 & 2 & \end{array}$$

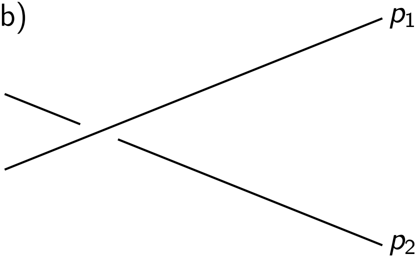
sustav nema rješenja

$$\boxed{0 = 2} \leftsquigarrow \boxed{0 \quad 0 \quad 2}$$

$$\left.\begin{array}{c} p_1 \cap p_2 = \emptyset \\ p_1 \nparallel p_2 \end{array}\right\} \Rightarrow$$

p_1 i p_2 su mimosmjerni pravci

b)



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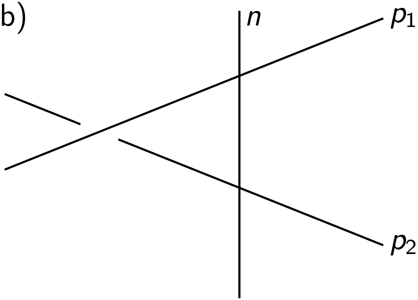
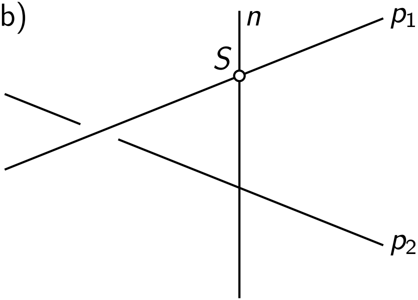
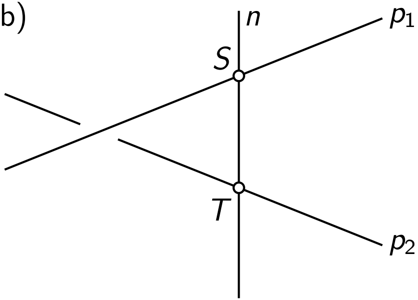


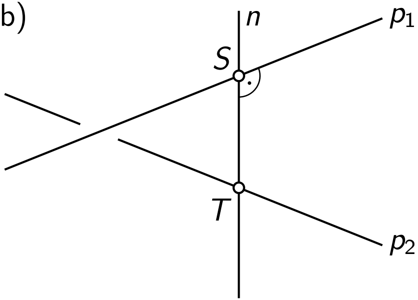
b)



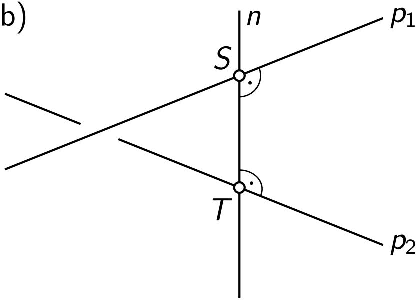
b)



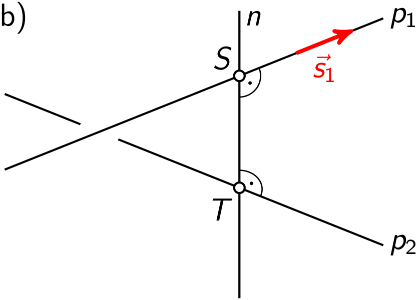
b)



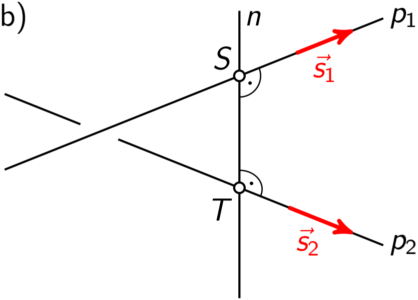
b)



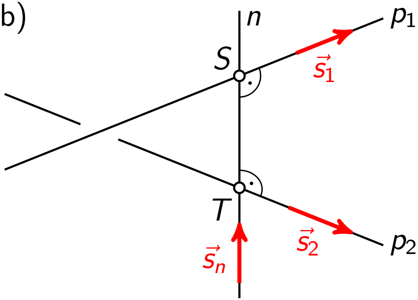
b)



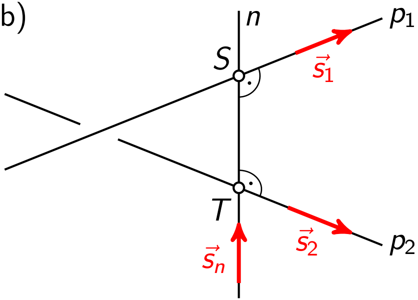
b)



b)

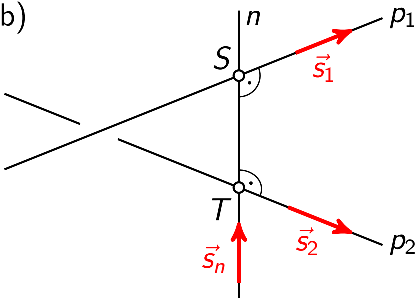


b)



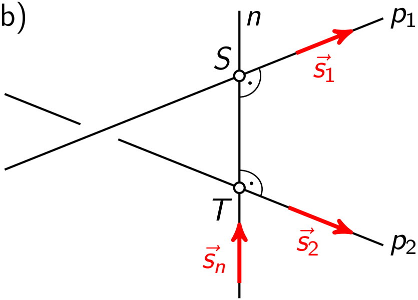
$n \perp p_1$

b)



$n \perp p_1 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_1$

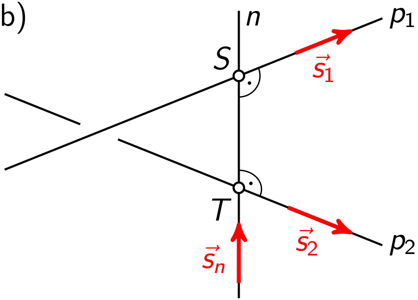
b)



$n \perp p_1 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_1$

$n \perp p_2$

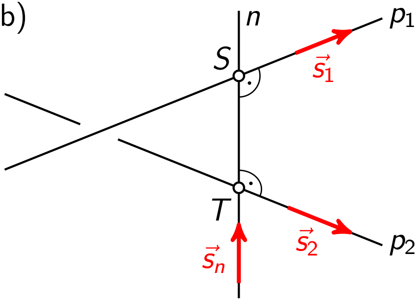
b)



$n \perp p_1 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_1$

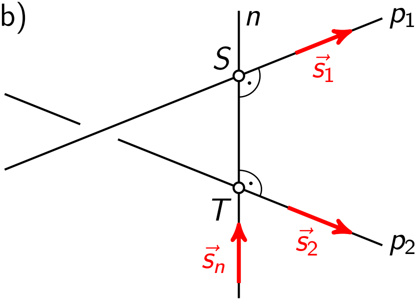
$n \perp p_2 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_2$

b)



$$\left.\begin{array}{l} n \perp p_1 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_1 \\ n \perp p_2 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_2 \end{array}\right\} \Rightarrow \vec{s}_n = \vec{s}_1 \times \vec{s}_2$$

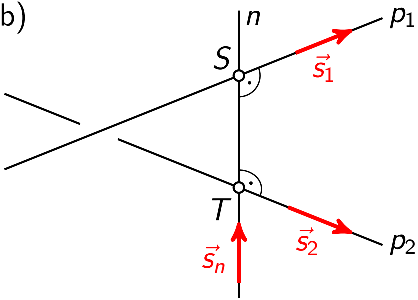
b)



$$\left.\begin{array}{l} n \perp p_1 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_1 \\ n \perp p_2 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_2 \end{array}\right\} \Rightarrow \vec{s}_n = \vec{s}_1 \times \vec{s}_2$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases} \qquad p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

b)

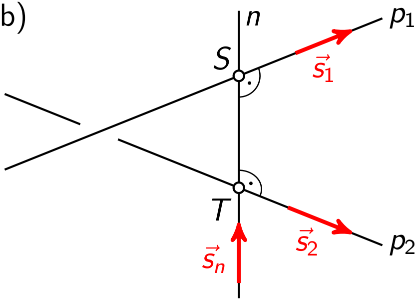


$$\left.\begin{array}{l} n \perp p_1 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_1 \\ n \perp p_2 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_2 \end{array}\right\} \Rightarrow \vec{s}_n = \vec{s}_1 \times \vec{s}_2$$

$$\vec{s}_1 = (-2, 2, 1)$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases} \qquad p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

b)



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$$\boxed{\begin{array}{l} \vec{s}_1 = (-2, 2, 1) \\ \vec{s}_2 = (2, 0, -2) \end{array}}$$

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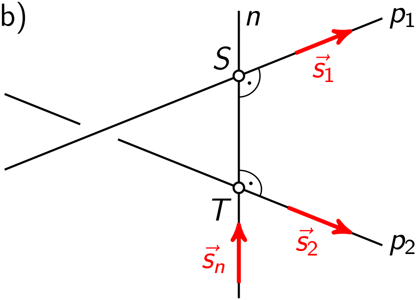


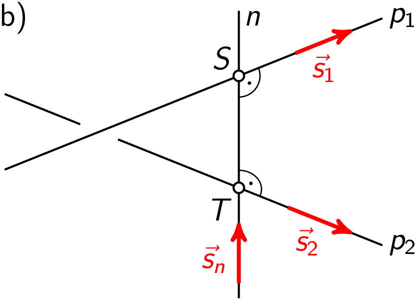
$$\left.\begin{array}{l} n \perp p_1 \ \Rightarrow \ \vec{s}_n \perp \vec{s}_1 \\ n \perp p_2 \ \Rightarrow \ \vec{s}_n \perp \vec{s}_2 \end{array}\right\} \Rightarrow \vec{s}_n = \vec{s}_1 \times \vec{s}_2$$

$$\boxed{\begin{array}{l} \vec{s}_1 = (-2, 2, 1) \\ \vec{s}_2 = (2, 0, -2) \end{array}}$$

$$\vec{s}_n = \left| \begin{array}{ccc} \quad & \quad & \quad \\ & & \\ & & \end{array} \right|$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases} \qquad p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

b)



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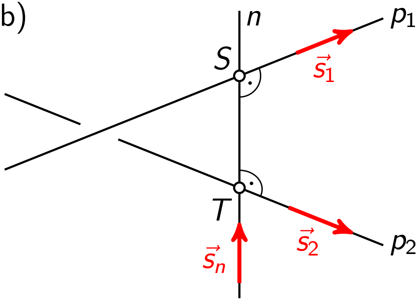
$$\boxed{\begin{array}{l} \vec{s}_1 = (-2, 2, 1) \\ \vec{s}_2 = (2, 0, -2) \end{array}}$$

$$\vec{s}_n = \begin{vmatrix} \vec{i} & \vec{j} & \vec{k} \\ & & \\ & & \end{vmatrix}$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases} \qquad p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

b)



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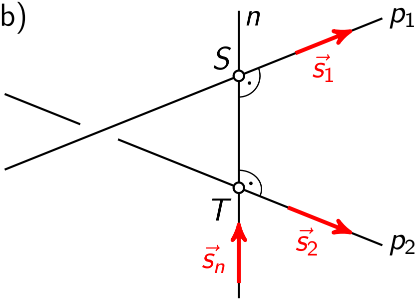

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$$\vec{s}_n = \begin{vmatrix} \vec{i} & \vec{j} & \vec{k} \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix}$$

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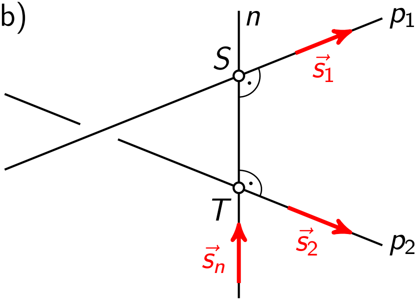

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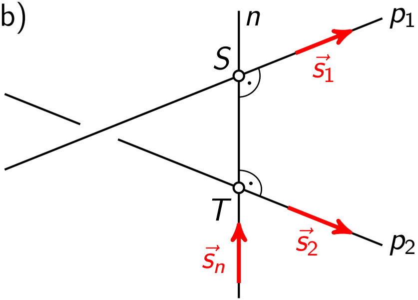
$$\vec{s}_n = \begin{vmatrix} \vec{i} & \vec{j} & \vec{k} \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = ($$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases} \qquad p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

b)



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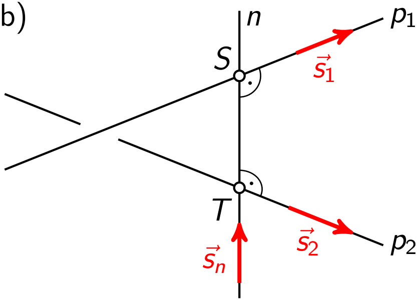
$$\vec{s}_n = \begin{vmatrix} \vec{i} & \vec{j} & \vec{k} \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = (-4,$$

$$p_1 \ldots \begin{cases} x = -2u \\ y = 1 + 2u \\ z = 2 + u \end{cases} \qquad p_2 \ldots \begin{cases} x = 1 + 2v \\ y = 1 \\ z = 3 - 2v \end{cases}$$

b)



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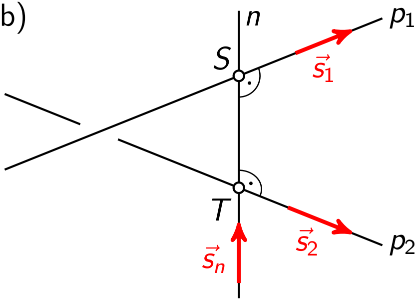

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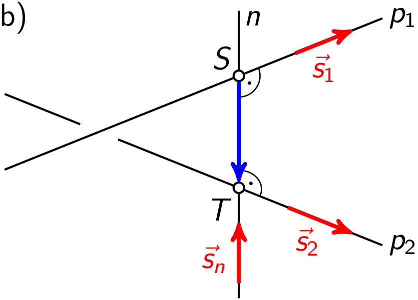

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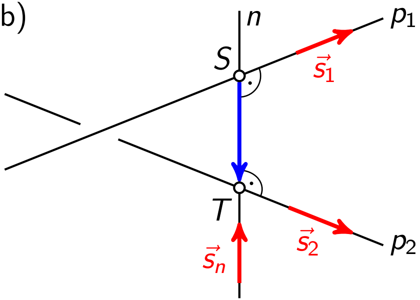

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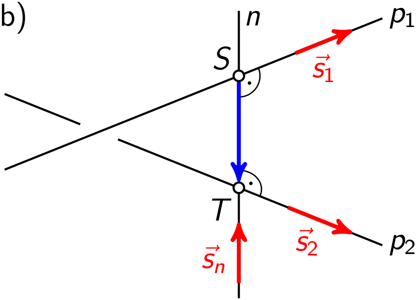

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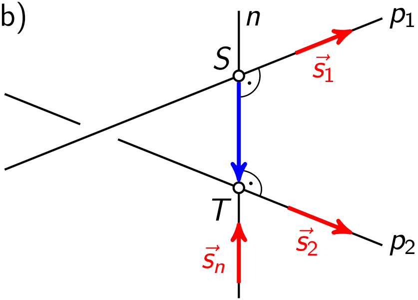

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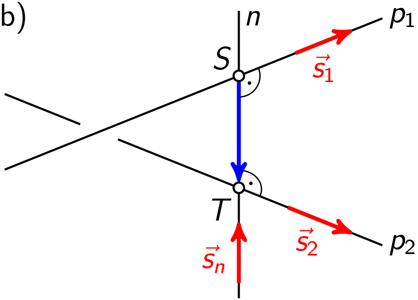

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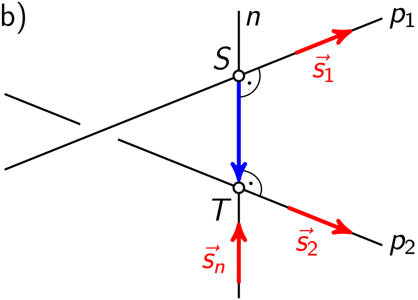

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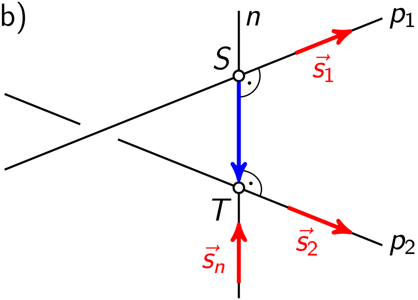

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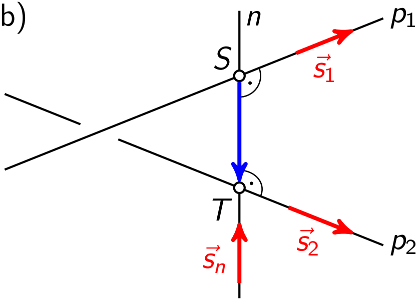

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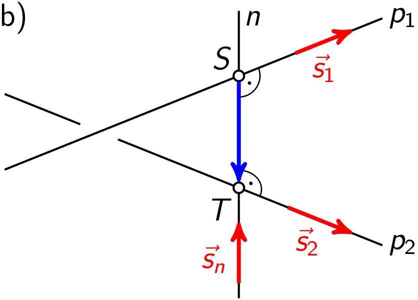

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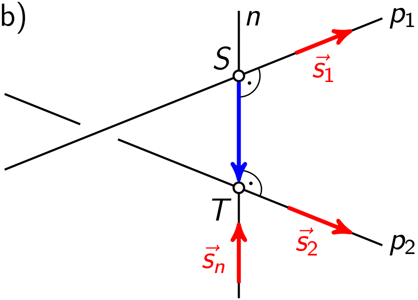

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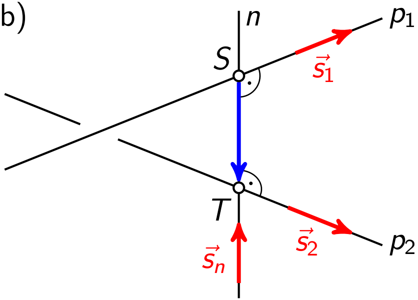

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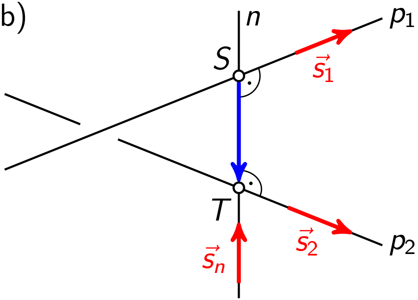

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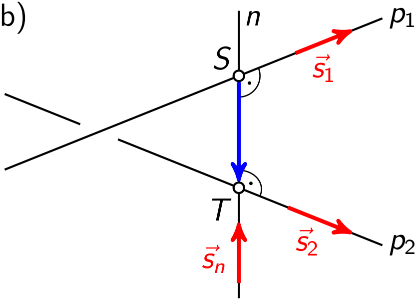

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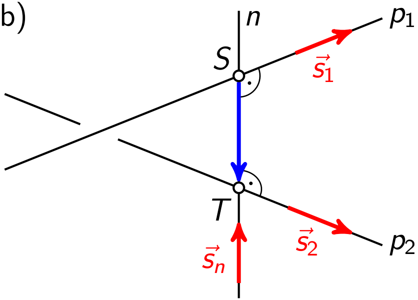
$$\overrightarrow{ST} = \lambda \vec{s}_n$$

b)



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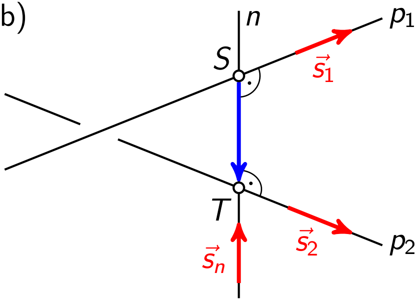

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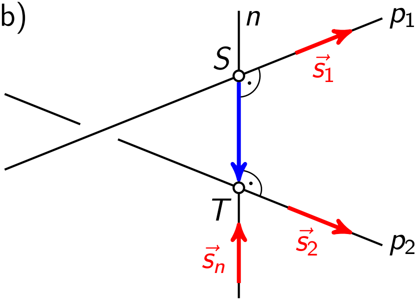

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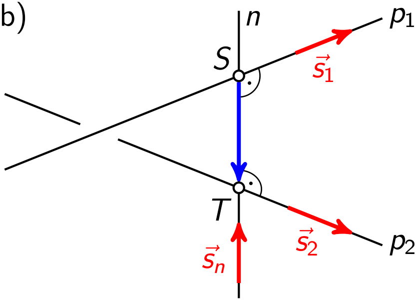
$$\overrightarrow{ST} =$$

b)



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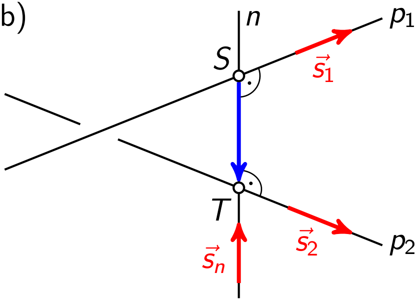
$$\overrightarrow{ST} = (-4\lambda, -2\lambda, -4\lambda)$$

b)



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$$\overrightarrow{ST} = ((1+2v) - (-2u),\ 1 - (1+2u),\ (3-2v) - (2+u))$$

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$$\boxed{\begin{array}{l} S(-2u, 1+2u, 2+u) \\ T(1+2v, 1, 3-2v) \end{array}}$$

$$\overrightarrow{ST} = \lambda \vec{s}_n = \lambda \cdot (-4, -2, -4)$$

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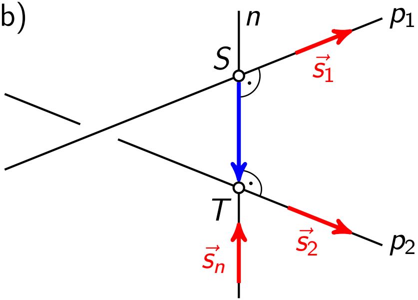
b)



$$\left.\begin{array}{l} n \perp p_1 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_1 \\ n \perp p_2 \;\Rightarrow\; \vec{s}_n \perp \vec{s}_2 \end{array}\right\} \Rightarrow \vec{s}_n = \vec{s}_1 \times \vec{s}_2$$

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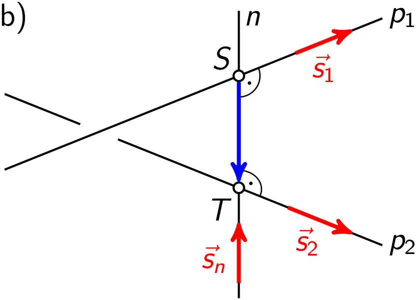
b)



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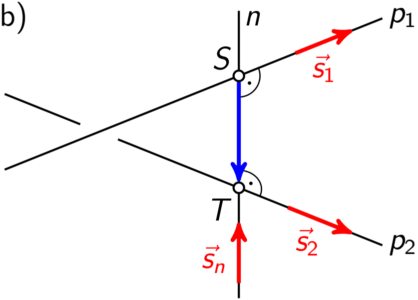
b)



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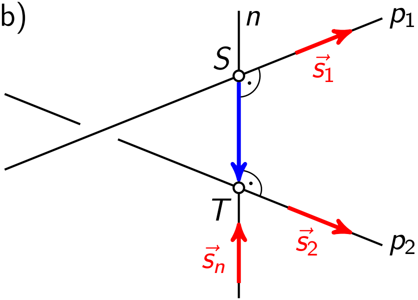

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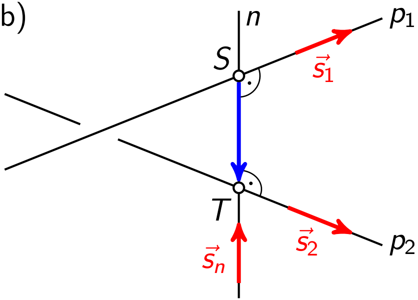

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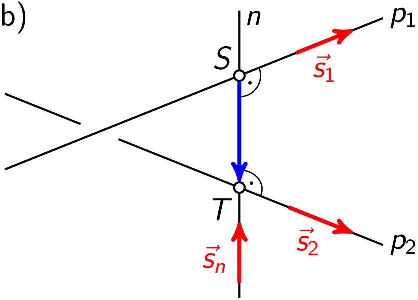
b)



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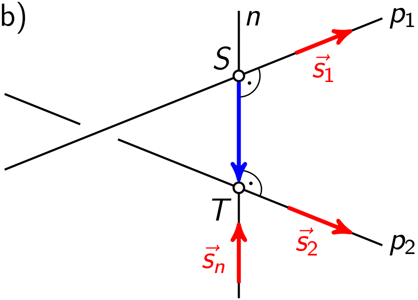

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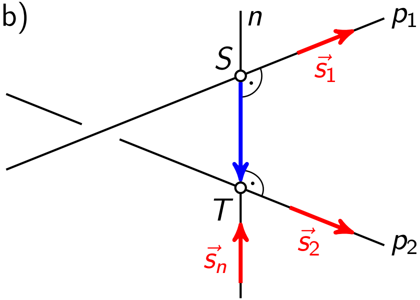
b)



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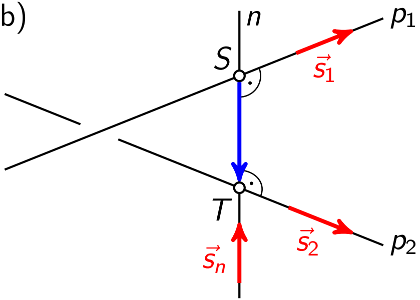

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$$\boxed{v = \frac{1}{6}}$$

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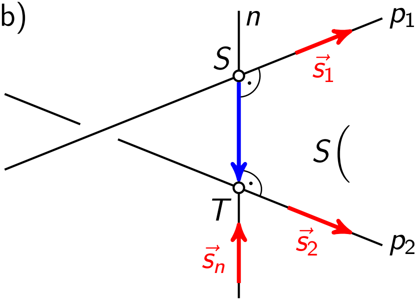

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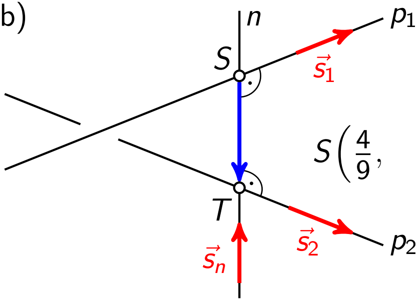

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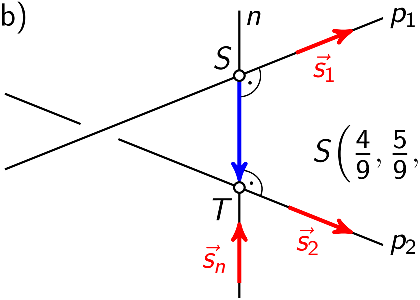

$S\left(\frac{4}{9}, \frac{5}{9},\right.$

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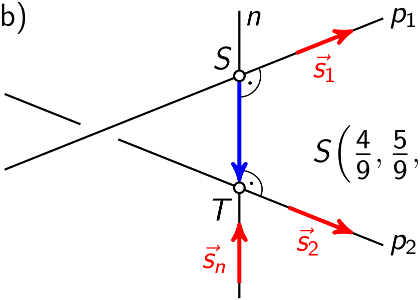

$$S\left(\frac{4}{9},\frac{5}{9},\frac{16}{9}\right)$$

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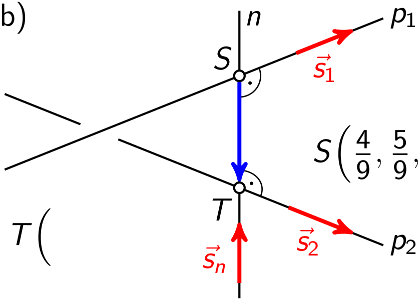

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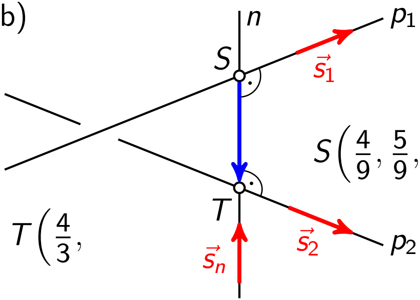
b)



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$$\boxed{\begin{array}{l} \vec{s}_1 = (-2, 2, 1) \\ \vec{s}_2 = (2, 0, -2) \end{array}}$$

$$S\left(\frac{4}{9}, \frac{5}{9}, \frac{16}{9}\right)$$

$$T\Big(\frac{4}{3},$$

$$\vec{s}_n = \begin{vmatrix} \vec{i} & \vec{j} & \vec{k} \\ -2 & 2 & 1 \\ 2 & 0 & -2 \end{vmatrix} = (-4, -2, -4)$$

$$\overrightarrow{ST} = ((1+2v) - (-2u),\ 1 - (1+2u),\ (3-2v) - (2+u))$$

$$\boxed{\overrightarrow{ST} = (1 + 2u + 2v, -2u, 1 - u - 2v)}$$

$$\boxed{\begin{array}{l} S(-2u, 1+2u, 2+u) \\ T(1+2v, 1, 3-2v) \end{array}}$$

$$\overrightarrow{ST} = \lambda \vec{s}_n = \lambda \cdot (-4, -2, -4)$$

$$\lambda = -\frac{2}{9}$$

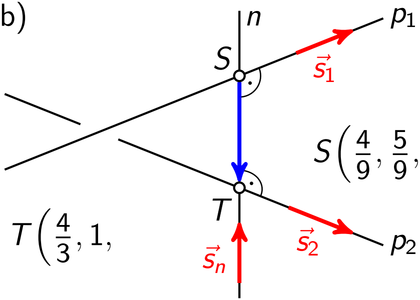
$$\boxed{\overrightarrow{ST} = (-4\lambda, -2\lambda, -4\lambda)}$$

$$\boxed{v = \frac{1}{6}}$$

$$\left.\begin{array}{r} 1 + 2u + 2v = -4\lambda \\ -2u = -2\lambda \\ 1 - u - 2v = -4\lambda \end{array}\right\}$$

$$\boxed{u = -\frac{2}{9}}$$

b)



$S\left(\frac{4}{9}, \frac{5}{9}, \frac{16}{9}\right)$

$T\left(\frac{4}{3}, 1,\right.$

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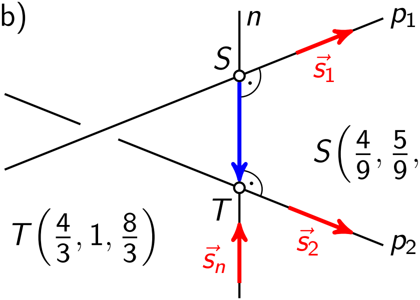
b)



$$S\left(\frac{4}{9}, \frac{5}{9}, \frac{16}{9}\right)$$

$$T\left(\frac{4}{3}, 1, \frac{8}{3}\right)$$

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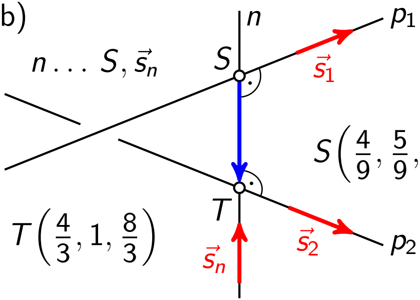

$n \ldots S, \vec{s}_n$

$$S\left(\frac{4}{9}, \frac{5}{9}, \frac{16}{9}\right)$$

$$T\left(\frac{4}{3}, 1, \frac{8}{3}\right)$$

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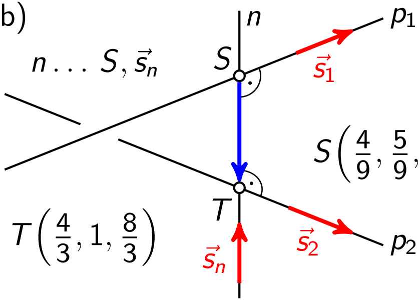
$$\boxed{u = -\frac{2}{9}}$$

b)

$n \ldots S, \vec{s}_n$



$T\left(\frac{4}{3}, 1, \frac{8}{3}\right)$

$S\left(\frac{4}{9}, \frac{5}{9}, \frac{16}{9}\right)$

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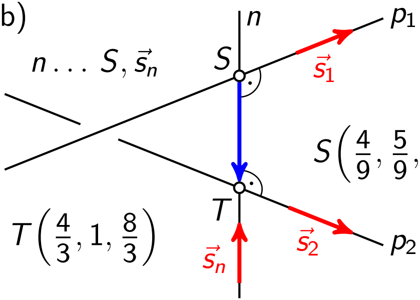
$n \ldots$ ______ = ______ = ______

b)

$n \ldots S, \vec{s}_n$



$S\left(\frac{4}{9}, \frac{5}{9}, \frac{16}{9}\right)$

$T\left(\frac{4}{3}, 1, \frac{8}{3}\right)$

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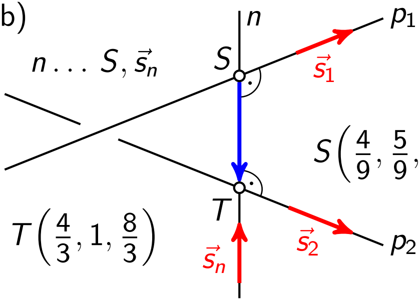
$$n \ldots \frac{\qquad}{-4} = \frac{\qquad}{-2} = \frac{\qquad}{-4}$$

b)



$n \ldots S, \vec{s}_n$

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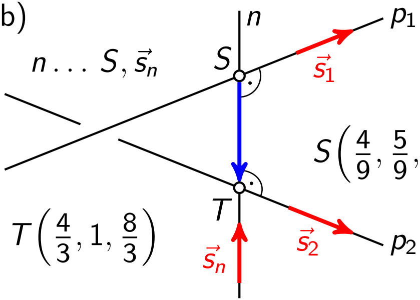
$$n \ldots \frac{x - \frac{4}{9}}{-4} = \frac{\qquad}{-2} = \frac{\qquad}{-4}$$

b)



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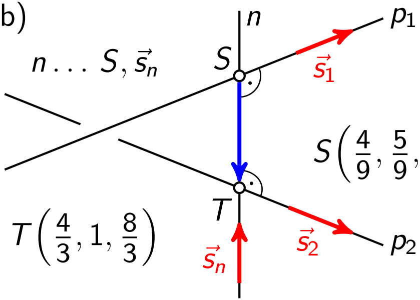
$$n \dots \frac{x - \frac{4}{9}}{-4} = \frac{y - \frac{5}{9}}{-2} = \frac{\qquad}{-4}$$

b)



$n \dots S, \vec{s}_n$

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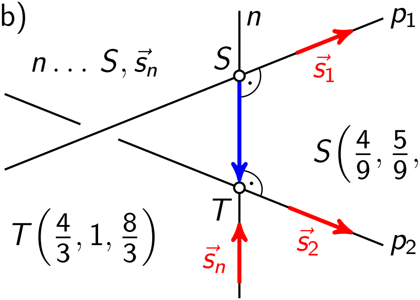

$n \ldots S, \vec{s}_n$

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$T\left(\frac{4}{3}, 1, \frac{8}{3}\right)$

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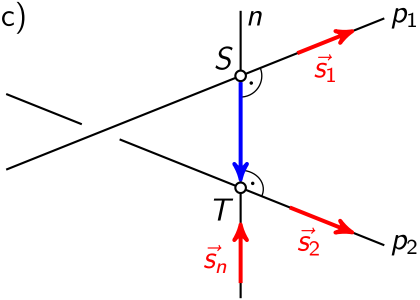
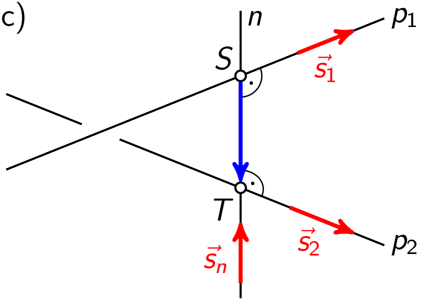
c)



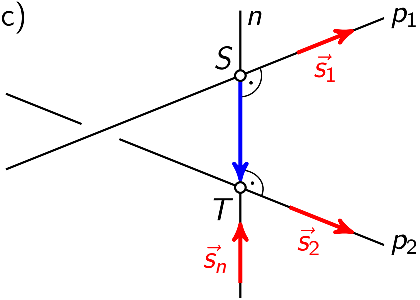
c)



Udaljenost mimosmjernih pravaca

$$d(p_1, p_2) = \frac{\left|(\vec{r_2} - \vec{r_1}, \vec{s_1}, \vec{s_2})\right|}{|\vec{s_1} \times \vec{s_2}|}$$

c)



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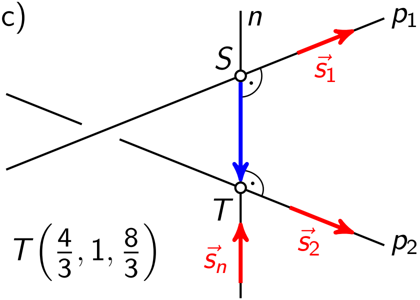
$$d(p_1, p_2) = \frac{\left|(\vec{r_2} - \vec{r_1}, \vec{s_1}, \vec{s_2})\right|}{|\vec{s_1} \times \vec{s_2}|}$$

$$d(p_1, p_2) = |ST|$$

c)



$T\left(\frac{4}{3}, 1, \frac{8}{3}\right)$

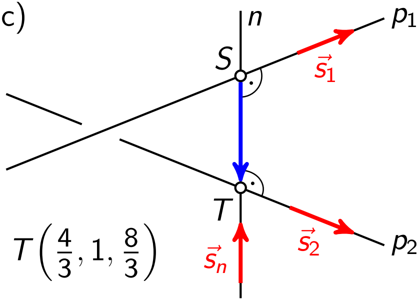
Udaljenost mimosmjernih pravaca

$$d(p_1, p_2) = \frac{\left|\left(\vec{r_2} - \vec{r_1}, \vec{s_1}, \vec{s_2}\right)\right|}{\left|\vec{s_1} \times \vec{s_2}\right|}$$

$S\left(\frac{4}{9}, \frac{5}{9}, \frac{16}{9}\right)$

$$d(p_1, p_2) = |ST|$$

c)



$T\left(\frac{4}{3}, 1, \frac{8}{3}\right)$

Udaljenost mimosmjernih pravaca

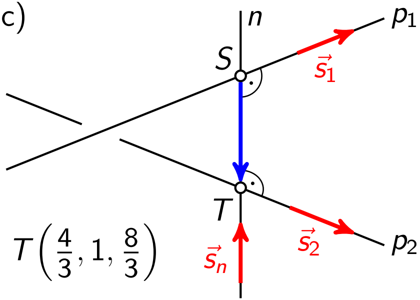
$$d(p_1, p_2) = \frac{\left|(\vec{r}_2 - \vec{r}_1, \vec{s}_1, \vec{s}_2)\right|}{|\vec{s}_1 \times \vec{s}_2|}$$

$S\left(\frac{4}{9}, \frac{5}{9}, \frac{16}{9}\right)$

$$d(p_1, p_2) = |ST|$$

$$|ST| = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

c)



Udaljenost mimosmjernih pravaca

$$d(p_1,p_2)=\frac{\left|(\vec{r_2}-\vec{r_1},\vec{s_1},\vec{s_2})\right|}{\left|\vec{s_1}\times\vec{s_2}\right|}$$

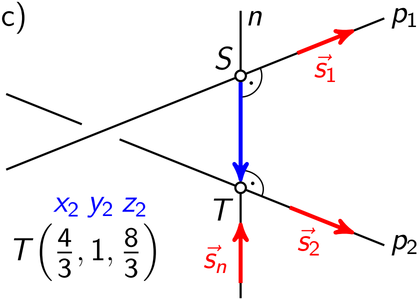
$$T\left(\frac{4}{3},1,\frac{8}{3}\right)$$

$$S\left(\overset{x_1}{\frac{4}{9}},\overset{y_1}{\frac{5}{9}},\overset{z_1}{\frac{16}{9}}\right)$$

$$d(p_1,p_2)=|ST|$$

$$|ST|=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2+(z_2-z_1)^2}$$

c)



Udaljenost mimosmjernih pravaca

$$d(p_1,p_2)=\frac{\left|\left(\vec{r_2}-\vec{r_1},\vec{s_1},\vec{s_2}\right)\right|}{\left|\vec{s_1}\times\vec{s_2}\right|}$$

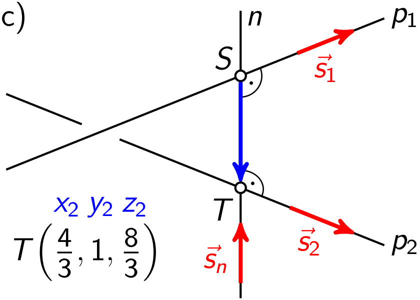
$$T\left(\overset{x_2}{\frac{4}{3}},\overset{y_2}{1},\overset{z_2}{\frac{8}{3}}\right)$$

$$S\left(\overset{x_1}{\frac{4}{9}},\overset{y_1}{\frac{5}{9}},\overset{z_1}{\frac{16}{9}}\right)$$

$$d(p_1,p_2)=|ST|$$

$$|ST|=\sqrt{(x_2-x_1)^2+(y_2-y_1)^2+(z_2-z_1)^2}$$

c)



Udaljenost mimosmjernih pravaca

$$d(p_1, p_2) = \frac{\left|(\vec{r}_2 - \vec{r}_1, \vec{s}_1, \vec{s}_2)\right|}{|\vec{s}_1 \times \vec{s}_2|}$$

$$T\left(\overset{x_2}{\frac{4}{3}}, \overset{y_2}{1}, \overset{z_2}{\frac{8}{3}}\right)$$

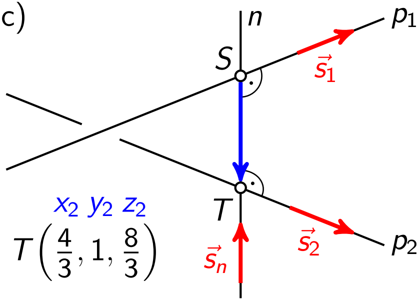
$$S\left(\overset{x_1}{\frac{4}{9}}, \overset{y_1}{\frac{5}{9}}, \overset{z_1}{\frac{16}{9}}\right)$$

$$d(p_1, p_2) = |ST|$$

$$d(p_1, p_2) =$$

$$|ST| = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

c)



Udaljenost mimosmjernih pravaca

$$d(p_1, p_2) = \frac{\left|(\vec{r}_2 - \vec{r}_1, \vec{s}_1, \vec{s}_2)\right|}{|\vec{s}_1 \times \vec{s}_2|}$$

$$T\left(\overset{x_2}{\frac{4}{3}}, \overset{y_2}{1}, \overset{z_2}{\frac{8}{3}}\right)$$

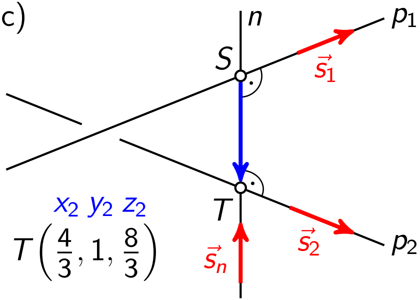
$$S\left(\overset{x_1}{\frac{4}{9}}, \overset{y_1}{\frac{5}{9}}, \overset{z_1}{\frac{16}{9}}\right)$$

$$d(p_1, p_2) = |ST|$$

$$d(p_1, p_2) = \sqrt{\qquad\qquad\qquad\qquad\qquad\qquad}$$

$$|ST| = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

c)



$$T\left(\overset{x_2}{\frac{4}{3}}, \overset{y_2}{1}, \overset{z_2}{\frac{8}{3}}\right)$$

Udaljenost mimosmjernih pravaca

$$d(p_1, p_2) = \frac{\left|\left(\vec{r}_2 - \vec{r}_1, \vec{s}_1, \vec{s}_2\right)\right|}{\left|\vec{s}_1 \times \vec{s}_2\right|}$$

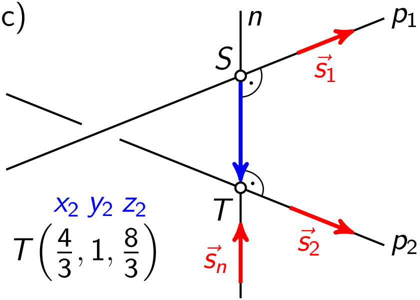
$$S\left(\overset{x_1}{\frac{4}{9}}, \overset{y_1}{\frac{5}{9}}, \overset{z_1}{\frac{16}{9}}\right)$$

$$d(p_1, p_2) = |ST|$$

$$d(p_1, p_2) = \sqrt{\left(\frac{4}{3} - \frac{4}{9}\right)^2}$$

$$|ST| = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

c)



$$T\left(\overset{x_2}{\frac{4}{3}}, \overset{y_2}{1}, \overset{z_2}{\frac{8}{3}}\right)$$

Udaljenost mimosmjernih pravaca

$$d(p_1, p_2) = \frac{\left|(\vec{r}_2 - \vec{r}_1, \vec{s}_1, \vec{s}_2)\right|}{|\vec{s}_1 \times \vec{s}_2|}$$

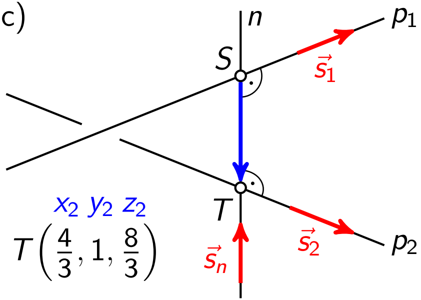
$$S\left(\overset{x_1}{\frac{4}{9}}, \overset{y_1}{\frac{5}{9}}, \overset{z_1}{\frac{16}{9}}\right)$$

$$d(p_1, p_2) = |ST|$$

$$d(p_1, p_2) = \sqrt{\left(\frac{4}{3} - \frac{4}{9}\right)^2 + \left(1 - \frac{5}{9}\right)^2 \qquad\qquad\qquad\qquad}$$

$$|ST| = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

c)



$$T\left(\overset{x_2}{\frac{4}{3}}, \overset{y_2}{1}, \overset{z_2}{\frac{8}{3}}\right)$$

$$S\left(\overset{x_1}{\frac{4}{9}}, \overset{y_1}{\frac{5}{9}}, \overset{z_1}{\frac{16}{9}}\right)$$

Udaljenost mimosmjernih pravaca

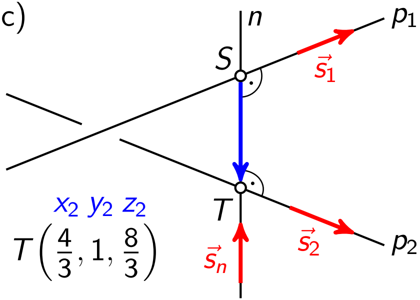
$$d(p_1, p_2) = \frac{\left|(\vec{r}_2 - \vec{r}_1, \vec{s}_1, \vec{s}_2)\right|}{|\vec{s}_1 \times \vec{s}_2|}$$

$$d(p_1, p_2) = |ST|$$

$$d(p_1, p_2) = \sqrt{\left(\frac{4}{3} - \frac{4}{9}\right)^2 + \left(1 - \frac{5}{9}\right)^2 + \left(\frac{8}{3} - \frac{16}{9}\right)^2}$$

$$|ST| = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

c)



$$T\left(\overset{x_2}{\frac{4}{3}}, \overset{y_2}{1}, \overset{z_2}{\frac{8}{3}}\right)$$

$$S\left(\overset{x_1}{\frac{4}{9}}, \overset{y_1}{\frac{5}{9}}, \overset{z_1}{\frac{16}{9}}\right)$$

Udaljenost mimosmjernih pravaca

$$d(p_1, p_2) = \frac{\left|(\vec{r_2} - \vec{r_1}, \vec{s_1}, \vec{s_2})\right|}{\left|\vec{s_1} \times \vec{s_2}\right|}$$

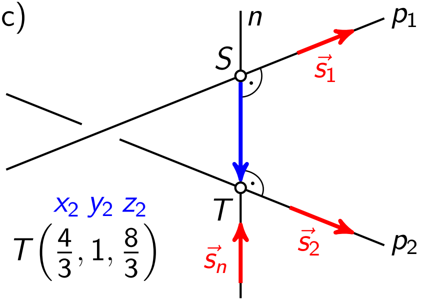
$$d(p_1, p_2) = |ST|$$

$$d(p_1, p_2) = \sqrt{\left(\frac{4}{3} - \frac{4}{9}\right)^2 + \left(1 - \frac{5}{9}\right)^2 + \left(\frac{8}{3} - \frac{16}{9}\right)^2}$$

$$d(p_1, p_2) = \frac{4}{3}$$

$$|ST| = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

c)



$$T\left(\overset{x_2}{\frac{4}{3}}, \overset{y_2}{1}, \overset{z_2}{\frac{8}{3}}\right)$$

Udaljenost mimosmjernih pravaca

$$d(p_1, p_2) = \frac{\left|(\vec{r_2} - \vec{r_1}, \vec{s_1}, \vec{s_2})\right|}{|\vec{s_1} \times \vec{s_2}|}$$

$$S\left(\overset{x_1}{\frac{4}{9}}, \overset{y_1}{\frac{5}{9}}, \overset{z_1}{\frac{16}{9}}\right)$$

$$d(p_1, p_2) = |ST|$$

$$d(p_1, p_2) = \sqrt{\left(\frac{4}{3} - \frac{4}{9}\right)^2 + \left(1 - \frac{5}{9}\right)^2 + \left(\frac{8}{3} - \frac{16}{9}\right)^2}$$

$$\boxed{d(p_1, p_2) = \frac{4}{3}}$$

$$|ST| = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2}$$

četvrti zadatak

Zadatak 4

Zraka svjetlosti prolazi točkom $T(-2,-1,1)$ *i kreće se u smjeru vektora* $\vec{v}=(-1,0,-1)$ *te se reflektira na ravnini*

$$\pi_1 \ldots\ x+y-2z=0.$$

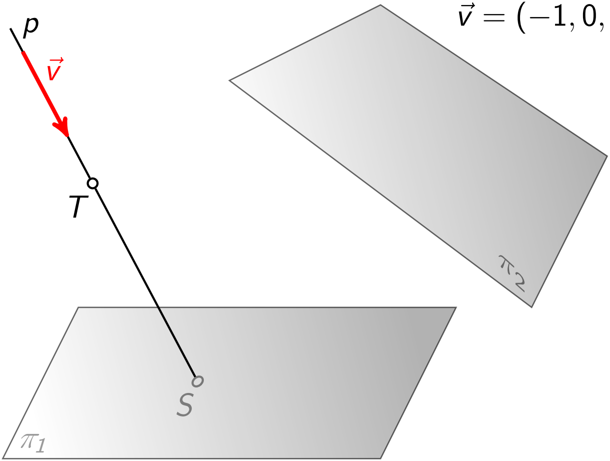
U kojoj točki reflektirana zraka siječe ravninu

$$\pi_2 \ldots\ x+y+z+18=0?$$

Rješenje

$$T(-2,-1,1)$$

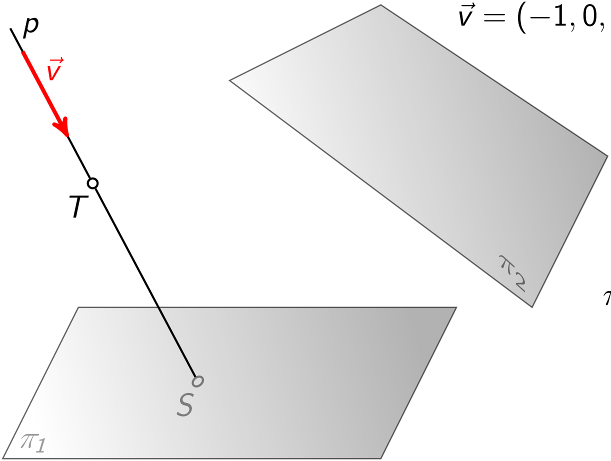
$$\vec{v} = (-1,0,-1)$$



Rješenje

$T(-2,-1,1)$

$\vec{v}=(-1,0,-1)$

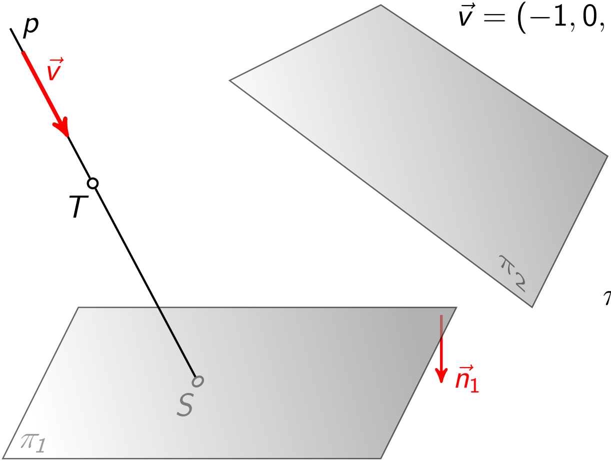


$\pi_1 \dots x+y-2z=0$

Rješenje

$T(-2,-1,1) \quad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

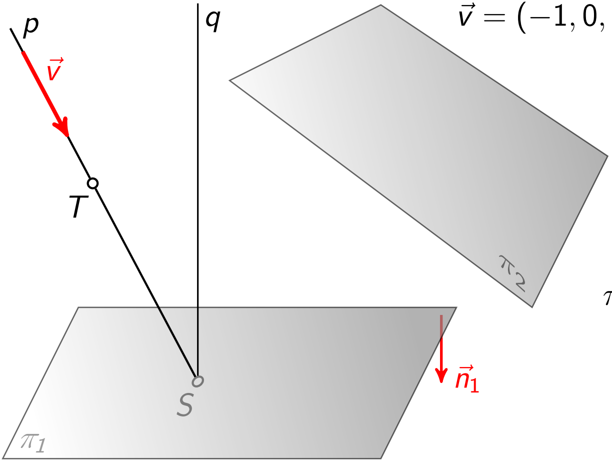


$\pi_1 \ldots x + y - 2z = 0$

Rješenje

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

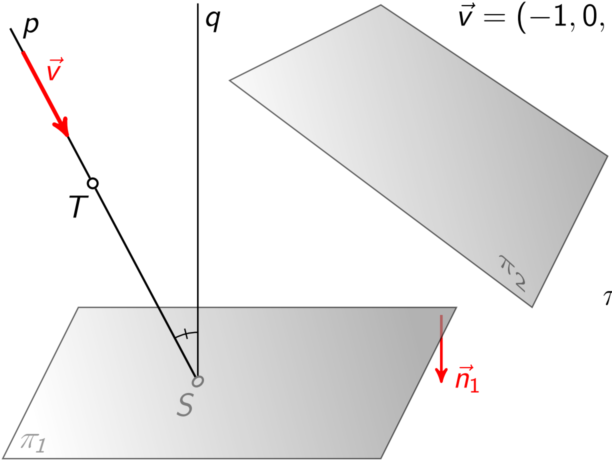


$\pi_1 \ldots x + y - 2z = 0$

Rješenje

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

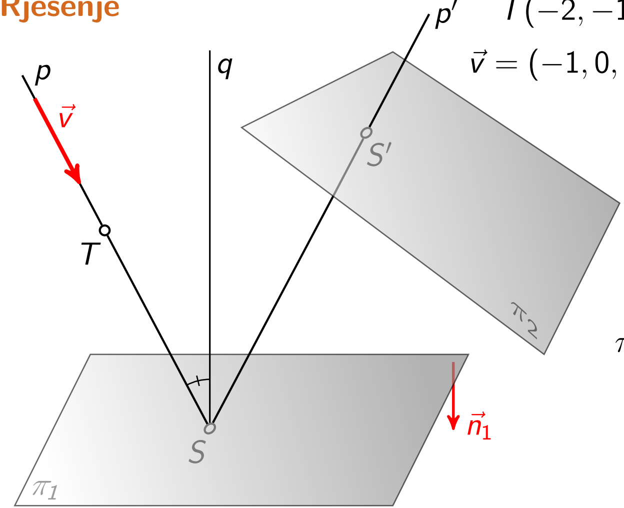


$\pi_1 \ldots x + y - 2z = 0$

Rješenje

$T(-2,-1,1)$ $\vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

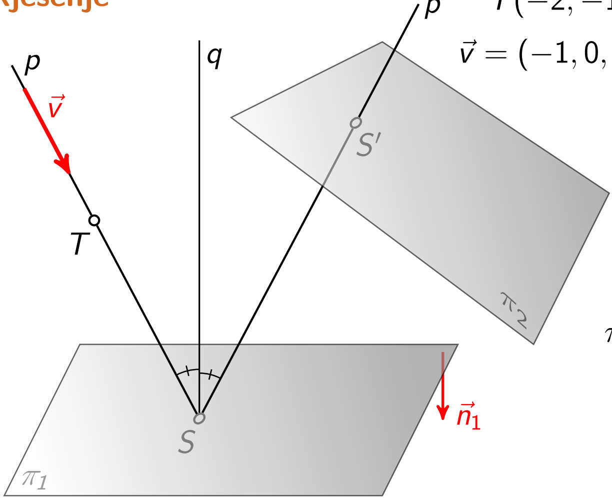


$\pi_1 \ldots x + y - 2z = 0$

Rješenje

$T(-2,-1,1)$ $\quad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

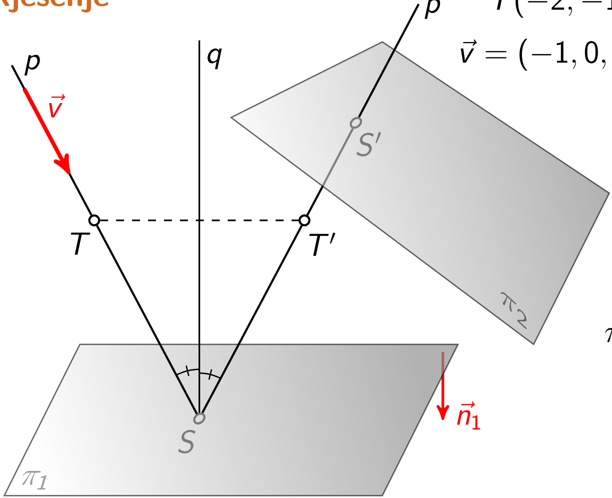


$\pi_1 \ldots x + y - 2z = 0$

Rješenje

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

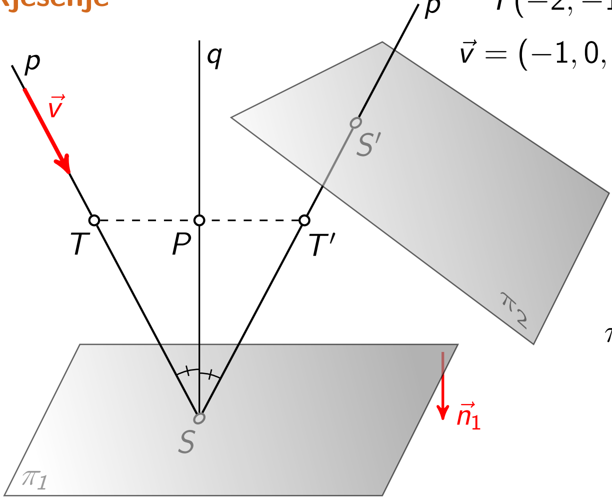


$\pi_1 \ldots x + y - 2z = 0$

Rješenje

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

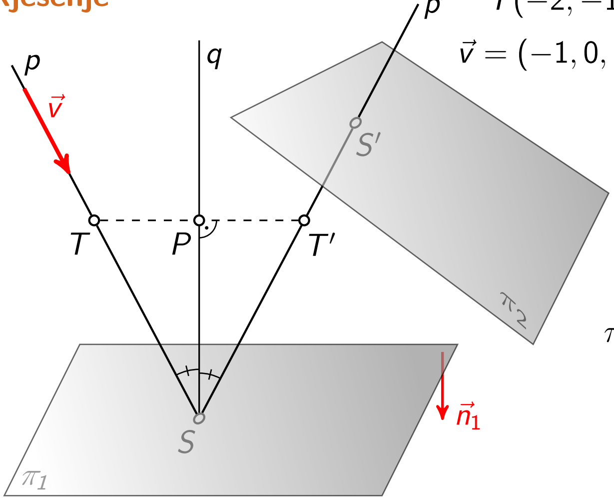


$\pi_1 \ldots x + y - 2z = 0$

Rješenje

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

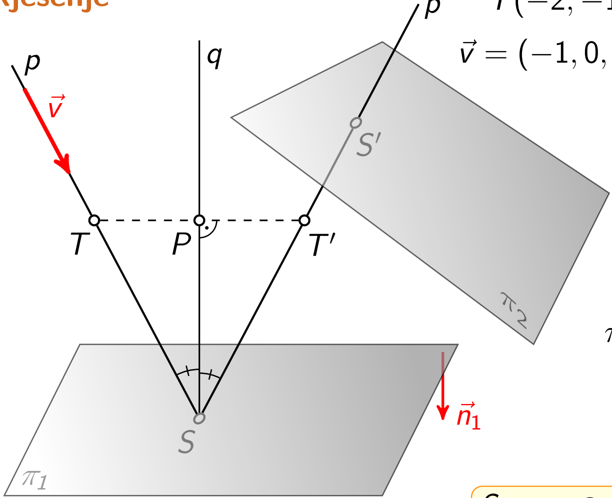


$\pi_1 \ldots x + y - 2z = 0$

Rješenje

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$



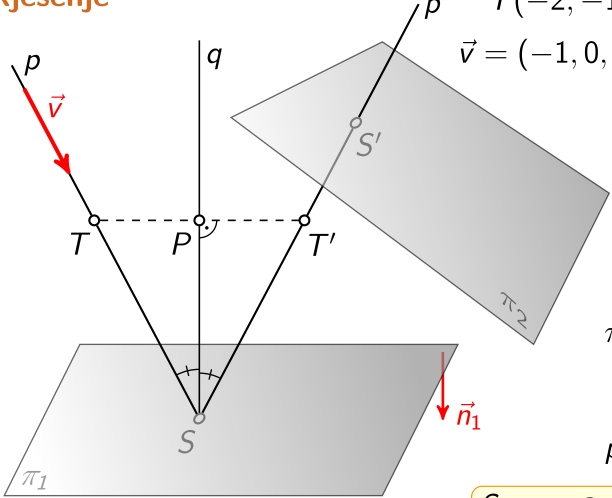
$$\pi_1 \ldots x + y - 2z = 0$$

$$\boxed{S = \pi_1 \cap p}$$

Rješenje

$T(-2,-1,1)$ $\quad$ $\vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

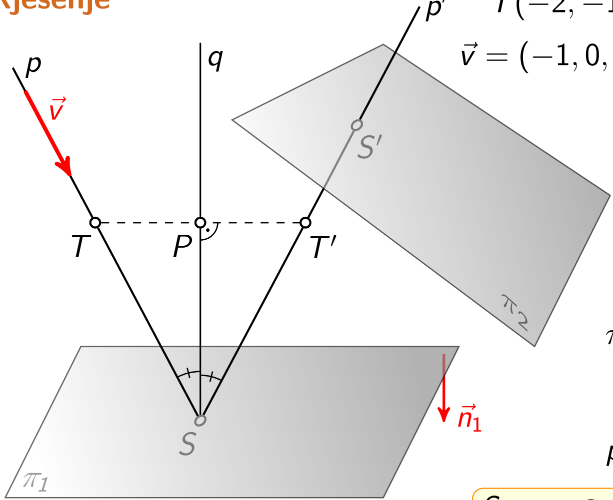


$$\pi_1 \ldots x + y - 2z = 0$$

$$p \ldots \left\{ \vphantom{\begin{matrix}a\\b\\c\end{matrix}} \right.$$

$$\boxed{S = \pi_1 \cap p}$$

Rješenje



$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

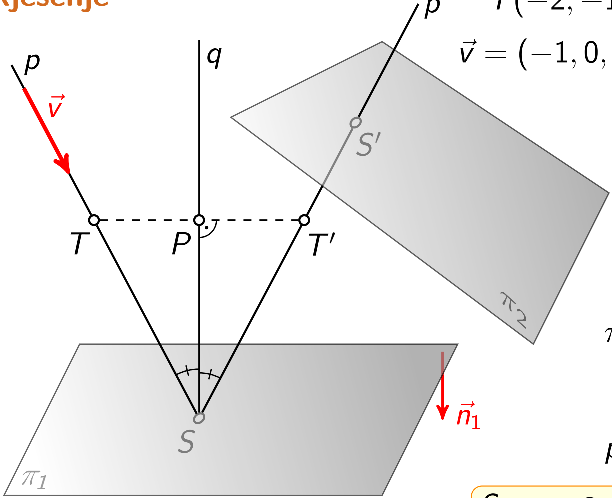
$\vec{v} = (-1,0,-1)$

$\pi_1 \ldots\ x + y - 2z = 0$

$$p \ldots \begin{cases} x = -2 - t \\ \\ \\ \end{cases}$$

$\boxed{S = \pi_1 \cap p}$

Rješenje



$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

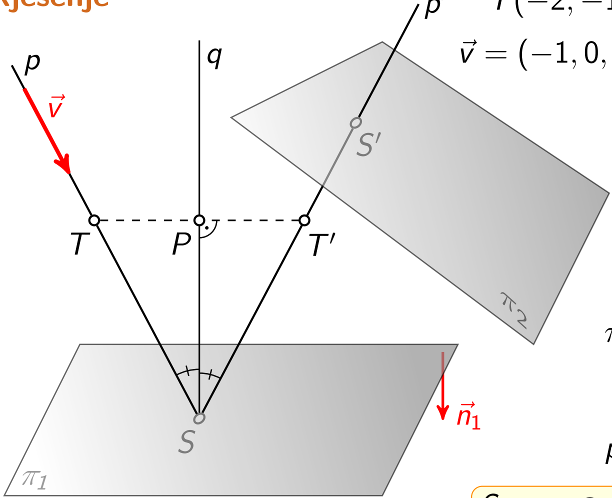
$\vec{v} = (-1,0,-1)$

$\pi_1 \ldots x + y - 2z = 0$

$$p \ldots \begin{cases} x = -2 - t \\ y = -1 \\ \end{cases}$$

$\boxed{S = \pi_1 \cap p}$

Rješenje



$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

$\pi_1 \ldots x + y - 2z = 0$

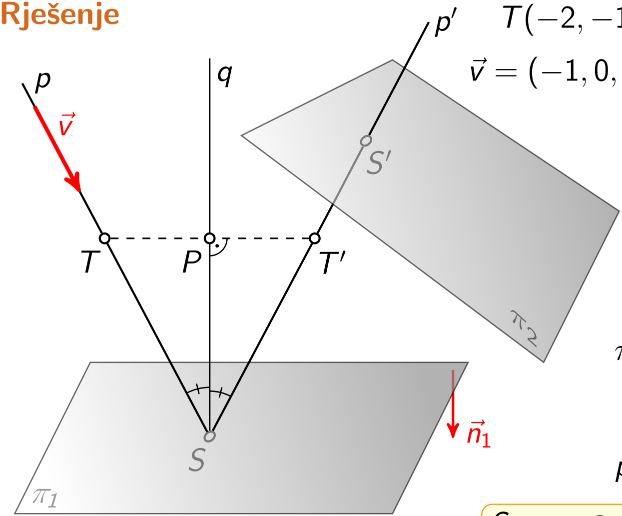
$$p \ldots \begin{cases} x = -2 - t \\ y = -1 \\ z = 1 - t \end{cases}$$

$\boxed{S = \pi_1 \cap p}$

Rješenje

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$



$$\pi_1 \ldots\ x + y - 2z = 0$$

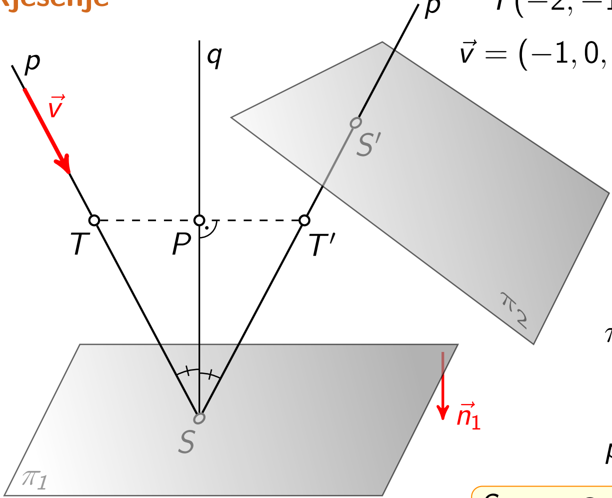
$$p \ldots \begin{cases} \boxed{\begin{aligned} x &= -2 - t \\ y &= -1 \\ z &= 1 - t \end{aligned}} \end{cases}$$

$$\boxed{S = \pi_1 \cap p}$$

Rješenje

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$



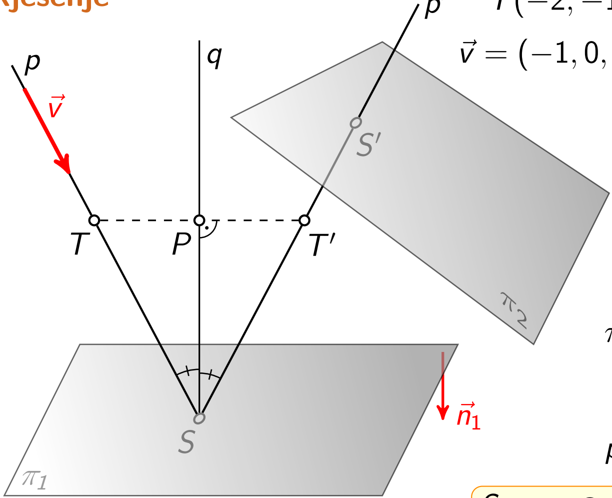
$x + y - 2z = 0$

$\pi_1 \ldots x + y - 2z = 0$

$$p \ldots \begin{cases} \boxed{\begin{aligned} x &= -2 - t \\ y &= -1 \\ z &= 1 - t \end{aligned}} \end{cases}$$

$S = \pi_1 \cap p$

Rješenje



$T(-2,-1,1)$ $\quad\vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

$$\pi_1 \ldots \; x + y - 2z = 0$$

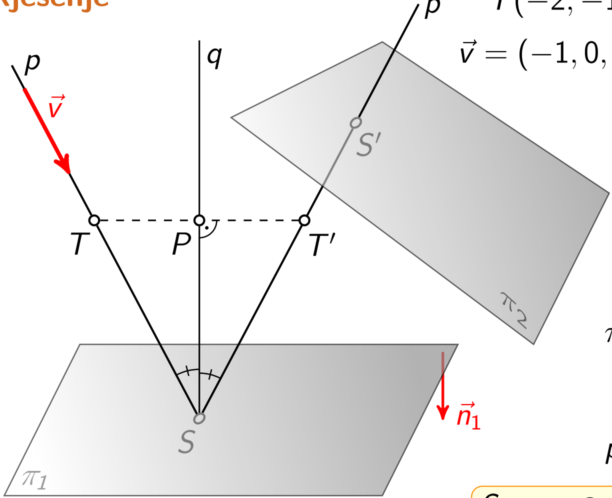
$$p \ldots \begin{cases} \boxed{\begin{array}{l} x = -2 - t \\ y = -1 \\ z = 1 - t \end{array}} \end{cases}$$

$$\boxed{S = \pi_1 \cap p}$$

$x + y - 2z = 0$

$(-2 - t)$

Rješenje



$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

$\pi_1 \ldots x + y - 2z = 0$

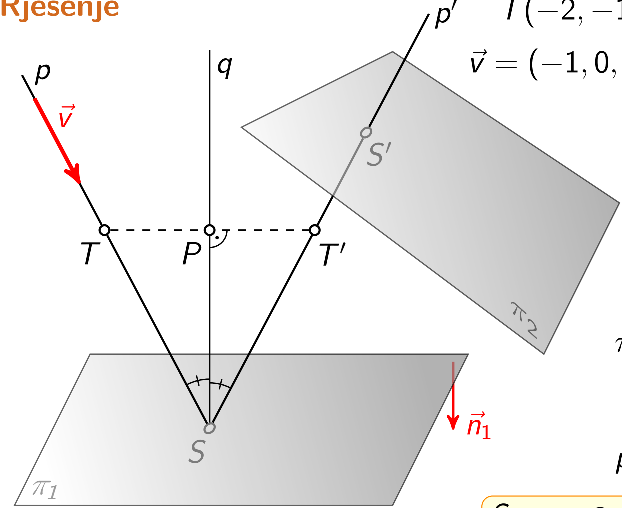
$$p \ldots \left\{ \boxed{\begin{array}{l} x = -2 - t \\ y = -1 \\ z = 1 - t \end{array}} \right.$$

$\boxed{S = \pi_1 \cap p}$

$x + y - 2z = 0$

$(-2-t) + (-1)$

Rješenje



$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

$\pi_1 \ldots \; x + y - 2z = 0$

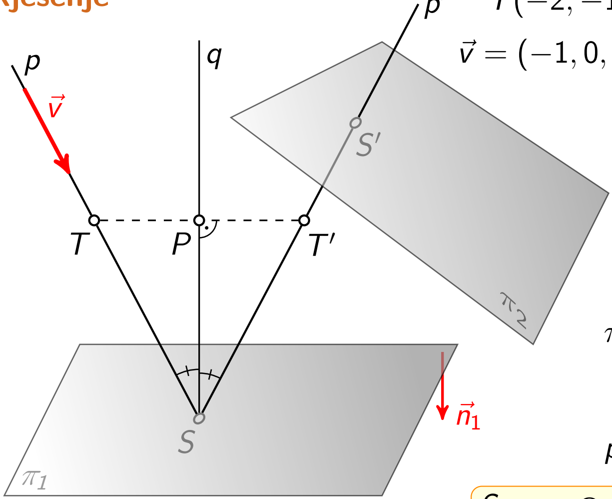
$$p \ldots \begin{cases} x = -2 - t \\ y = -1 \\ z = 1 - t \end{cases}$$

$\boxed{S = \pi_1 \cap p}$

$$x + y - 2z = 0$$

$$(-2 - t) + (-1) - 2(1 - t)$$

Rješenje



$$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$$

$$\vec{v} = (-1,0,-1)$$

$$\pi_1 \ldots x + y - 2z = 0$$

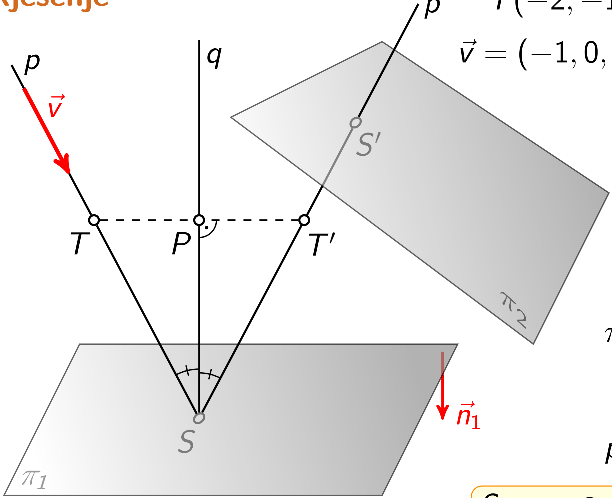
$$p \ldots \left\{ \boxed{\begin{aligned} x &= -2 - t \\ y &= -1 \\ z &= 1 - t \end{aligned}} \right.$$

$$\boxed{S = \pi_1 \cap p}$$

$$x + y - 2z = 0$$

$$(-2 - t) + (-1) - 2(1 - t) = 0$$

Rješenje



$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$

$\pi_1 \ldots x + y - 2z = 0$

$$p \ldots \begin{cases} \boxed{\begin{aligned} x &= -2 - t \\ y &= -1 \\ z &= 1 - t \end{aligned}} \end{cases}$$

$\boxed{S = \pi_1 \cap p}$

$$x + y - 2z = 0$$

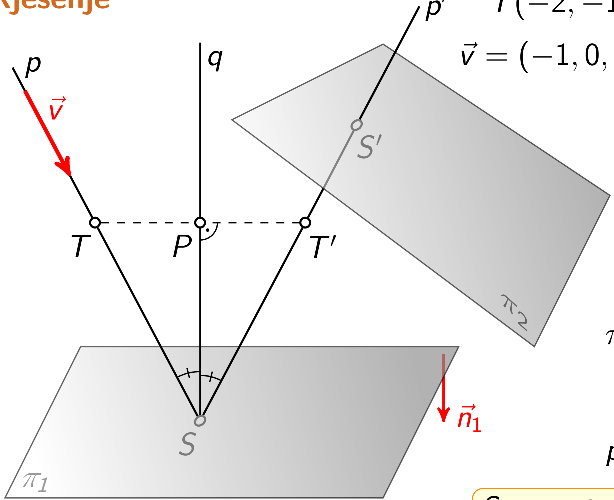
$$(-2 - t) + (-1) - 2(1 - t) = 0$$

$$t - 5 = 0$$

Rješenje

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1)$



$$\pi_1 \ldots \; x + y - 2z = 0$$

$$p \ldots \left\{ \boxed{\begin{aligned} x &= -2 - t \\ y &= -1 \\ z &= 1 - t \end{aligned}} \right.$$

$$\boxed{S = \pi_1 \cap p}$$

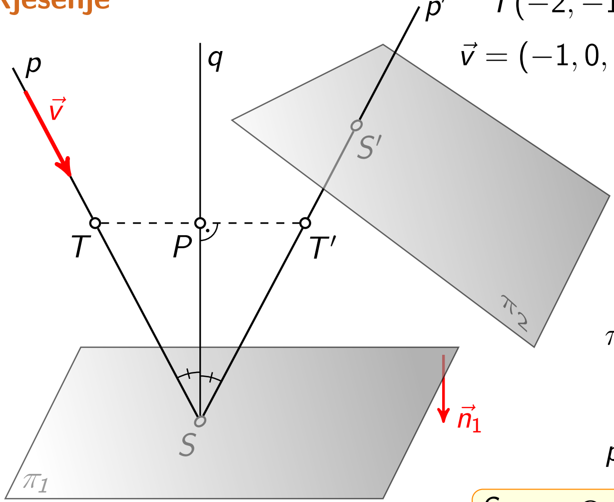
$$x + y - 2z = 0$$

$$(-2-t) + (-1) - 2(1-t) = 0$$

$$t - 5 = 0$$

$$t = 5$$

Rješenje



$T(-2, -1, 1) \qquad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$

Zraka (polupravac) siječe ravninu jedino ako je $t > 0$. Osim smjera, moramo poštivati i orijentaciju vektora $\vec{v}$.

$$\pi_1 \ldots x + y - 2z = 0$$

$$p \ldots \begin{cases} x = -2 - t \\ y = -1 \\ z = 1 - t \end{cases}$$

$S = \pi_1 \cap p$

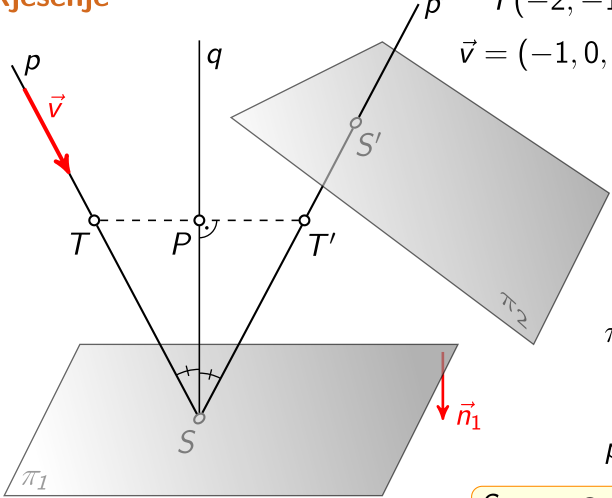
$$x + y - 2z = 0$$

$$(-2 - t) + (-1) - 2(1 - t) = 0$$

$$t - 5 = 0$$

$$\boxed{t = 5}$$

Rješenje



$T(-2,-1,1)$ $\quad \vec{n}_1=(1,1,-2)$

$\vec{v}=(-1,0,-1)$

Zraka (polupravac) siječe ravninu jedino ako je $t>0$. Osim smjera, moramo poštivati i orijentaciju vektora $\vec{v}$.

$$\pi_1 \ldots x+y-2z=0$$

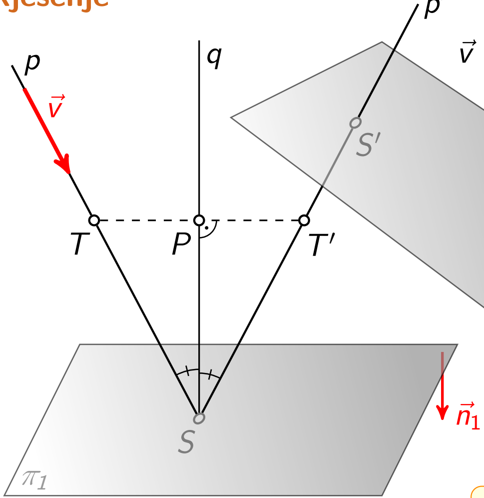
$$p \ldots \begin{cases} x=-2-t \\ y=-1 \\ z=1-t \end{cases}$$

$$S=\pi_1 \cap p$$

$$x+y-2z=0$$
$$(-2-t)+(-1)-2(1-t)=0$$
$$t-5=0$$
$$\boxed{t=5}$$

$$S(-7,-1,-4)$$

Rješenje



$T(-2,-1,1) \qquad \vec{n}_1=(1,1,-2)$

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Zraka (polupravac) siječe ravninu jedino ako je $t>0$. Osim smjera, moramo poštivati i orijentaciju vektora $\vec{v}$.

$\pi_1 \ldots x+y-2z=0$

$$p \ldots \begin{cases} \boxed{\begin{aligned} x &= -2-t \\ y &= -1 \\ z &= 1-t \end{aligned}} \end{cases}$$

$S=\pi_1\cap p$

$$x+y-2z=0$$

$$(-2-t)+(-1)-2(1-t)=0$$

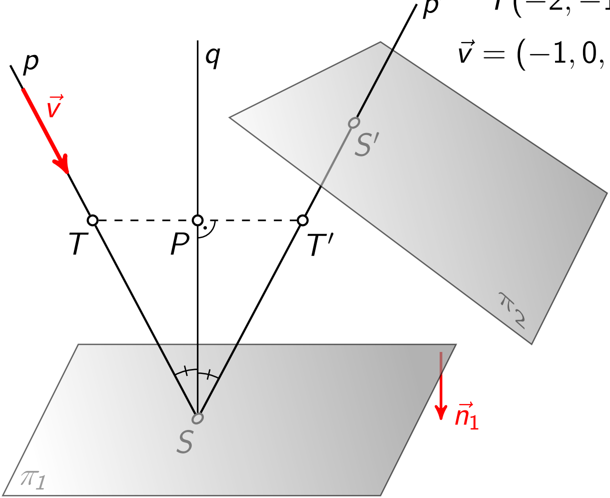
$$t-5=0$$

$$\boxed{t=5}$$

$$\boxed{\boxed{S(-7,-1,-4)}}$$

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

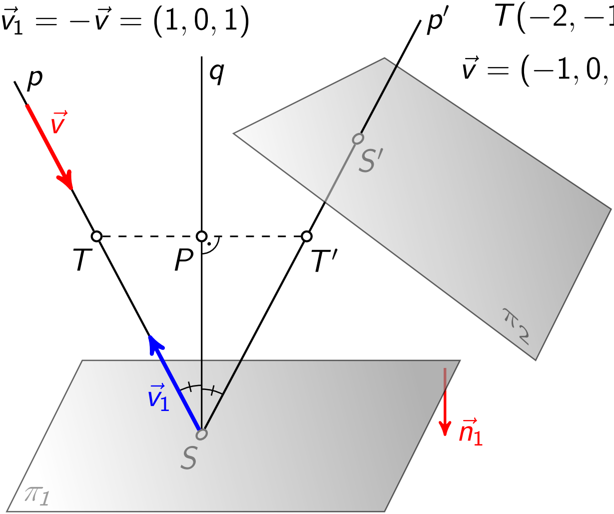
$\vec{v} = (-1,0,-1) \qquad S(-7,-1,-4)$



$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad S(-7, -1, -4)$



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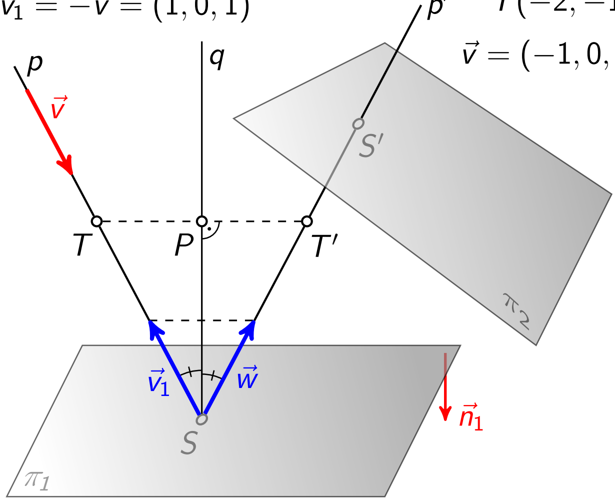

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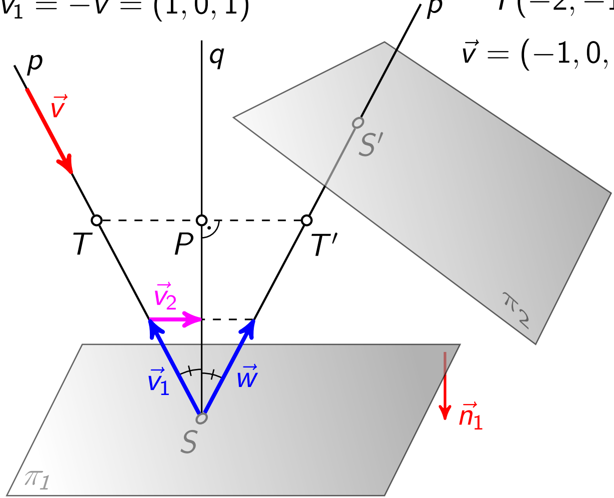

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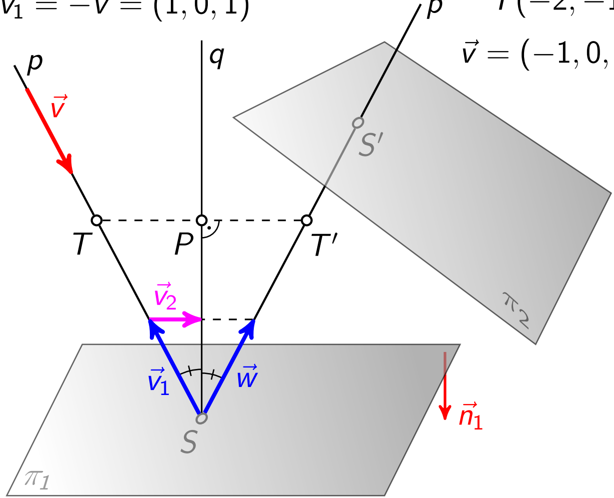

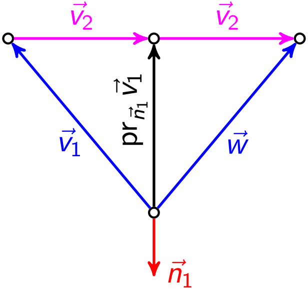

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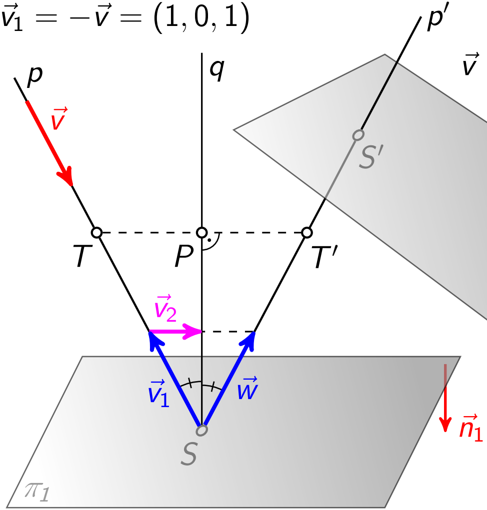

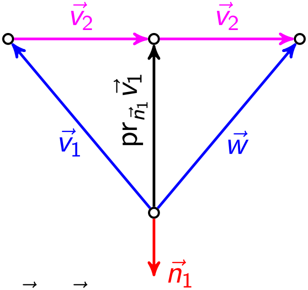

$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2} \vec{n}_1$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

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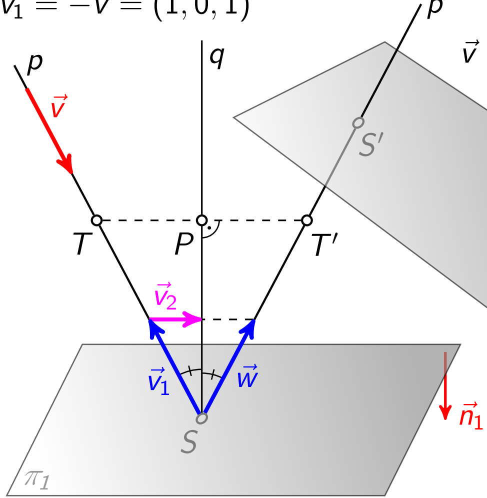
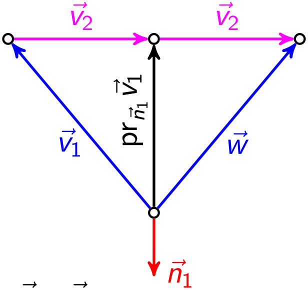
$\vec{v} = (-1, 0, -1) \quad S(-7, -1, -4)$





$$\text{pr}_{\vec{n}_1} \vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2} \vec{n}_1$$

$\vec{v}_1 \cdot \vec{n}_1 =$

$\vec{v}_1 = -\vec{v} = (1,0,1)$

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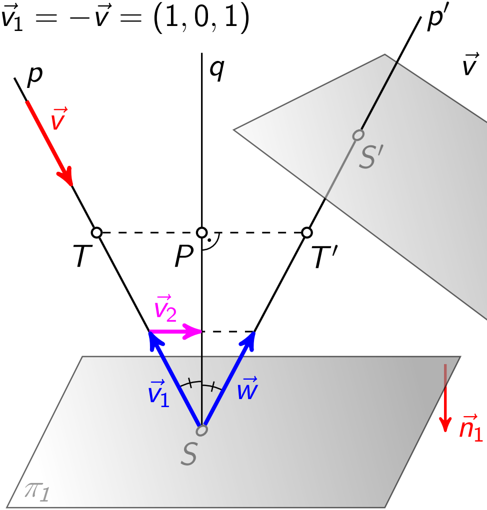
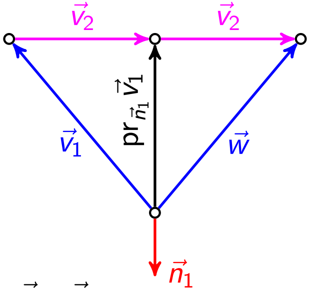




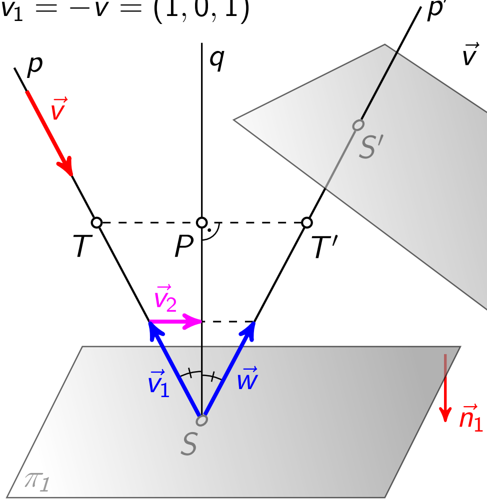
$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2} \vec{n}_1$$

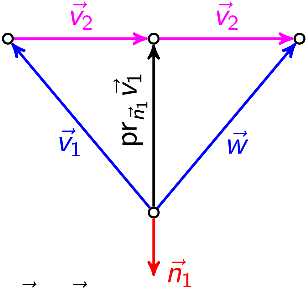
$\vec{v}_1 \cdot \vec{n}_1 = (1,0,1)$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad$ $\vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad$ $S(-7, -1, -4)$





$$\mathrm{pr}_{\vec{n}_1}\vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2}\vec{n}_1$$

$\vec{v}_1 \cdot \vec{n}_1 = (1, 0, 1) \cdot$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad \vec{n}_1 = (1, 1, -2)$

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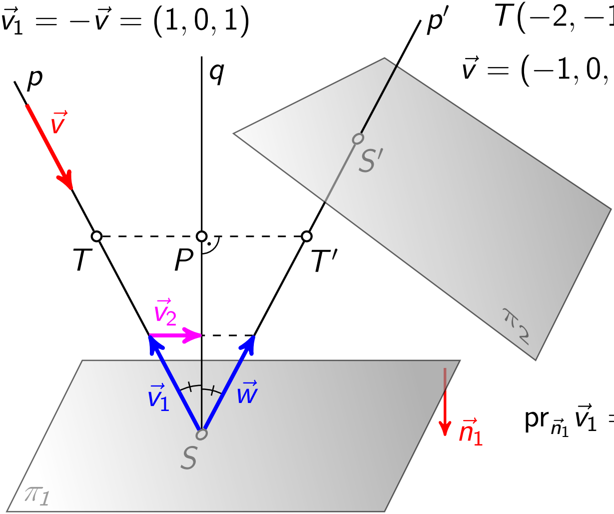

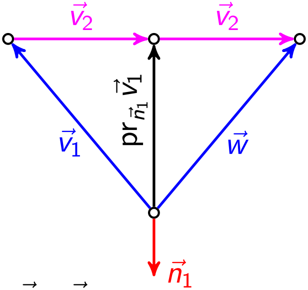

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$\vec{v}_1 \cdot \vec{n}_1 = (1, 0, 1) \cdot (1, 1, -2)$

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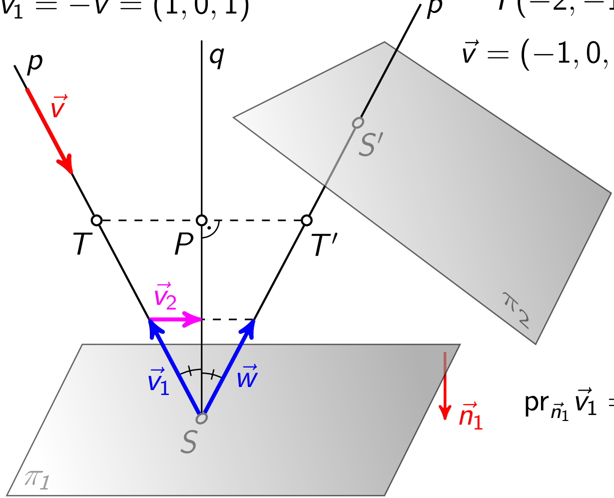

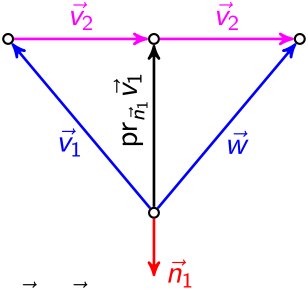

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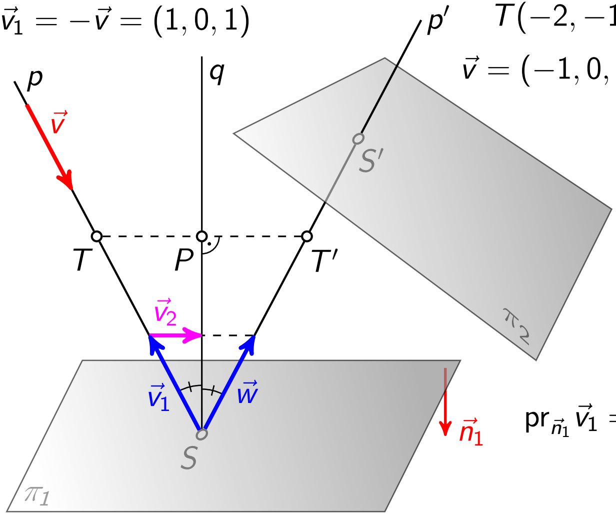
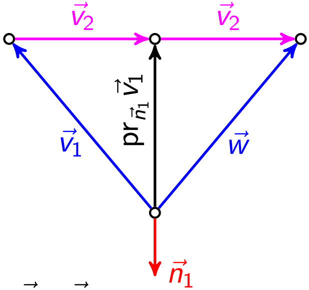
$$\vec{v}_1 \cdot \vec{n}_1 = (1, 0, 1) \cdot (1, 1, -2) = 1 \cdot 1$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1) \qquad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1) \qquad S(-7, -1, -4)$





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$\vec{v}_1 \cdot \vec{n}_1 = (1, 0, 1) \cdot (1, 1, -2) = 1 \cdot 1 + 0 \cdot 1$

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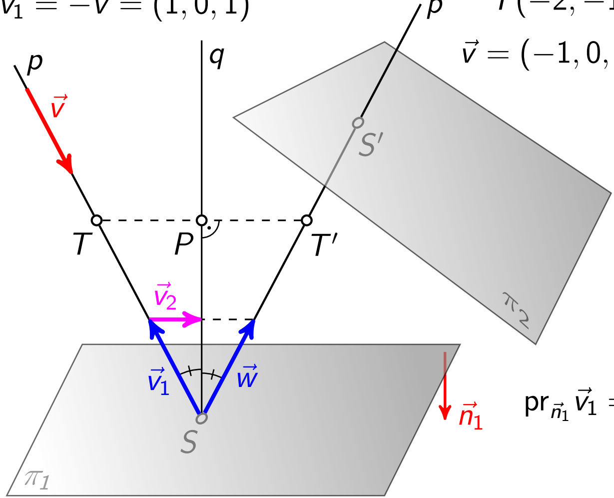

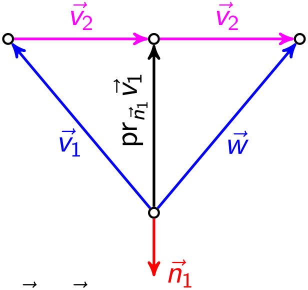

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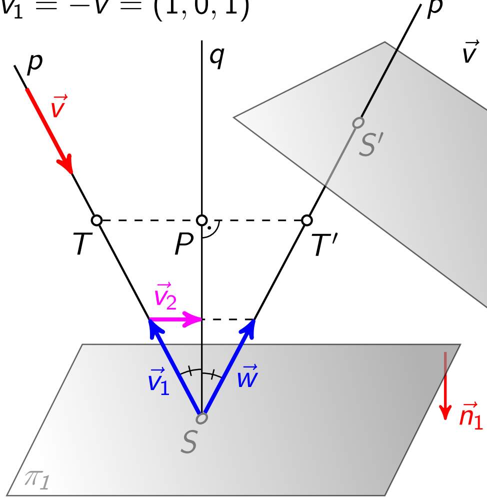

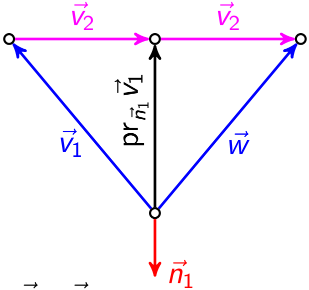

$$\mathrm{pr}_{\vec{n}_1}\vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2}\vec{n}_1$$

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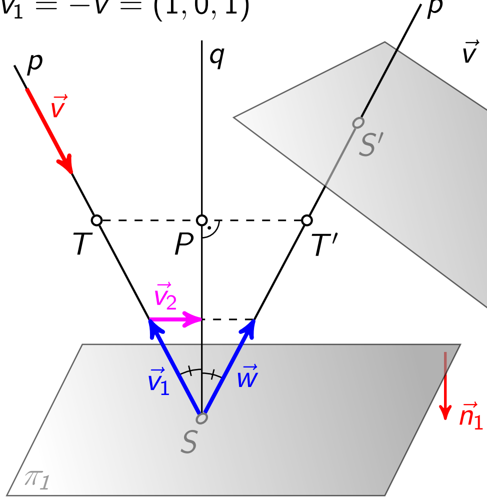

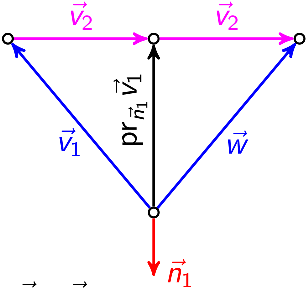

$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2} \vec{n}_1$$

$|\vec{n}_1| =$

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$T(-2, -1, 1) \qquad \vec{n}_1 = (1, 1, -2)$

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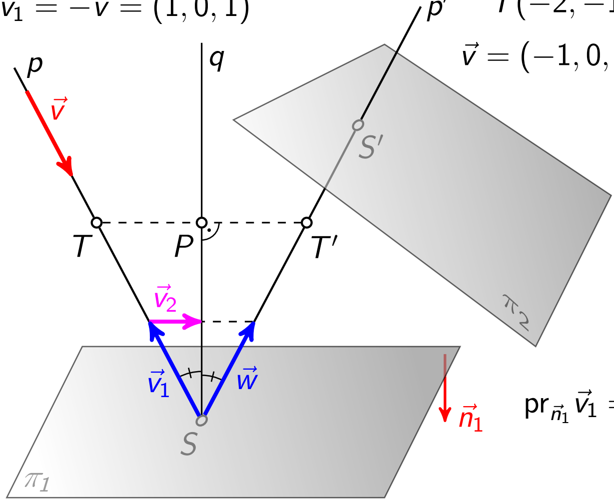

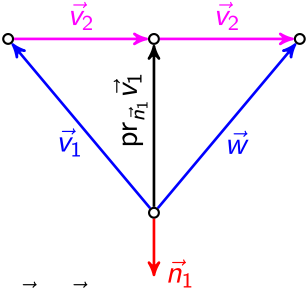

$$\text{pr}_{\vec{n}_1} \vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2} \vec{n}_1$$

$$|\vec{n}_1| = \sqrt{1^2 + 1^2 + (-2)^2}$$

$$\vec{v}_1 \cdot \vec{n}_1 = (1, 0, 1) \cdot (1, 1, -2) = 1 \cdot 1 + 0 \cdot 1 + 1 \cdot (-2) = -1$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\vec{n}_1 = (1, 1, -2)$

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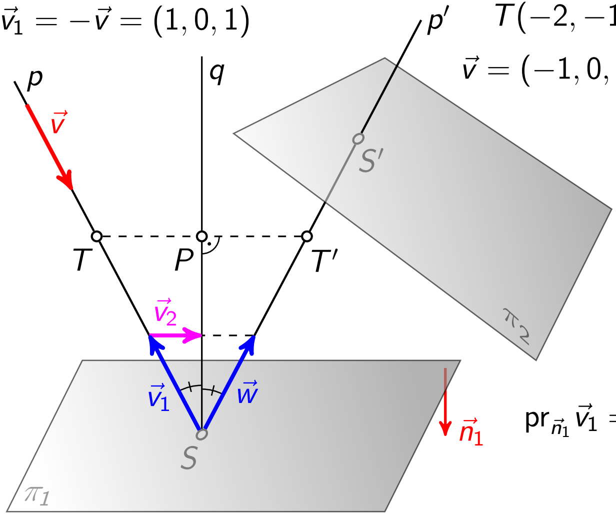

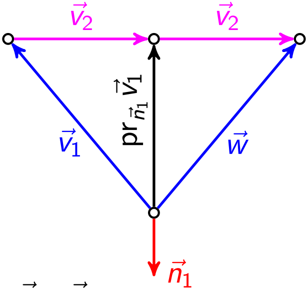

$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2} \vec{n}_1$$

$$|\vec{n}_1| = \sqrt{1^2 + 1^2 + (-2)^2} = \sqrt{6}$$

$$\vec{v}_1 \cdot \vec{n}_1 = (1, 0, 1) \cdot (1, 1, -2) = 1 \cdot 1 + 0 \cdot 1 + 1 \cdot (-2) = -1$$

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$T(-2, -1, 1) \qquad \vec{n}_1 = (1, 1, -2)$

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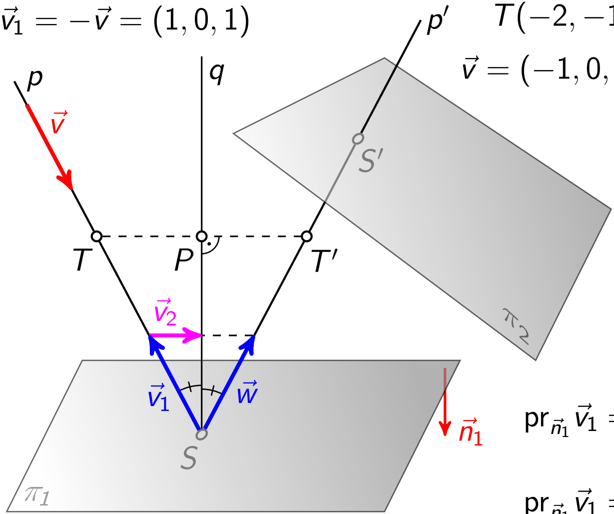

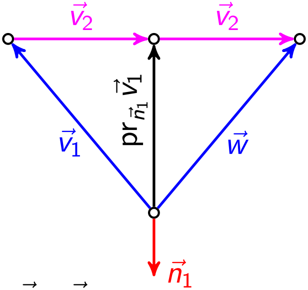

$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2} \vec{n}_1$$

$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 =$$

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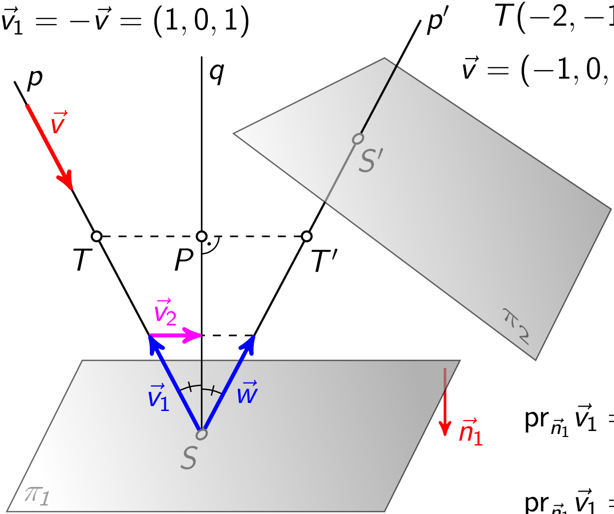
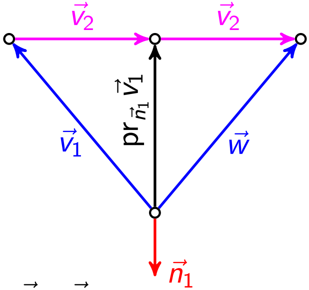




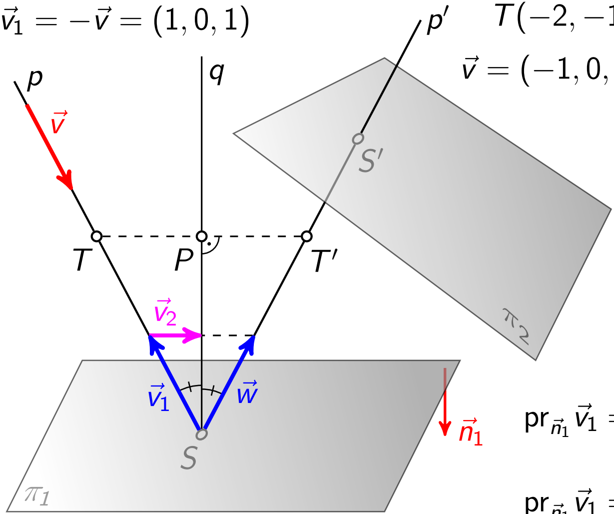
$$\mathrm{pr}_{\vec{n}_1}\vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2}\vec{n}_1$$

$$\mathrm{pr}_{\vec{n}_1}\vec{v}_1 = \frac{-1}{\sqrt{6}^{\,2}}$$

$$|\vec{n}_1| = \sqrt{1^2 + 1^2 + (-2)^2} = \sqrt{6}$$

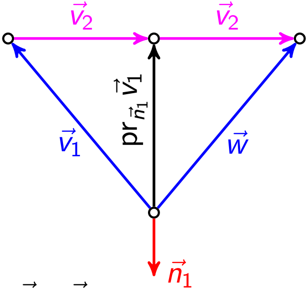
$$\vec{v}_1 \cdot \vec{n}_1 = (1, 0, 1) \cdot (1, 1, -2) = 1 \cdot 1 + 0 \cdot 1 + 1 \cdot (-2) = -1$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$



$T(-2, -1, 1)$ $\quad$ $\vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad$ $S(-7, -1, -4)$



$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2} \vec{n}_1$$

$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \frac{-1}{\sqrt{6}^{\,2}} (1, 1, -2)$$

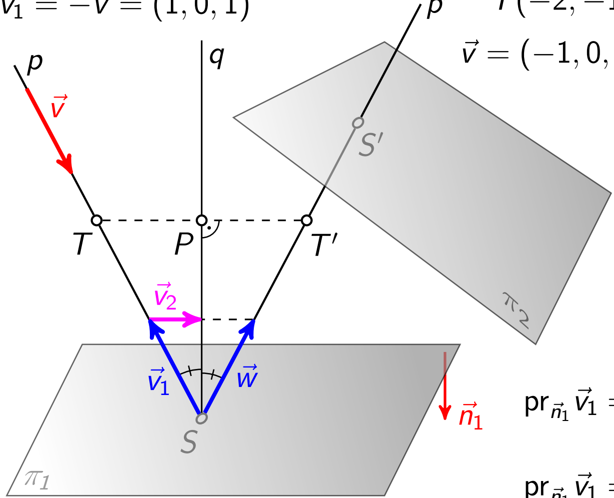
$$|\vec{n}_1| = \sqrt{1^2 + 1^2 + (-2)^2} = \sqrt{6}$$

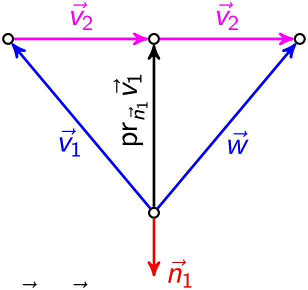
$$\vec{v}_1 \cdot \vec{n}_1 = (1, 0, 1) \cdot (1, 1, -2) = 1 \cdot 1 + 0 \cdot 1 + 1 \cdot (-2) = -1$$

$$\vec v_1 = -\vec v = (1,0,1)$$

$T(-2,-1,1)$ $\quad \vec n_1 = (1,1,-2)$

$\vec v = (-1,0,-1)$ $\quad S(-7,-1,-4)$





$$\mathrm{pr}_{\vec n_1}\vec v_1 = \frac{\vec v_1 \cdot \vec n_1}{|\vec n_1|^2}\vec n_1$$

$$\mathrm{pr}_{\vec n_1}\vec v_1 = \frac{-1}{\sqrt{6}^{\,2}}(1,1,-2)$$

$$\mathrm{pr}_{\vec n_1}\vec v_1 =$$

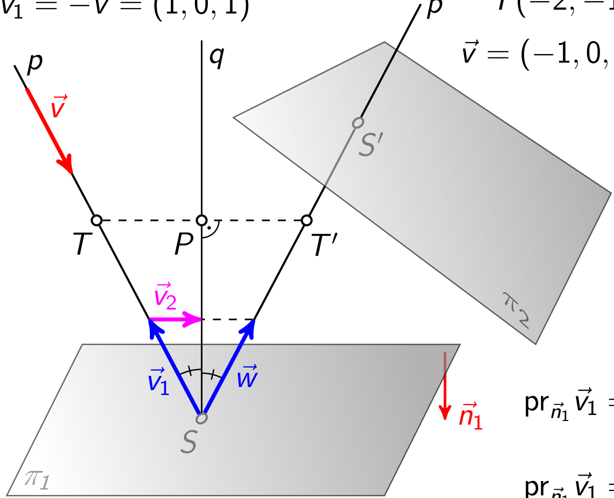
$$|\vec n_1| = \sqrt{1^2 + 1^2 + (-2)^2} = \sqrt{6}$$

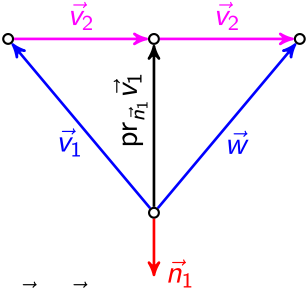
$$\vec v_1 \cdot \vec n_1 = (1,0,1)\cdot(1,1,-2) = 1\cdot 1 + 0\cdot 1 + 1\cdot(-2) = -1$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1) \qquad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1) \qquad S(-7, -1, -4)$





$$\operatorname{pr}_{\vec{n}_1} \vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2} \vec{n}_1$$

$$\operatorname{pr}_{\vec{n}_1} \vec{v}_1 = \frac{-1}{\sqrt{6}^{\,2}} (1, 1, -2)$$

$$\operatorname{pr}_{\vec{n}_1} \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

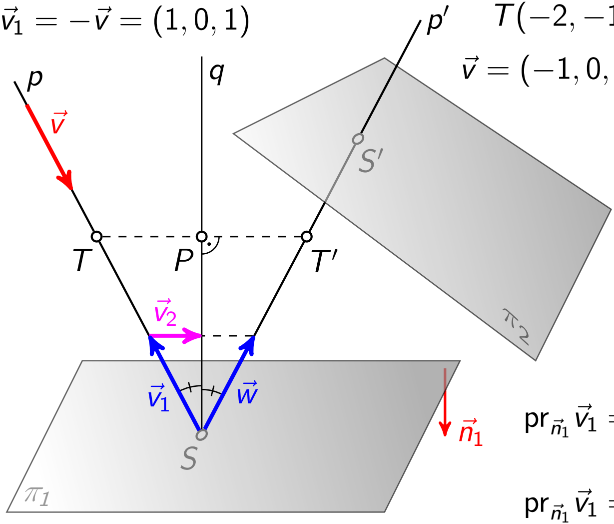
$$|\vec{n}_1| = \sqrt{1^2 + 1^2 + (-2)^2} = \sqrt{6}$$

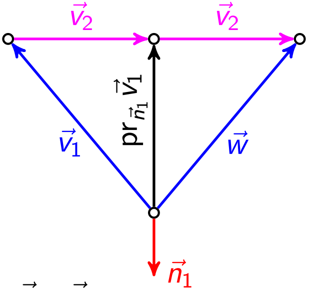
$$\vec{v}_1 \cdot \vec{n}_1 = (1, 0, 1) \cdot (1, 1, -2) = 1 \cdot 1 + 0 \cdot 1 + 1 \cdot (-2) = -1$$

$\vec{v}_1 = -\vec{v} = (1,0,1)$

$T(-2,-1,1) \qquad \vec{n}_1 = (1,1,-2)$

$\vec{v} = (-1,0,-1) \qquad S(-7,-1,-4)$





$$\mathrm{pr}_{\vec{n}_1}\vec{v}_1 = \frac{\vec{v}_1 \cdot \vec{n}_1}{|\vec{n}_1|^2}\vec{n}_1$$

$$\mathrm{pr}_{\vec{n}_1}\vec{v}_1 = \frac{-1}{\sqrt{6}^{\,2}}(1,1,-2)$$

$$\boxed{\mathrm{pr}_{\vec{n}_1}\vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)}$$

$$|\vec{n}_1| = \sqrt{1^2 + 1^2 + (-2)^2} = \sqrt{6}$$

$$\vec{v}_1 \cdot \vec{n}_1 = (1,0,1) \cdot (1,1,-2) = 1 \cdot 1 + 0 \cdot 1 + 1 \cdot (-2) = -1$$

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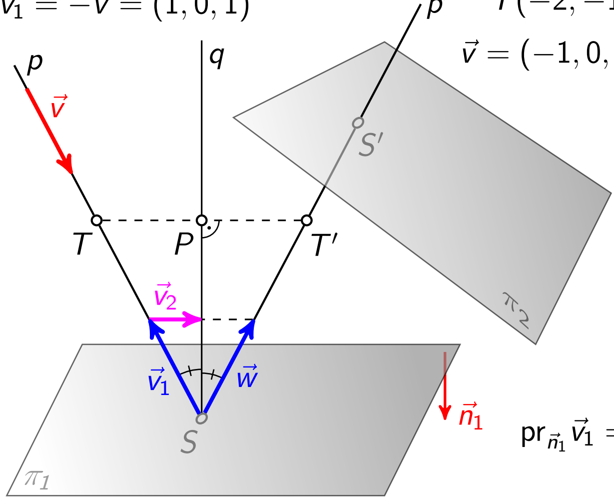
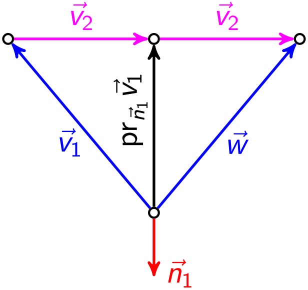
$T(-2, -1, 1)$ $\vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $S(-7, -1, -4)$





$$\text{pr}_{\vec{n}_1} \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad$ $\vec{n}_1 = (1, 1, -2)$

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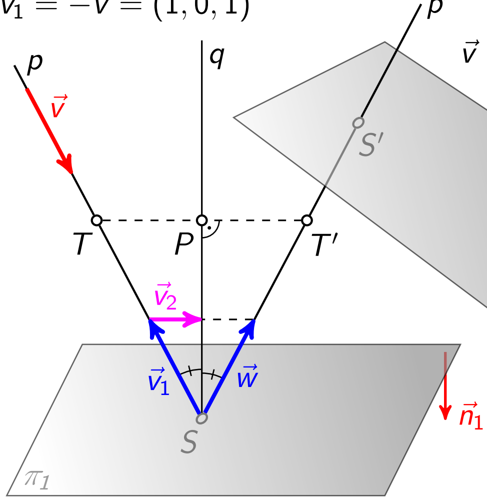
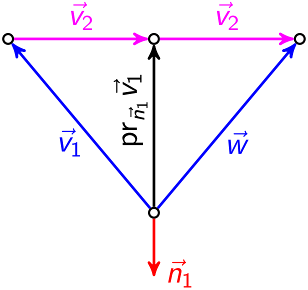




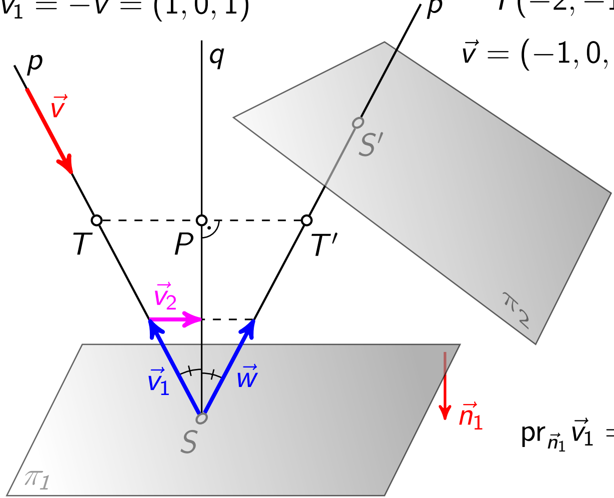
$$\mathrm{pr}_{\vec{n}_1}\vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

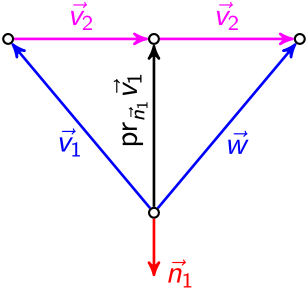
$$\vec{v}_2 = \mathrm{pr}_{\vec{n}_1}\vec{v}_1 - \vec{v}_1$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad S(-7, -1, -4)$





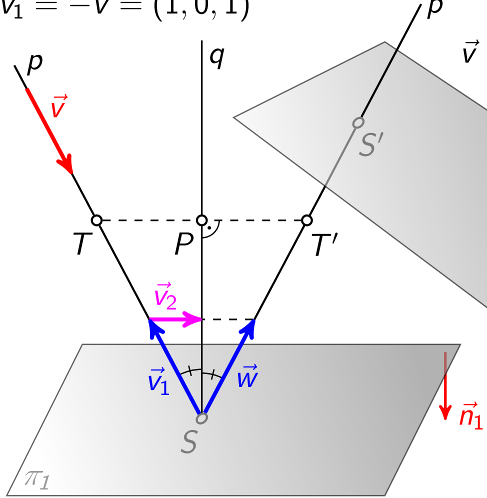
$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

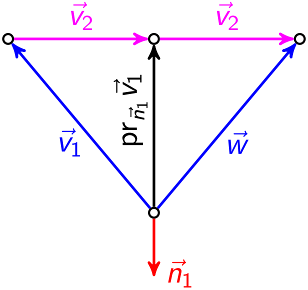
$$\vec{v}_2 = \mathrm{pr}_{\vec{n}_1} \vec{v}_1 - \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad$ $\vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad$ $S(-7, -1, -4)$





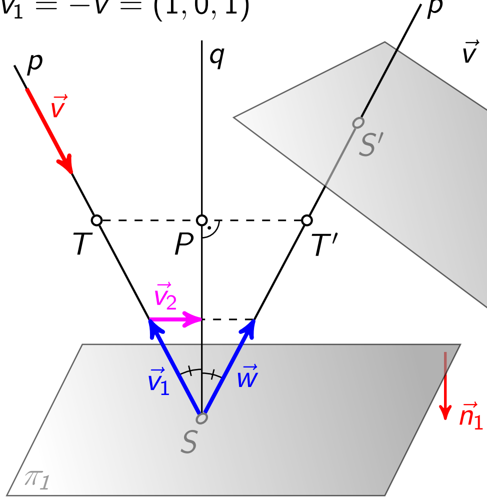
$$\mathrm{pr}_{\vec{n}_1}\vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

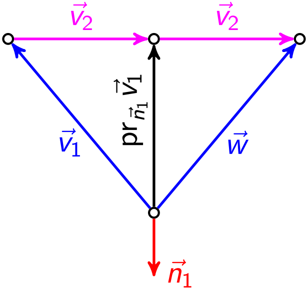
$$\vec{v}_2 = \mathrm{pr}_{\vec{n}_1}\vec{v}_1 - \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right) -$$

$$\vec{v}_1 = -\vec{v} = (1, 0, 1)$$

$$T(-2, -1, 1) \qquad \vec{n}_1 = (1, 1, -2)$$

$$\vec{v} = (-1, 0, -1) \qquad S(-7, -1, -4)$$





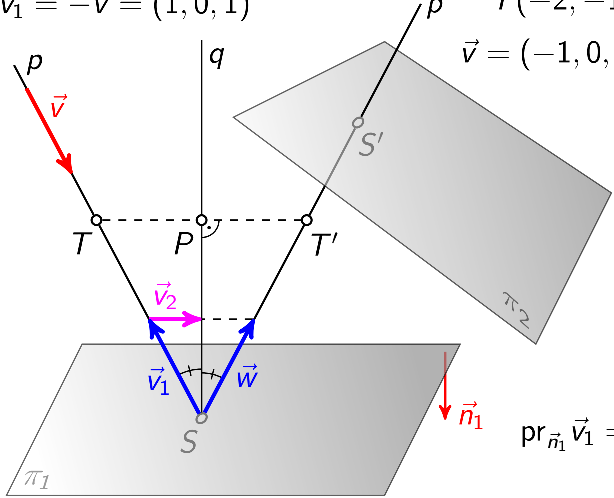
$$\mathrm{pr}_{\vec{n}_1}\vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

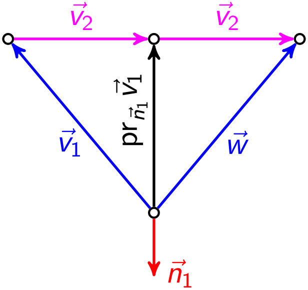
$$\vec{v}_2 = \mathrm{pr}_{\vec{n}_1}\vec{v}_1 - \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right) - (1, 0, 1)$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad S(-7, -1, -4)$





$$\operatorname{pr}_{\vec{n}_1}\vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

$$\vec{v}_2 = \operatorname{pr}_{\vec{n}_1}\vec{v}_1 - \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right) - (1, 0, 1) = \left(-\frac{7}{6}, -\frac{1}{6}, -\frac{2}{3}\right)$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad \vec{n}_1 = (1, 1, -2)$

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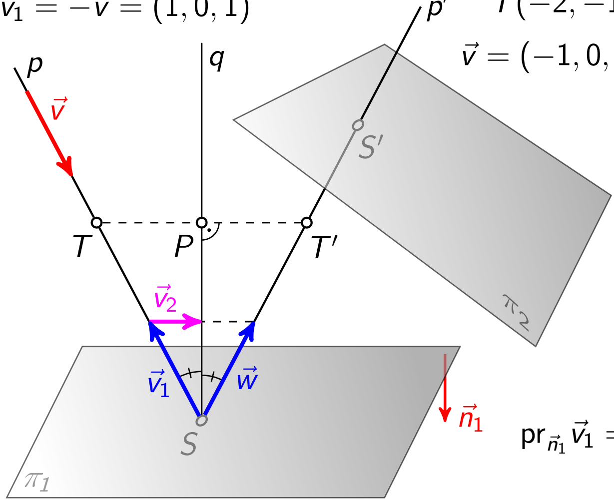
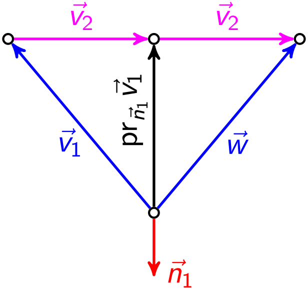




$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

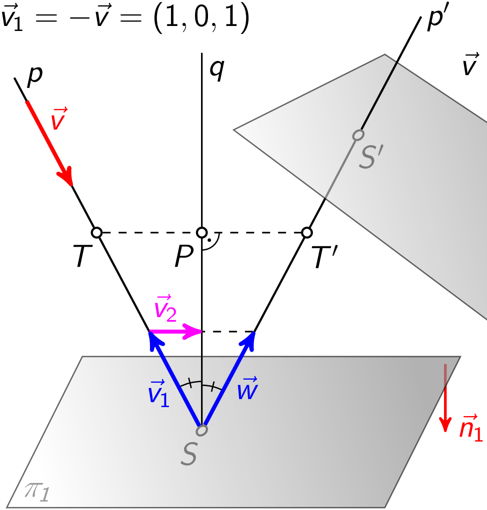
$$\vec{v}_2 = \mathrm{pr}_{\vec{n}_1} \vec{v}_1 - \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right) - (1, 0, 1) = \left(-\frac{7}{6}, -\frac{1}{6}, -\frac{2}{3}\right)$$

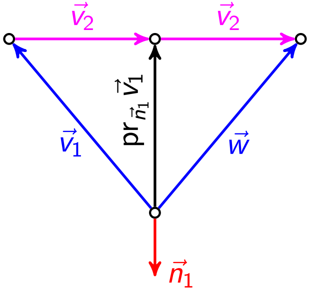
$$\vec{w} = \vec{v}_1 + 2\vec{v}_2$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad S(-7, -1, -4)$





$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

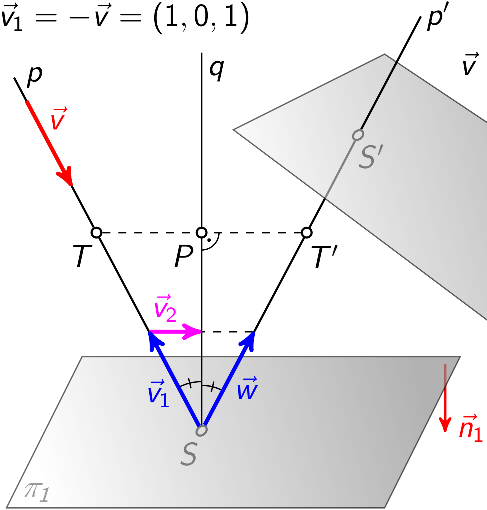
$$\vec{v}_2 = \mathrm{pr}_{\vec{n}_1} \vec{v}_1 - \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right) - (1, 0, 1) = \left(-\frac{7}{6}, -\frac{1}{6}, -\frac{2}{3}\right)$$

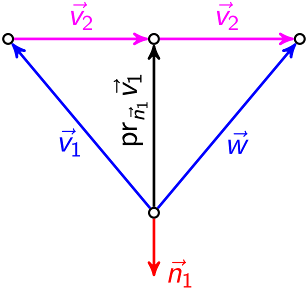
$$\vec{w} = \vec{v}_1 + 2\vec{v}_2 = (1, 0, 1)$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad S(-7, -1, -4)$





$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

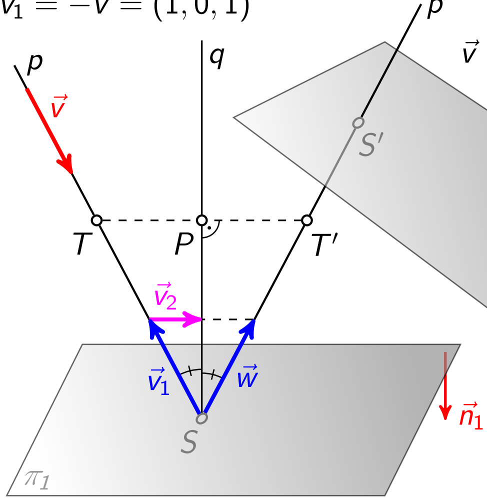
$$\vec{v}_2 = \mathrm{pr}_{\vec{n}_1} \vec{v}_1 - \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right) - (1, 0, 1) = \left(-\frac{7}{6}, -\frac{1}{6}, -\frac{2}{3}\right)$$

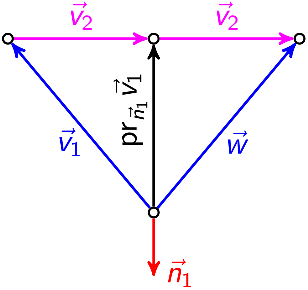
$$\vec{w} = \vec{v}_1 + 2\vec{v}_2 = (1, 0, 1) +$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1) \qquad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1) \qquad S(-7, -1, -4)$





$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

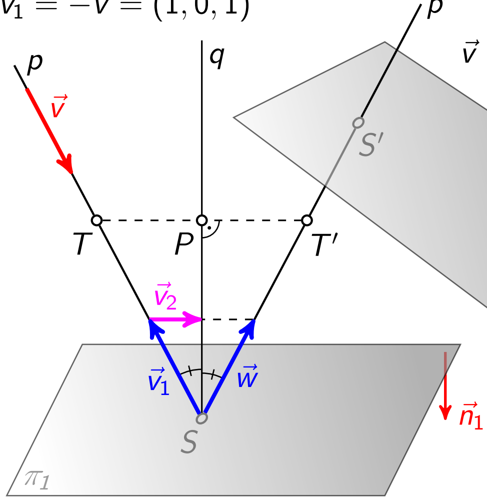
$$\vec{v}_2 = \mathrm{pr}_{\vec{n}_1} \vec{v}_1 - \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right) - (1, 0, 1) = \left(-\frac{7}{6}, -\frac{1}{6}, -\frac{2}{3}\right)$$

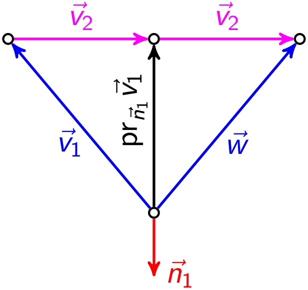
$$\vec{w} = \vec{v}_1 + 2\vec{v}_2 = (1, 0, 1) + \left(-\frac{7}{3}, -\frac{1}{3}, -\frac{4}{3}\right)$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1) \qquad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1) \qquad S(-7, -1, -4)$





$$\mathrm{pr}_{\vec{n}_1} \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right)$$

$$\vec{v}_2 = \mathrm{pr}_{\vec{n}_1} \vec{v}_1 - \vec{v}_1 = \left(-\frac{1}{6}, -\frac{1}{6}, \frac{1}{3}\right) - (1, 0, 1) = \left(-\frac{7}{6}, -\frac{1}{6}, -\frac{2}{3}\right)$$

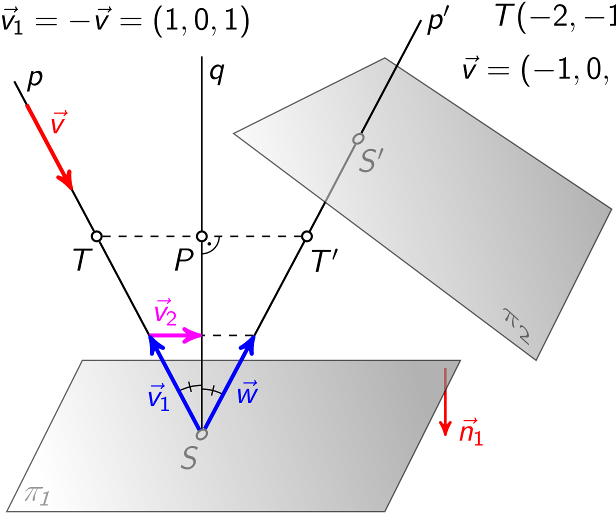
$$\vec{w} = \vec{v}_1 + 2\vec{v}_2 = (1, 0, 1) + \left(-\frac{7}{3}, -\frac{1}{3}, -\frac{4}{3}\right) = \left(-\frac{4}{3}, -\frac{1}{3}, -\frac{1}{3}\right)$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad S(-7, -1, -4)$

$\vec{w} = \left(-\frac{4}{3}, -\frac{1}{3}, -\frac{1}{3}\right)$



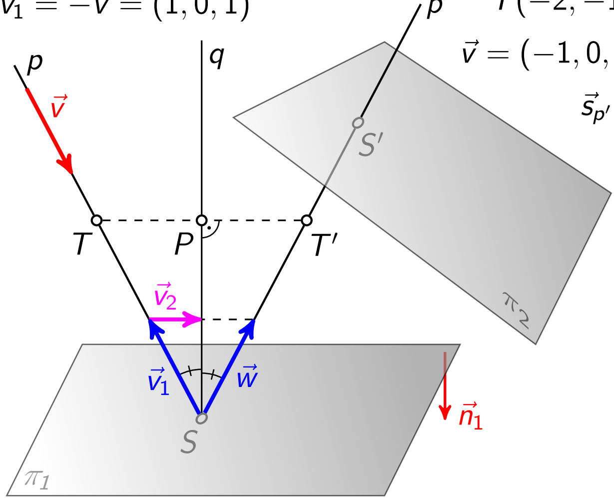
$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad$ $\vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad$ $S(-7, -1, -4)$

$\vec{s}_{p'} = 3\vec{w}$

$$\vec{w} = \left(-\frac{4}{3}, -\frac{1}{3}, -\frac{1}{3}\right)$$



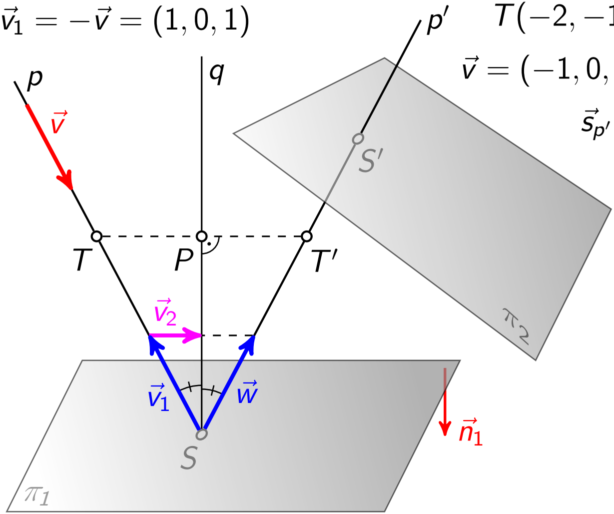
$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1) \qquad \vec{n}_1 = (1, 1, -2)$

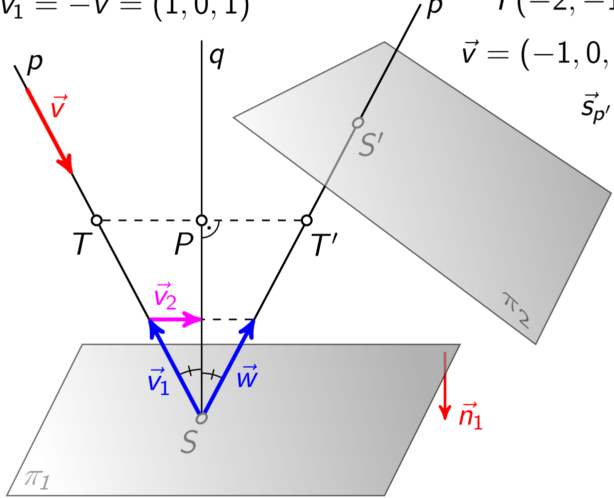
$\vec{v} = (-1, 0, -1) \qquad S(-7, -1, -4)$

$\vec{s}_{p'} = 3\vec{w} = (-4, -1, -1)$

$\vec{w} = \left(-\frac{4}{3}, -\frac{1}{3}, -\frac{1}{3}\right)$



$\vec{v}_1 = -\vec{v} = (1, 0, 1)$



$T(-2, -1, 1)$ $\quad$ $\vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad$ $S(-7, -1, -4)$

$$\vec{s}_{p'} = 3\vec{w} = (-4, -1, -1)$$

$$\vec{w} = \left(-\frac{4}{3}, -\frac{1}{3}, -\frac{1}{3}\right)$$

Kod skaliranja vektora smjera zrake moramo sačuvati orijentaciju vektora.

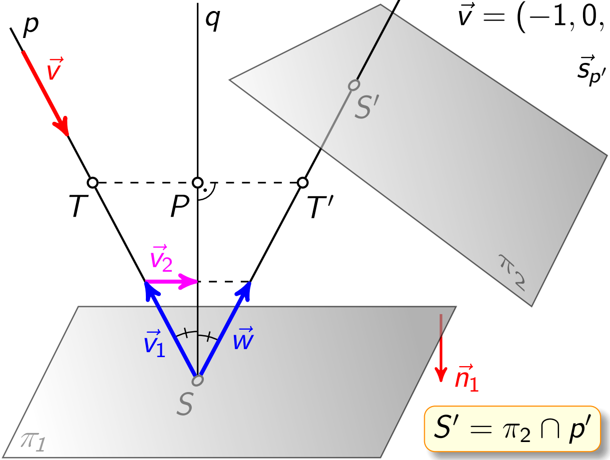
$\vec{v}_1 = -\vec{v} = (1, 0, 1)$

$T(-2, -1, 1)$ $\quad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad S(-7, -1, -4)$

$\vec{s}_{p'} = 3\vec{w} = (-4, -1, -1)$

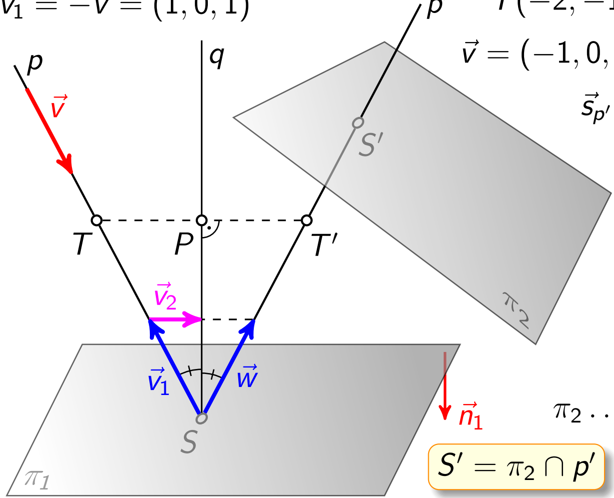
$$\vec{w} = \left(-\frac{4}{3}, -\frac{1}{3}, -\frac{1}{3}\right)$$



Kod skaliranja vektora smjera zrake moramo sačuvati orijentaciju vektora.

$S' = \pi_2 \cap p'$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$



$T(-2, -1, 1) \qquad \vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1) \qquad S(-7, -1, -4)$

$\vec{s}_{p'} = 3\vec{w} = (-4, -1, -1)$

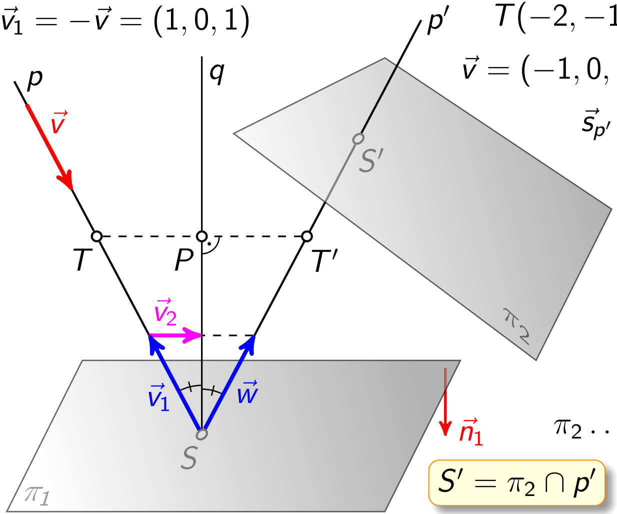
$$\vec{w} = \left(-\frac{4}{3}, -\frac{1}{3}, -\frac{1}{3}\right)$$

Kod skaliranja vektora smjera zrake moramo sačuvati orijentaciju vektora.

$\pi_2 \ldots x + y + z + 18 = 0$

$\boxed{S' = \pi_2 \cap p'}$

$$\vec{v}_1 = -\vec{v} = (1, 0, 1)$$



$T(-2, -1, 1)$ $\quad$ $\vec{n}_1 = (1, 1, -2)$

$\vec{v} = (-1, 0, -1)$ $\quad$ $S(-7, -1, -4)$

$$\vec{s}_{p'} = 3\vec{w} = (-4, -1, -1)$$

$$\vec{w} = \left(-\frac{4}{3}, -\frac{1}{3}, -\frac{1}{3}\right)$$

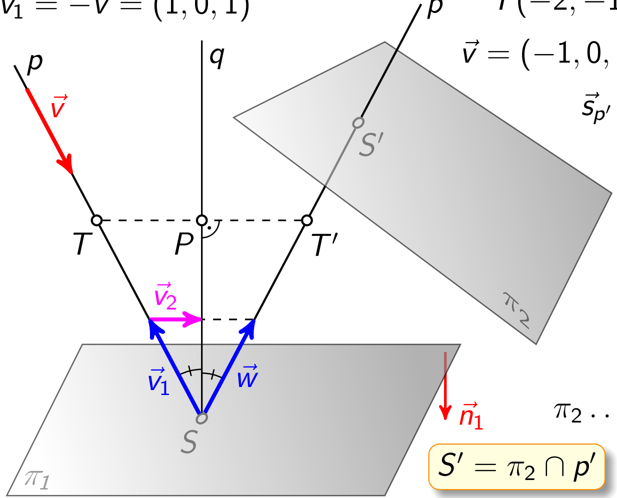
Kod skaliranja vektora smjera zrake moramo sačuvati orijentaciju vektora.

$$\pi_2 \ldots x + y + z + 18 = 0$$

$$S' = \pi_2 \cap p'$$

$$p' \ldots \left\{ \begin{array}{l} \\ \\ \end{array} \right.$$

$$\vec{v}_1 = -\vec{v} = (1, 0, 1)$$



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Kod skaliranja vektora smjera zrake moramo sačuvati orijentaciju vektora.

$$\pi_2 \ldots x + y + z + 18 = 0$$

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$$p' \ldots \begin{cases} x = -7 - 4t \\ \\ \\ \end{cases}$$

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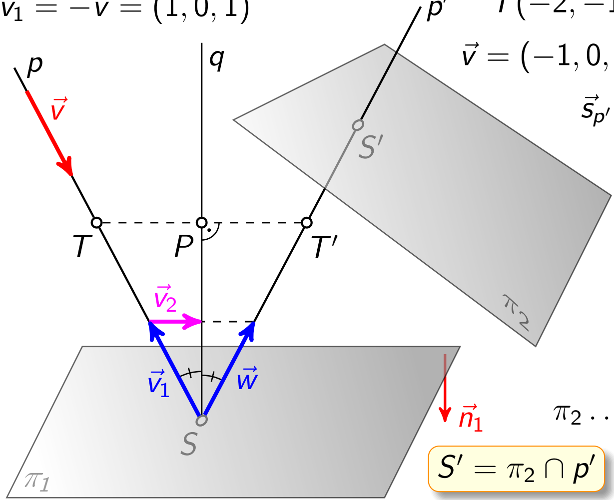

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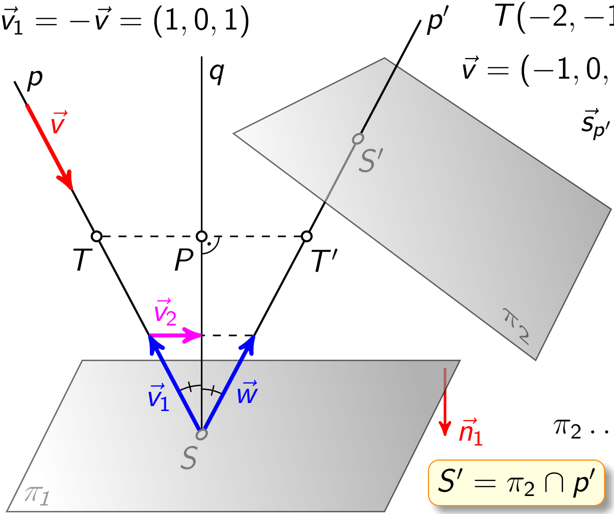

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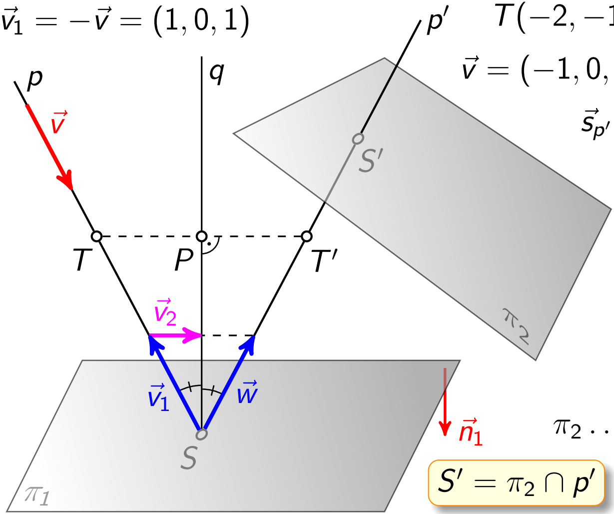

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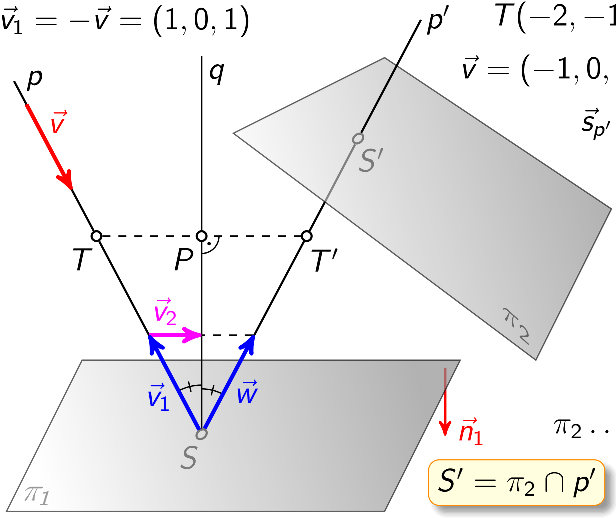

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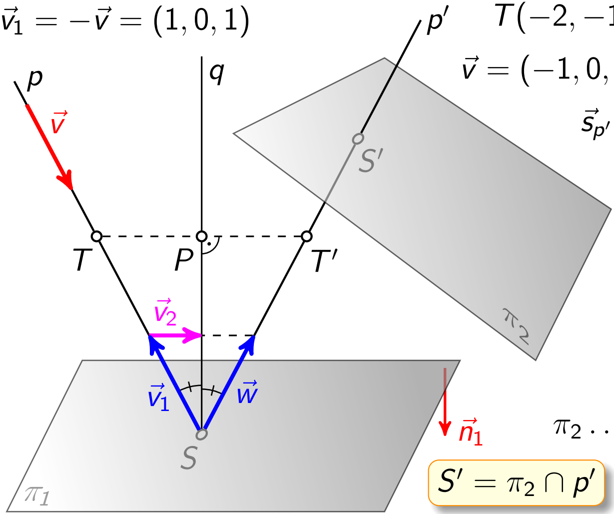

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$(-7 - 4t)$

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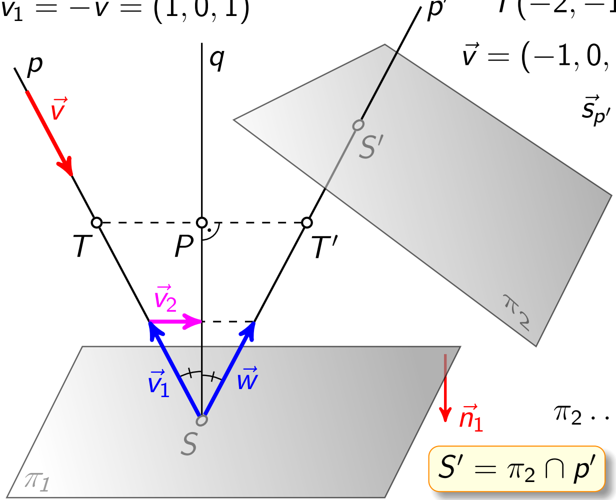

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Kod skaliranja vektora smjera zrake moramo sačuvati orijentaciju vektora.

$$\pi_2 \ldots \; x + y + z + 18 = 0$$

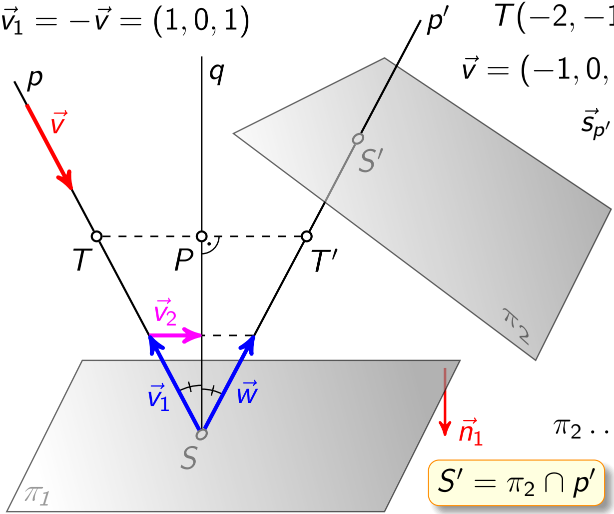
$$S' = \pi_2 \cap p'$$

$$p' \ldots \begin{cases} x = -7 - 4t \\ y = -1 - t \\ z = -4 - t \end{cases}$$

$$x + y + z + 18 = 0$$

$$(-7 - 4t) + (-1 - t)$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$



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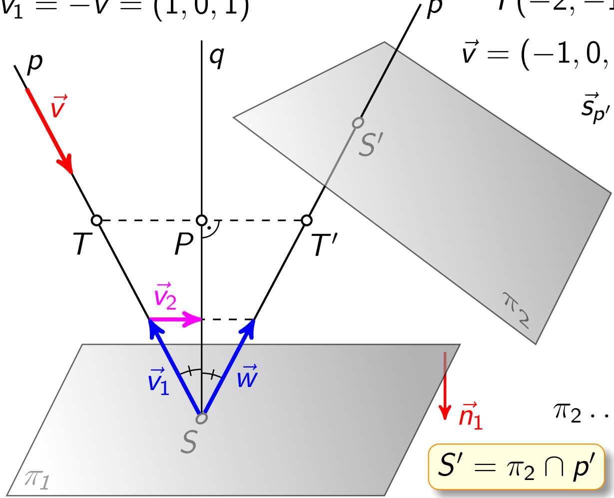

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$$(-7 - 4t) + (-1 - t) + (-4 - t) + 18$$

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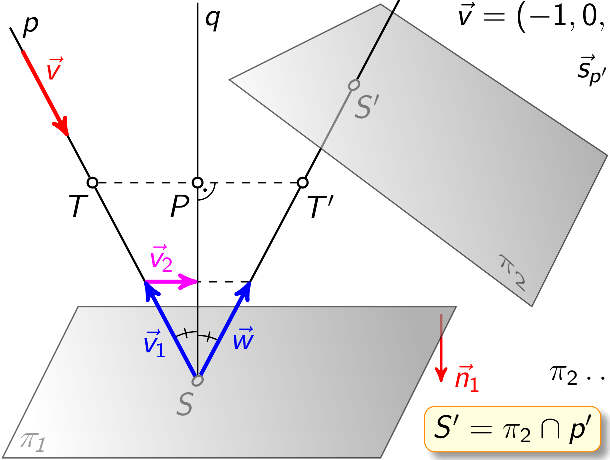

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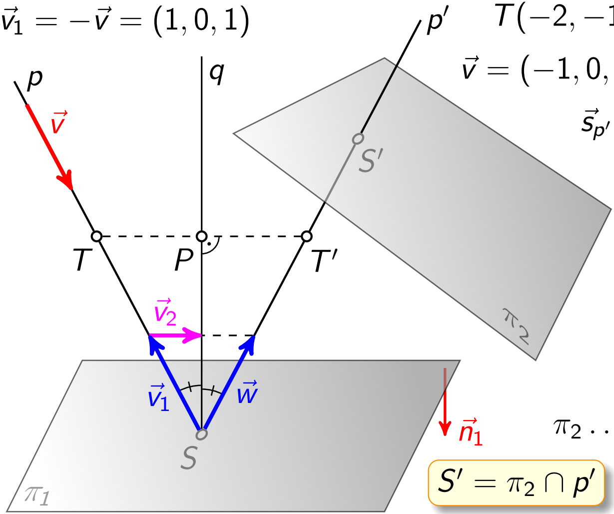

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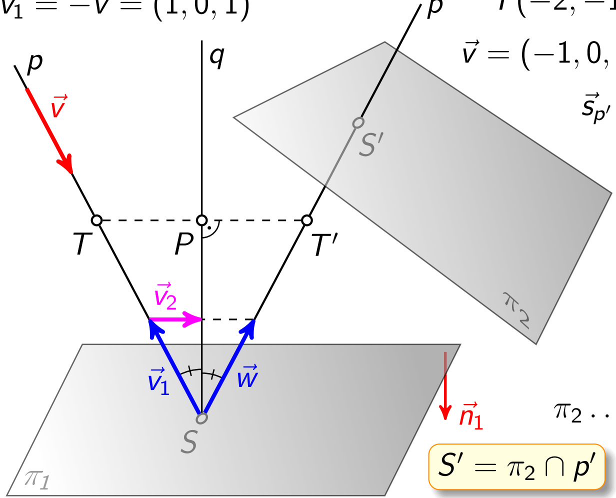
$$x + y + z + 18 = 0$$

$$(-7 - 4t) + (-1 - t) + (-4 - t) + 18 = 0$$

$$-6t + 6 = 0$$

$\vec{v}_1 = -\vec{v} = (1, 0, 1)$



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$$x + y + z + 18 = 0$$
$$(-7 - 4t) + (-1 - t) + (-4 - t) + 18 = 0$$
$$-6t + 6 = 0$$
$$t = 1$$

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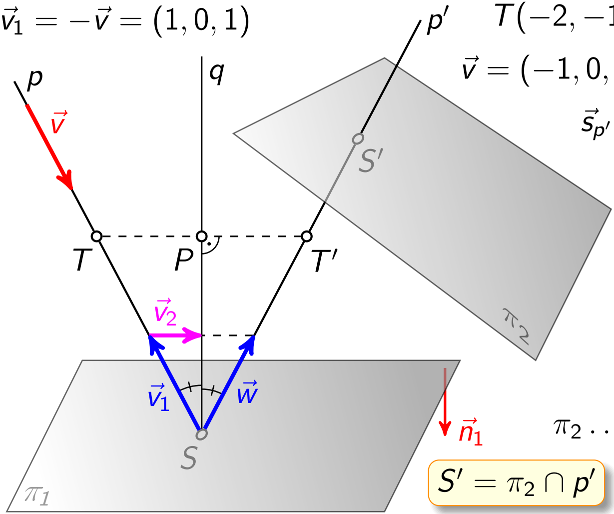

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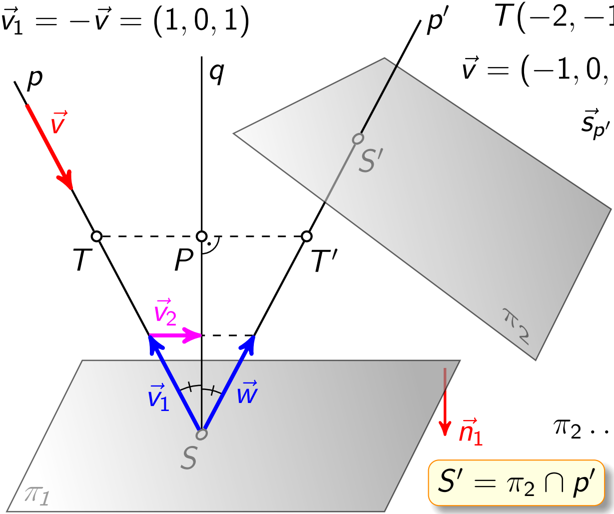

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$$\boxed{t = 1}$$

$$S'(-11, -2, -5)$$

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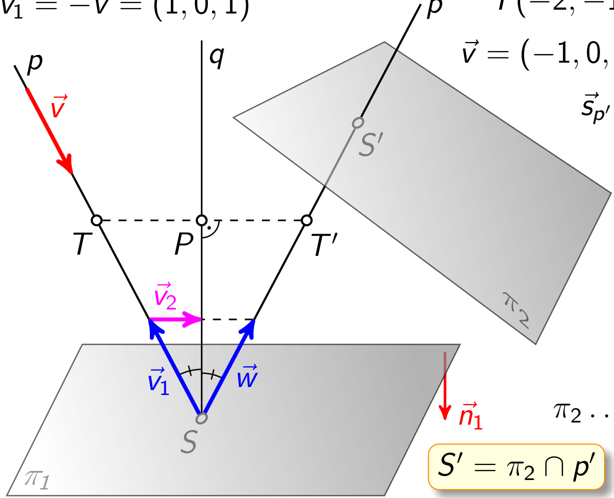

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$$(-7 - 4t) + (-1 - t) + (-4 - t) + 18 = 0$$

$$-6t + 6 = 0$$

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$$\boxed{S'(-11, -2, -5)}$$