Seminari 11

Matematičke metode za informatičare

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Sadržaj

prvi zadatak

Zadatak 1

Primjenom Euklidovog algoritma ispitajte može li se skratiti razlomak

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}.$$

Ukoliko se može, skratite ga.

Rješenje $$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$\left(x^4 + x^3 - x^2 + x - 2\right)$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^4 + x^3 - 3x^2 - x + 2\right)$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^4 + x^3 - 3x^2 - x + 2\right) =$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^4 + x^3 - 3x^2 - x + 2\right) = 1$$

$$- 2$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$\begin{aligned}\big(x^4 + x^3 - x^2 &+ x - 2\big) : \big(x^4 + x^3 - 3x^2 - x + 2\big) = 1\\ &+ x - 2\end{aligned}$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$\begin{array}{l}\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^4 + x^3 - 3x^2 - x + 2\right) = 1 \\ \qquad\qquad\quad +3x^2 + x - 2\end{array}$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$\begin{aligned}&\big(x^4 + x^3 - x^2 + x - 2\big) : \big(x^4 + x^3 - 3x^2 - x + 2\big) = 1\\ &\quad - x^3 + 3x^2 + x - 2\end{aligned}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{aligned}&\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1\\ -&x^4-x^3+3x^2+x-2\end{aligned}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$
\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \\
\underline{-x^4-x^3+3x^2+x-2}
\end{array}
$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$
\begin{array}{l}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^4 + x^3 - 3x^2 - x + 2\right) = 1 \\
\underline{-x^4 - x^3 + 3x^2 + x - 2} \\
\qquad\qquad 2x^2
\end{array}
$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \\
\underline{-x^4-x^3+3x^2+x-2} \\
\qquad\qquad 2x^2+2x
\end{array}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l} \left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \\ \underline{-x^4-x^3+3x^2+x-2} \\ \qquad\qquad\qquad 2x^2+2x-4 \end{array}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$
\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1}\\
\underline{-x^4-x^3+3x^2+x-2}\\
\qquad\qquad\quad 2x^2+2x-4
\end{array}
$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$
\begin{array}{l}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^4 + x^3 - 3x^2 - x + 2\right) = 1 \longleftarrow \boxed{Q_1} \\
\underline{-x^4 - x^3 + 3x^2 + x - 2} \\
\qquad\qquad 2x^2 + 2x - 4 \longleftarrow \boxed{R_1}
\end{array}
$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$
\begin{array}{l}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^4 + x^3 - 3x^2 - x + 2\right) = 1 \longleftarrow \boxed{Q_1} \\
\underline{-x^4 - x^3 + 3x^2 + x - 2} \\
\qquad\qquad 2x^2 + 2x - 4 \longleftarrow \boxed{R_1}
\end{array}
$$

$$\left(x^4 + x^3 - 3x^2 - x + 2\right)$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$
\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1}\\
\underline{-x^4-x^3+3x^2+x-2}\\
\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}
$$

$$\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1}\\
\underline{-x^4-x^3+3x^2+x-2}\\
\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}$$

$$\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l} \left(x^4+x^3-x^2+x-2\right) : \left(x^4+x^3-3x^2-x+2\right) = 1 \longleftarrow \boxed{Q_1} \\ \underline{-x^4-x^3+3x^2+x-2} \\ \qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1} \end{array}$$

$$\left(x^4+x^3-3x^2-x+2\right) : \left(2x^2+2x-4\right) = \frac{1}{2}x^2$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l} \big(x^4+x^3-x^2+x-2\big):\big(x^4+x^3-3x^2-x+2\big)=1 \longleftarrow \boxed{Q_1} \\ \underline{-x^4-x^3+3x^2+x-2} \\ \qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1} \end{array}$$

$$\begin{array}{l} \big(x^4+x^3-3x^2-x+2\big):\big(2x^2+2x-4\big)=\frac{1}{2}x^2 \\ \qquad\qquad +2x^2 \end{array}$$

Rješenje $\dfrac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$

$$
\begin{array}{l}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^4 + x^3 - 3x^2 - x + 2\right) = 1 \longleftarrow \boxed{Q_1} \\
\underline{-x^4 - x^3 + 3x^2 + x - 2} \\
\qquad\qquad 2x^2 + 2x - 4 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(x^4 + x^3 - 3x^2 - x + 2\right) : \left(2x^2 + 2x - 4\right) = \frac{1}{2}x^2 \\
\quad - x^3 + 2x^2
\end{array}
$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \leftarrow \boxed{Q_1} \\
\underline{-x^4-x^3+3x^2+x-2} \\
\qquad\qquad 2x^2+2x-4 \leftarrow \boxed{R_1}
\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2 \\
-x^4-x^3+2x^2
\end{array}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

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\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1} \\
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\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2 \\
\underline{-x^4-x^3+2x^2\qquad\qquad}
\end{array}
$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1}\\
\underline{-x^4-x^3+3x^2+x-2}\\
\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2\\
\underline{-x^4-x^3+2x^2}\\
\qquad\qquad -x^2
\end{array}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$
\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1} \\
\underline{-x^4-x^3+3x^2+x-2} \\
\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2 \\
\underline{-x^4-x^3+2x^2} \\
\qquad\qquad -x^2-x
\end{array}
$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$
\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right) : \left(x^4+x^3-3x^2-x+2\right) = 1 \longleftarrow \boxed{Q_1} \\
\underline{-x^4-x^3+3x^2+x-2} \\
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$$

$$
\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right) : \left(2x^2+2x-4\right) = \frac{1}{2}x^2 \\
\underline{-x^4-x^3+2x^2\qquad\qquad} \\
\qquad\qquad -x^2-x+2
\end{array}
$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
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\qquad\qquad\quad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2-\frac{1}{2}\\
\underline{-x^4-x^3+2x^2\qquad\qquad}\\
\qquad\qquad -x^2-x+2
\end{array}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l} \left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1} \\ \underline{-x^4-x^3+3x^2+x-2} \\ \qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1} \end{array}$$

$$\begin{array}{l} \left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2-\frac{1}{2} \\ \underline{-x^4-x^3+2x^2 \qquad\qquad} \\ \qquad\qquad -x^2-x+2 \\ \qquad\qquad\qquad -2 \end{array}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1}\\
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\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2-\frac{1}{2}\\
\underline{-x^4-x^3+2x^2}\\
\qquad\qquad -x^2-x+2\\
\qquad\qquad\qquad +x-2
\end{array}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1}\\
\underline{-x^4-x^3+3x^2+x-2}\\
\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2-\frac{1}{2}\\
\underline{-x^4-x^3+2x^2}\\
\qquad\qquad -x^2-x+2\\
\qquad\qquad\ \ x^2+x-2
\end{array}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1}\\
\underline{-x^4-x^3+3x^2+x-2}\\
\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2-\frac{1}{2}\\
\underline{-x^4-x^3+2x^2}\\
\qquad\qquad -x^2-x+2\\
\qquad\qquad \underline{x^2+x-2}
\end{array}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$
\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right) : \left(x^4+x^3-3x^2-x+2\right) = 1 \longleftarrow \boxed{Q_1} \\
\underline{-x^4-x^3+3x^2+x-2} \\
\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right) : \left(2x^2+2x-4\right) = \frac{1}{2}x^2-\frac{1}{2} \\
\underline{-x^4-x^3+2x^2} \\
\qquad\qquad -x^2-x+2 \\
\qquad\qquad \underline{x^2+x-2} \\
\qquad\qquad\qquad 0
\end{array}
$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$
\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1}\\
\underline{-x^4-x^3+3x^2+x-2}\\
\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2-\frac{1}{2} \longleftarrow \boxed{Q_2}\\
\underline{-x^4-x^3+2x^2}\\
\qquad\qquad -x^2-x+2\\
\qquad\qquad \underline{x^2+x-2}\\
\qquad\qquad\qquad 0
\end{array}
$$

Rješenje $$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1}\\
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\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2-\frac{1}{2} \longleftarrow \boxed{Q_2}\\
\underline{-x^4-x^3+2x^2}\\
\qquad\qquad -x^2-x+2\\
\qquad\qquad \underline{x^2+x-2}\\
\qquad\qquad\qquad 0 \longleftarrow \boxed{R_2}
\end{array}$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right) : \left(x^4+x^3-3x^2-x+2\right) = 1 \longleftarrow \boxed{Q_1} \\
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\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right) : \left(2x^2+2x-4\right) = \frac{1}{2}x^2-\frac{1}{2} \longleftarrow \boxed{Q_2} \\
\underline{-x^4-x^3+2x^2} \\
\qquad\qquad -x^2-x+2 \\
\qquad\qquad \underline{x^2+x-2} \\
\qquad\qquad\qquad 0 \longleftarrow \boxed{R_2}
\end{array}$$

$M($

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$
\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right) : \left(x^4+x^3-3x^2-x+2\right) = 1 \longleftarrow \boxed{Q_1} \\
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\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right) : \left(2x^2+2x-4\right) = \frac{1}{2}x^2-\frac{1}{2} \longleftarrow \boxed{Q_2} \\
\underline{-x^4-x^3+2x^2} \\
\qquad\qquad -x^2-x+2 \\
\qquad\qquad \underline{x^2+x-2} \\
\qquad\qquad\qquad 0 \longleftarrow \boxed{R_2}
\end{array}
$$

$M\big(x^4+x^3-x^2+x-2,$

Rješenje

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{array}{l}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^4 + x^3 - 3x^2 - x + 2\right) = 1 \longleftarrow \boxed{Q_1} \\
\underline{-x^4 - x^3 + 3x^2 + x - 2} \\
\qquad\qquad 2x^2 + 2x - 4 \longleftarrow \boxed{R_1}
\end{array}$$

$$\begin{array}{l}
\left(x^4 + x^3 - 3x^2 - x + 2\right) : \left(2x^2 + 2x - 4\right) = \frac{1}{2}x^2 - \frac{1}{2} \longleftarrow \boxed{Q_2} \\
\underline{-x^4 - x^3 + 2x^2} \\
\qquad\qquad -x^2 - x + 2 \\
\qquad\qquad \underline{x^2 + x - 2} \\
\qquad\qquad\qquad 0 \longleftarrow \boxed{R_2}
\end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right)$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1}\\
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\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2-\frac{1}{2} \longleftarrow \boxed{Q_2}\\
\underline{-x^4-x^3+2x^2\qquad\qquad}\\
\qquad\qquad -x^2-x+2\\
\qquad\qquad \underline{x^2+x-2}\\
\qquad\qquad\qquad 0 \longleftarrow \boxed{R_2}
\end{array}$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right)=$$
$$=n(2x^2+2x-4)$$

Rješenje $\dfrac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^4+x^3-3x^2-x+2\right)=1 \longleftarrow \boxed{Q_1} \\
\underline{-x^4-x^3+3x^2+x-2} \\
\qquad\qquad 2x^2+2x-4 \longleftarrow \boxed{R_1}
\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(2x^2+2x-4\right)=\frac{1}{2}x^2-\frac{1}{2} \longleftarrow \boxed{Q_2} \\
\underline{-x^4-x^3+2x^2} \\
\qquad\qquad -x^2-x+2 \\
\qquad\qquad \underline{x^2+x-2} \\
\qquad\qquad\qquad 0 \longleftarrow \boxed{R_2}
\end{array}$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right)=$$

$$=n(2x^2+2x-4)=x^2+x-2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$M\big(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\big) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\left(x^4 + x^3 - \ x^2 \ + x - 2\right)$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$$

$$\left(x^4+x^3-\ x^2\ +x-2\right):\left(x^2+x-2\right)$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right)=x^2+x-2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\left(x^4 + x^3 - \ x^2 \ + x - 2\right) : \left(x^2 + x - 2\right) =$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\left(x^4 + x^3 - \ x^2 \ + x - 2\right) : \left(x^2 + x - 2\right) = x^2$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{aligned}\big(x^4 + x^3 - \ x^2 \ &+ x - 2\big) : \big(x^2 + x - 2\big) = x^2 \\ +\, 2x^2 &\end{aligned}$$

$$M\big(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\big) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{aligned}\left(x^4 + x^3 - \ x^2 \ + x - 2\right) &: \left(x^2 + x - 2\right) = x^2 \\ - x^3 + 2x^2 &\end{aligned}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{aligned} &\left(x^4 + x^3 - \ x^2 \ + x - 2\right) : \left(x^2 + x - 2\right) = x^2 \\ &-x^4 - x^3 + 2x^2 \end{aligned}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{array}{l} \left(x^4 + x^3 - \ x^2 \ + x - 2\right) : \left(x^2 + x - 2\right) = x^2 \\ \underline{-x^4 - x^3 + 2x^2 \qquad\qquad\qquad} \end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{array}{l}
\left(x^4 + x^3 - \ x^2 \ + x - 2\right) : \left(x^2 + x - 2\right) = x^2 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad\quad} \\
\qquad\qquad\quad x^2
\end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{array}{l} \left(x^4 + x^3 - \ x^2 \ + x - 2\right) : \left(x^2 + x - 2\right) = x^2 \\ \underline{-x^4 - x^3 + 2x^2 \qquad\qquad\qquad} \\ \qquad\qquad\quad x^2 \ + x \end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{array}{l} \left(x^4 + x^3 - \ x^2 \ + x - 2\right) : \left(x^2 + x - 2\right) = x^2 \\ \underline{-x^4 - x^3 + 2x^2 \qquad\qquad} \\ \qquad\qquad\quad x^2 \ + x - 2 \end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{array}{l} \big(x^4 + x^3 - \ x^2 \ + x - 2\big) : \big(x^2 + x - 2\big) = x^2 + 1 \\ \underline{-x^4 - x^3 + 2x^2 \qquad\qquad\quad} \\ \qquad\qquad\quad x^2 \ + x - 2 \end{array}$$

$$M\big(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\big) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{array}{l}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^2 + x - 2\right) = x^2 + 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} \\
\qquad\qquad x^2 + x - 2 \\
\qquad\qquad\qquad\quad + 2
\end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{array}{l}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^2 + x - 2\right) = x^2 + 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} \\
\qquad\qquad x^2 + x - 2 \\
\qquad\qquad\quad -x + 2
\end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}$$

$$\begin{array}{l}
\left(x^4+x^3-\ x^2\ +x-2\right) : \left(x^2+x-2\right) = x^2+1 \\
\underline{-x^4-x^3+2x^2 \qquad\qquad} \\
\qquad\qquad\quad x^2\ +x-2 \\
\qquad\qquad -x^2\ -x+2
\end{array}$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right) = x^2+x-2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{array}{l}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^2 + x - 2\right) = x^2 + 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} \\
\qquad\qquad x^2 + x - 2 \\
\qquad\quad \underline{-x^2 - x + 2}
\end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2}$$

$$\begin{array}{rl}
\big(x^4 + x^3 - \;\; x^2 \;\; + x - 2\big) & : \big(x^2 + x - 2\big) = x^2 + 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} & \\
x^2 \;\; + x - 2 & \\
\underline{-x^2 \;\; - x + 2} & \\
0 &
\end{array}$$

$$M\big(x^4 + x^3 - x^2 + x - 2,\; x^4 + x^3 - 3x^2 - x + 2\big) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2} = \underline{\qquad\qquad\qquad\qquad\qquad}$$

$$\begin{array}{l}
\big(x^4 + x^3 - x^2 + x - 2\big) : \big(x^2 + x - 2\big) = x^2 + 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad\quad} \\
\qquad\qquad\quad x^2 + x - 2 \\
\qquad\qquad\quad \underline{-x^2 - x + 2} \\
\qquad\qquad\qquad\qquad\quad 0
\end{array}$$

$$M\big(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\big) = x^2 + x - 2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}=\frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{rl}
\big(x^4+x^3-\ x^2\ +x-2\big) & :\ \big(x^2+x-2\big)=x^2+1 \\
\underline{-x^4-x^3+2x^2\qquad\quad} & \\
x^2\ +x-2 & \\
\underline{-x^2\ -x+2} & \\
0 &
\end{array}$$

$$M\big(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\big)=x^2+x-2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2} = \frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{rl}
\left(x^4+x^3-\ x^2\ +x-2\right) & :\ \left(x^2+x-2\right) = x^2+1 \\
\underline{-x^4-x^3+2x^2\qquad\quad} & \\
x^2\ +x-2 & \\
\underline{-x^2\ -x+2} & \\
0 &
\end{array}$$

$$\left(x^4+x^3-3x^2-x+2\right)$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right) = x^2+x-2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2} = \frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{rl}
\big(x^4+x^3-\ x^2\ +x-2\big) : \big(x^2+x-2\big) = x^2+1 & \\
\underline{-x^4-x^3+2x^2\qquad\quad} & \\
x^2\ +x-2 & \\
\underline{-x^2\ -x+2} & \\
0 &
\end{array}$$

$$\big(x^4+x^3-3x^2-x+2\big) : \big(x^2+x-2\big)$$

$$M\big(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\big) = x^2+x-2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2} = \frac{(x^2 + x - 2)(x^2 + 1)}{}$$

$$\begin{array}{l}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^2 + x - 2\right) = x^2 + 1 \\
\underline{-x^4 - x^3 + 2x^2 } \\
 x^2 + x - 2 \\
 \underline{-x^2 - x + 2} \\
 0
\end{array}$$

$$\left(x^4 + x^3 - 3x^2 - x + 2\right) : \left(x^2 + x - 2\right) =$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2} = \frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{r} \left(x^4+x^3-\ x^2\ +x-2\right) : \left(x^2+x-2\right) = x^2+1 \\ \underline{-x^4-x^3+2x^2} \\ x^2\ +x-2 \\ \underline{-x^2\ -x+2} \\ 0 \end{array}$$

$$\left(x^4+x^3-3x^2-x+2\right) : \left(x^2+x-2\right) = x^2$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right) = x^2+x-2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2} = \frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{l}
\big(x^4+x^3-\ x^2\ +x-2\big) : \big(x^2+x-2\big) = x^2+1 \\
\underline{-x^4-x^3+2x^2\qquad\qquad\quad} \\
\qquad\qquad\quad x^2\ +x-2 \\
\qquad\qquad\ \underline{-x^2\ -x+2} \\
\qquad\qquad\qquad\qquad\ 0
\end{array}$$

$$\begin{array}{l}
\big(x^4+x^3-3x^2-x+2\big) : \big(x^2+x-2\big) = x^2 \\
\qquad\qquad +2x^2
\end{array}$$

$$M\big(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\big) = x^2+x-2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2} = \frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{r l}
\big(x^4+x^3-\ x^2\ +x-2\big) : \big(x^2+x-2\big) = x^2+1 & \\
\underline{-x^4-x^3+2x^2} & \\
x^2\ +x-2 & \\
\underline{-x^2\ -x+2} & \\
0 &
\end{array}$$

$$\begin{array}{l}
\big(x^4+x^3-3x^2-x+2\big) : \big(x^2+x-2\big) = x^2 \\
\quad -x^3+2x^2
\end{array}$$

$$M\big(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\big) = x^2+x-2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2} = \frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{l}
\big(x^4+x^3-x^2+x-2\big) : \big(x^2+x-2\big) = x^2+1 \\
\underline{-x^4-x^3+2x^2} \\
\phantom{-x^4-x^3+{}}x^2+x-2 \\
\underline{-x^2-x+2} \\
\phantom{-x^4-x^3-x^2-x+{}}0
\end{array}$$

$$\begin{array}{l}
\big(x^4+x^3-3x^2-x+2\big) : \big(x^2+x-2\big) = x^2 \\
-x^4-x^3+2x^2
\end{array}$$

$$M\big(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\big) = x^2+x-2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2} = \frac{(x^2 + x - 2)(x^2 + 1)}{}$$

$$\begin{array}{rrrrr}
\big(x^4 + x^3 & - \; x^2 & + x & - 2\big) & : \big(x^2 + x - 2\big) = x^2 + 1 \\
\underline{-x^4 - x^3} & \underline{+ 2x^2} & \underline{} & \underline{} & \\
 & x^2 & + x & - 2 & \\
 & \underline{-x^2} & \underline{- x} & \underline{+ 2} & \\
 & & & 0 &
\end{array}$$

$$\begin{array}{rrrrr}
\big(x^4 + x^3 & - 3x^2 & - x & + 2\big) & : \big(x^2 + x - 2\big) = x^2 \\
\underline{-x^4 - x^3} & \underline{+ 2x^2} & \underline{} & \underline{} &
\end{array}$$

$$M\big(x^4 + x^3 - x^2 + x - 2,\; x^4 + x^3 - 3x^2 - x + 2\big) = x^2 + x - 2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2} = \frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{rl}
\big(x^4+x^3-\ x^2\ +x-2\big) : \big(x^2+x-2\big) = x^2+1 & \\
\underline{-x^4-x^3+2x^2 \qquad\qquad\quad} & \\
x^2\ +x-2 & \\
\underline{-x^2\ -x+2} & \\
0 &
\end{array}$$

$$\begin{array}{rl}
\big(x^4+x^3-3x^2-x+2\big) : \big(x^2+x-2\big) = x^2 & \\
\underline{-x^4-x^3+2x^2 \qquad\qquad\quad} & \\
-x^2 \qquad\qquad &
\end{array}$$

$$M\big(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\big) = x^2+x-2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2} = \frac{(x^2 + x - 2)(x^2 + 1)}{}$$

$$\begin{array}{l}
\big(x^4 + x^3 - x^2 + x - 2\big) : \big(x^2 + x - 2\big) = x^2 + 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad\quad} \\
\qquad\qquad\quad x^2 + x - 2 \\
\qquad\qquad\ \underline{-x^2 - x + 2} \\
\qquad\qquad\qquad\qquad 0
\end{array}$$

$$\begin{array}{l}
\big(x^4 + x^3 - 3x^2 - x + 2\big) : \big(x^2 + x - 2\big) = x^2 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad\quad} \\
\qquad\qquad -x^2 - x
\end{array}$$

$$M\big(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\big) = x^2 + x - 2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2} = \frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{l}
\left(x^4+x^3-\ x^2\ +x-2\right) : \left(x^2+x-2\right) = x^2+1 \\
\underline{-x^4-x^3+2x^2\qquad\qquad} \\
\qquad\qquad x^2\ +x-2 \\
\qquad\quad \underline{-x^2\ -x+2} \\
\qquad\qquad\qquad 0
\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right) : \left(x^2+x-2\right) = x^2 \\
\underline{-x^4-x^3+2x^2\qquad\qquad} \\
\qquad\quad -x^2\ -x+2
\end{array}$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right) = x^2+x-2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2} = \frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{rl}
\left(x^4+x^3-\ x^2\ +x-2\right) : \left(x^2+x-2\right) = x^2+1 & \\
\underline{-x^4-x^3+2x^2} & \\
x^2\ +x-2 & \\
\underline{-x^2\ -x+2} & \\
0 &
\end{array}$$

$$\begin{array}{rl}
\left(x^4+x^3-3x^2-x+2\right) : \left(x^2+x-2\right) = x^2-1 & \\
\underline{-x^4-x^3+2x^2} & \\
-x^2\ -x+2 &
\end{array}$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right) = x^2+x-2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2} = \frac{(x^2 + x - 2)(x^2 + 1)}{}$$

$$\begin{array}{rl}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^2 + x - 2\right) = x^2 + 1 & \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} & \\
x^2 + x - 2 & \\
\underline{-x^2 - x + 2} & \\
0 &
\end{array}$$

$$\begin{array}{rl}
\left(x^4 + x^3 - 3x^2 - x + 2\right) : \left(x^2 + x - 2\right) = x^2 - 1 & \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} & \\
-x^2 - x + 2 & \\
-2 &
\end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2} = \frac{(x^2 + x - 2)(x^2 + 1)}{}$$

$$\begin{array}{rl}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^2 + x - 2\right) = x^2 + 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} \\
x^2 + x - 2 \\
\underline{-x^2 - x + 2} \\
0
\end{array}$$

$$\begin{array}{rl}
\left(x^4 + x^3 - 3x^2 - x + 2\right) : \left(x^2 + x - 2\right) = x^2 - 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} \\
-x^2 - x + 2 \\
+x - 2
\end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2} = \frac{(x^2 + x - 2)(x^2 + 1)}{}$$

$$\begin{array}{r}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^2 + x - 2\right) = x^2 + 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} \\
x^2 + x - 2 \\
\underline{-x^2 - x + 2} \\
0
\end{array}$$

$$\begin{array}{r}
\left(x^4 + x^3 - 3x^2 - x + 2\right) : \left(x^2 + x - 2\right) = x^2 - 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} \\
-x^2 - x + 2 \\
x^2 + x - 2
\end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4 + x^3 - x^2 + x - 2}{x^4 + x^3 - 3x^2 - x + 2} = \frac{(x^2 + x - 2)(x^2 + 1)}{}$$

$$\begin{array}{l}
\left(x^4 + x^3 - x^2 + x - 2\right) : \left(x^2 + x - 2\right) = x^2 + 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} \\
\qquad\qquad x^2 + x - 2 \\
\qquad\qquad \underline{-x^2 - x + 2} \\
\qquad\qquad\qquad\quad 0
\end{array}$$

$$\begin{array}{l}
\left(x^4 + x^3 - 3x^2 - x + 2\right) : \left(x^2 + x - 2\right) = x^2 - 1 \\
\underline{-x^4 - x^3 + 2x^2 \qquad\qquad} \\
\qquad\qquad -x^2 - x + 2 \\
\qquad\qquad \underline{\ \ x^2 + x - 2}
\end{array}$$

$$M\left(x^4 + x^3 - x^2 + x - 2,\ x^4 + x^3 - 3x^2 - x + 2\right) = x^2 + x - 2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2} = \frac{(x^2+x-2)(x^2+1)}{}$$

$$\begin{array}{r}
\left(x^4+x^3-\ x^2\ +x-2\right) : \left(x^2+x-2\right) = x^2+1 \\
\underline{-x^4-x^3+2x^2\qquad\qquad} \\
x^2\ +x-2 \\
\underline{-x^2\ -x+2} \\
0
\end{array}$$

$$\begin{array}{r}
\left(x^4+x^3-3x^2-x+2\right) : \left(x^2+x-2\right) = x^2-1 \\
\underline{-x^4-x^3+2x^2\qquad\qquad} \\
-x^2\ -x+2 \\
\underline{x^2\ +x-2} \\
0
\end{array}$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right) = x^2+x-2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}=\frac{(x^2+x-2)(x^2+1)}{(x^2+x-2)(x^2-1)}$$

$$\begin{array}{l}
\left(x^4+x^3-x^2+x-2\right):\left(x^2+x-2\right)=x^2+1\\
\underline{-x^4-x^3+2x^2}\\
\phantom{-x^4-x^3+{}}x^2+x-2\\
\underline{-x^2-x+2}\\
\phantom{-x^4-x^3-x^2-x+{}}0
\end{array}$$

$$\begin{array}{l}
\left(x^4+x^3-3x^2-x+2\right):\left(x^2+x-2\right)=x^2-1\\
\underline{-x^4-x^3+2x^2}\\
-x^2-x+2\\
\underline{x^2+x-2}\\
\phantom{-x^4-x^3-x^2-x+{}}0
\end{array}$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right)=x^2+x-2$$

$$\frac{x^4+x^3-x^2+x-2}{x^4+x^3-3x^2-x+2}=\frac{(x^2+x-2)(x^2+1)}{(x^2+x-2)(x^2-1)}=\frac{x^2+1}{x^2-1}$$

$$\begin{array}{r}
\left(x^4+x^3-\ x^2\ +x-2\right):\left(x^2+x-2\right)=x^2+1 \\
\underline{-x^4-x^3+2x^2\qquad\qquad} \\
x^2\ +x-2 \\
\underline{-x^2\ -x+2} \\
0
\end{array}$$

$$\begin{array}{r}
\left(x^4+x^3-3x^2-x+2\right):\left(x^2+x-2\right)=x^2-1 \\
\underline{-x^4-x^3+2x^2\qquad\qquad} \\
-x^2\ -x+2 \\
\underline{x^2\ +x-2} \\
0
\end{array}$$

$$M\left(x^4+x^3-x^2+x-2,\ x^4+x^3-3x^2-x+2\right)=x^2+x-2$$

drugi zadatak

Zadatak 2

Zadani su polinomi

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1 \quad i \quad g(x) = 2x^3 - 3x^2 + 2x + 2.$$

Odredite polinome $\tilde{f}$ *i* $\tilde{g}$ *takve da je* $f\tilde{f} + g\tilde{g} = M(f, g)$.

Rješenje

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\big(2x^4 - \ x^3 \ + \ x^2 \ + 3x + 1\big)$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right)$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) =$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{aligned}
&\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x \\
& - 2x
\end{aligned}
$$

$$
\begin{aligned}
f(x) &= 2x^4 - x^3 + x^2 + 3x + 1 \\
g(x) &= 2x^3 - 3x^2 + 2x + 2
\end{aligned}
$$

Rješenje

$$
\begin{aligned}
&\left(2x^4 - \ x^3 \ + \ x^2 \ + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x \\
&\qquad\qquad\quad - 2x^2 - 2x
\end{aligned}
$$

$$
\begin{aligned}
f(x) &= 2x^4 - x^3 + x^2 + 3x + 1 \\
g(x) &= 2x^3 - 3x^2 + 2x + 2
\end{aligned}
$$

Rješenje

$$\big(2x^4 - x^3 + x^2 + 3x + 1\big) : \big(2x^3 - 3x^2 + 2x + 2\big) = x$$

$$+3x^3 - 2x^2 - 2x$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\left(2x^4 - \ x^3 \ + \ x^2 \ + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x$$
$$-2x^4 + 3x^3 - 2x^2 - 2x$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\begin{array}{l} \left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x \\ \underline{-2x^4 + 3x^3 - 2x^2 - 2x} \end{array}$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\begin{array}{l}\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x \\ \underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\ \qquad\quad 2x^3\end{array}$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad\quad 2x^3 - x^2
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\begin{array}{l} \left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x \\ \underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\ \qquad\quad 2x^3 - x^2 + x \end{array}$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
2x^3 - x^2 + x + 1
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\qquad 2x^3 - x^2 + x + 1
\end{array}$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{rl}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 & \\
-2x^4 + 3x^3 - 2x^2 - 2x & \\
\hline
2x^3 - x^2 + x + 1 & \\
-2 &
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\quad} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad\qquad\qquad - 2x - 2
\end{array}$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\qquad 2x^3 - x^2 + x + 1 \\
\qquad\qquad\qquad + 3x^2 - 2x - 2
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\quad} \\
\qquad\qquad 2x^3 - x^2 + x + 1 \\
\qquad\quad -2x^3 + 3x^2 - 2x - 2
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{rl}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) & : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad} & \\
2x^3 - x^2 + x + 1 & \\
\underline{-2x^3 + 3x^2 - 2x - 2} &
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\qquad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{rrrrrl}
\big(2x^4 - & x^3 & + \; x^2 & + 3x & + 1\big) & : \big(2x^3 - 3x^2 + 2x + 2\big) = x + 1 \\
-2x^4 + & 3x^3 & - 2x^2 & - 2x & & \\
\hline
& 2x^3 & - \; x^2 & + \; x & + 1 & \\
& -2x^3 & + 3x^2 & - 2x & - 2 & \\
\hline
& & 2x^2 & - \; x & &
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{r}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \quad\quad} \\
2x^3 - x^2 + x + 1 \\
\underline{-2x^3 + 3x^2 - 2x - 2} \\
2x^2 - x - 1
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{r}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \phantom{{}+1}} \\
2x^3 - x^2 + x + 1 \\
\underline{-2x^3 + 3x^2 - 2x - 2} \\
2x^2 - x - 1
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$\left(2x^3 - 3x^2 + 2x + 2\right)$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\quad} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\quad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right)$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{rl}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} & \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \quad} & \\
2x^3 - x^2 + x + 1 & \\
\underline{-2x^3 + 3x^2 - 2x - 2} & \\
2x^2 - x - 1 \longleftarrow \boxed{R_1} &
\end{array}
$$

$$\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) =$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1}$$

$$\begin{array}{r}
-2x^4 + 3x^3 - 2x^2 - 2x \\
\hline
2x^3 - x^2 + x + 1 \\
-2x^3 + 3x^2 - 2x - 2 \\
\hline
2x^2 - x - 1
\end{array} \longleftarrow \boxed{R_1}$$

$$\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1}$$

$$\begin{array}{r} -2x^4 + 3x^3 - 2x^2 - 2x \phantom{{}+1} \\ \hline 2x^3 - x^2 + x + 1 \\ -2x^3 + 3x^2 - 2x - 2 \\ \hline 2x^2 - x - 1 \end{array} \longleftarrow \boxed{R_1}$$

$$\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x$$

$$+ \; x$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{rl}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 & \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x } & \\
2x^3 - x^2 + x + 1 & \\
\underline{-2x^3 + 3x^2 - 2x - 2} & \\
2x^2 - x - 1 & \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x \\
\qquad + x^2 + x
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x } \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\quad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x \\
-2x^3 + x^2 + x
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x \\
\underline{-2x^3 + x^2 + x}
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\qquad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad\quad -2x^2
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\qquad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad\quad -2x^2 + 3x
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x } \\
\qquad\qquad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x \\
\underline{-2x^3 + x^2 + x } \\
\qquad\quad -2x^2 + 3x + 2
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
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Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad - 2x^2 + 3x + 2
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
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\qquad\qquad\quad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad\quad - 2x^2 + 3x + 2 \\
\qquad\qquad\qquad\quad - 1
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \\
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad\qquad -x - 1
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\quad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad -2x^2 + 3x + 2 \\
\qquad\quad 2x^2 - x - 1
\end{array}
$$

$$
\begin{aligned}
f(x) &= 2x^4 - x^3 + x^2 + 3x + 1 \\
g(x) &= 2x^3 - 3x^2 + 2x + 2
\end{aligned}
$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \\
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{2x^2 - x - 1}
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
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\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
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\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \\
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{2x^2 - x - 1} \\
\qquad\qquad 2x
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{\;\; 2x^2 - x - 1} \\
\qquad\qquad 2x + 1
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
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Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
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\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad\quad -2x^2 + 3x + 2 \\
\qquad\quad \underline{\;\;2x^2 - x - 1} \\
\qquad\qquad\qquad 2x + 1
\end{array}
$$

$$
\begin{aligned}
f(x) &= 2x^4 - x^3 + x^2 + 3x + 1 \\
g(x) &= 2x^3 - 3x^2 + 2x + 2
\end{aligned}
$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
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$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{\;\; 2x^2 - x - 1} \\
\qquad\qquad\quad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1}$$

$$\begin{array}{r}
-2x^4 + 3x^3 - 2x^2 - 2x \phantom{{}+1} \\
\hline
2x^3 - x^2 + x + 1 \\
-2x^3 + 3x^2 - 2x - 2 \\
\hline
2x^2 - x - 1
\end{array} \longleftarrow \boxed{R_1}$$

$$\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2}$$

$$\begin{array}{r}
-2x^3 + x^2 + x \phantom{{}+2} \\
\hline
-2x^2 + 3x + 2 \\
2x^2 - x - 1 \\
\hline
2x + 1
\end{array} \longleftarrow \boxed{R_2}$$

$$\left(2x^2 - x - 1\right)$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x \qquad} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{\ \ 2x^2 - x - 1} \\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$\left(2x^2 - x - 1\right) : \left(2x + 1\right)$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad} \\
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$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x \qquad} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{\;\; 2x^2 - x - 1} \\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$\left(2x^2 - x - 1\right) : \left(2x + 1\right) =$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
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\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{\;\; 2x^2 - x - 1} \\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x } \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x } \\
\qquad\quad -2x^2 + 3x + 2 \\
\qquad\quad \underline{2x^2 - x - 1} \\
\qquad\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x \\
\qquad\quad - x
\end{array}
$$

$$
\boxed{\begin{aligned}
f(x) &= 2x^4 - x^3 + x^2 + 3x + 1 \\
g(x) &= 2x^3 - 3x^2 + 2x + 2
\end{aligned}}
$$

Rješenje

$$\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}$$

$$\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{2x^2 - x - 1} \\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}$$

$$\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x \\
-2x^2 - x
\end{array}$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\quad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x \qquad\quad} \\
\qquad \quad -2x^2 + 3x + 2 \\
\qquad \underline{\quad 2x^2 - x - 1} \\
\qquad\qquad\quad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x \\
\underline{-2x^2 - x \qquad\quad}
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\qquad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad\quad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad\quad -2x^2 + 3x + 2 \\
\qquad\quad \underline{\;\; 2x^2 - x - 1} \\
\qquad\qquad\qquad\; 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x \\
\underline{-2x^2 - x \qquad\quad} \\
\qquad\quad -2x
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{\;\; 2x^2 - x - 1} \\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x \\
\underline{-2x^2 - x} \\
\qquad -2x - 1
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\qquad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad\quad -2x^2 + 3x + 2 \\
\qquad\quad \underline{\;\; 2x^2 - x - 1} \\
\qquad\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x - 1 \\
\underline{-2x^2 - x \qquad\qquad} \\
\qquad\qquad -2x - 1
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1}\\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x}\\
\qquad 2x^3 - x^2 + x + 1\\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2}\\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2}\\
\underline{-2x^3 + x^2 + x}\\
\qquad -2x^2 + 3x + 2\\
\qquad \underline{\;\;2x^2 - x - 1}\\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x - 1\\
\underline{-2x^2 - x}\\
\qquad -2x - 1\\
\qquad\qquad +1
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{\ \ 2x^2 - x - 1} \\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x - 1 \\
\underline{-2x^2 - x} \\
\qquad -2x - 1 \\
\qquad\ \ 2x + 1
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1}$$

$$\begin{array}{l}
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\quad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}$$

$$\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2}$$

$$\begin{array}{l}
\underline{-2x^3 + x^2 + x} \\
\qquad - 2x^2 + 3x + 2 \\
\qquad\ \underline{2x^2 - x - 1} \\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}$$

$$\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x - 1$$

$$\begin{array}{l}
\underline{-2x^2 - x} \\
\qquad -2x - 1 \\
\qquad\ \underline{2x + 1}
\end{array}$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1}$$

$$\begin{array}{r}
-2x^4 + 3x^3 - 2x^2 - 2x \phantom{{}+1} \\
\hline
2x^3 - x^2 + x + 1 \\
-2x^3 + 3x^2 - 2x - 2 \\
\hline
2x^2 - x - 1
\end{array} \longleftarrow \boxed{R_1}$$

$$\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2}$$

$$\begin{array}{r}
-2x^3 + x^2 + x \phantom{{}+2} \\
\hline
-2x^2 + 3x + 2 \\
2x^2 - x - 1 \\
\hline
2x + 1
\end{array} \longleftarrow \boxed{R_2}$$

$$\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x - 1$$

$$\begin{array}{r}
-2x^2 - x \phantom{{}-1} \\
\hline
-2x - 1 \\
2x + 1 \\
\hline
0
\end{array}$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{\ \ 2x^2 - x - 1} \\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = \underbrace{x - 1}_{\boxed{Q_3}} \\
\underline{-2x^2 - x} \\
\qquad -2x - 1 \\
\qquad \underline{\ \ 2x + 1} \\
\qquad\qquad 0
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\quad} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x \qquad\quad} \\
\qquad\quad -2x^2 + 3x + 2 \\
\qquad\quad \underline{2x^2 - x - 1} \\
\qquad\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = \underset{\uparrow\ \boxed{Q_3}}{x - 1} \\
\underline{-2x^2 - x \qquad\quad} \\
\qquad\quad -2x - 1 \\
\qquad\quad \underline{2x + 1} \\
\qquad\qquad\quad 0 \longleftarrow \boxed{R_3}
\end{array}
$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$M(f,g) =$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{2x^2 - x - 1} \\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x - 1 \\
\underline{-2x^2 - x} \\
\qquad -2x - 1 \\
\qquad \underline{2x + 1} \\
\qquad\qquad 0 \longleftarrow \boxed{R_3}
\end{array}
$$

$\boxed{Q_3}$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$
$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad 2x^3 - x^2 + x + 1 \\
\qquad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\boxed{M(f, g) = n(2x + 1)}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{2x^2 - x - 1} \\
\qquad\qquad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x - 1 \\
\underline{-2x^2 - x} \\
\qquad -2x - 1 \\
\qquad \underline{2x + 1} \\
\qquad\qquad 0 \longleftarrow \boxed{R_3}
\end{array}
$$

$\boxed{Q_3}$

$$
\begin{aligned}
f(x) &= 2x^4 - x^3 + x^2 + 3x + 1 \\
g(x) &= 2x^3 - 3x^2 + 2x + 2
\end{aligned}
$$

Rješenje

$$
\begin{array}{l}
\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1} \\
\underline{-2x^4 + 3x^3 - 2x^2 - 2x \qquad\qquad} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}
$$

$$
\boxed{M(f,g) = n(2x+1) = x + \frac{1}{2}}
$$

$$
\begin{array}{l}
\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2} \\
\underline{-2x^3 + x^2 + x \qquad\qquad} \\
\qquad - 2x^2 + 3x + 2 \\
\qquad \underline{\;\; 2x^2 - x - 1} \\
\qquad\qquad\quad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}
$$

$$
\begin{array}{l}
\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x - 1 \\
\underline{-2x^2 - x \qquad\quad} \\
\qquad\quad - 2x - 1 \\
\qquad\quad \underline{\;\; 2x + 1} \\
\qquad\qquad\quad 0 \longleftarrow \boxed{R_3}
\end{array}
$$

$\boxed{Q_3}$

$$
\begin{aligned}
f(x) &= 2x^4 - x^3 + x^2 + 3x + 1 \\
g(x) &= 2x^3 - 3x^2 + 2x + 2
\end{aligned}
$$

Rješenje

$$\left(2x^4 - x^3 + x^2 + 3x + 1\right) : \left(2x^3 - 3x^2 + 2x + 2\right) = x + 1 \longleftarrow \boxed{Q_1}$$

$$\begin{array}{l}
\underline{-2x^4 + 3x^3 - 2x^2 - 2x} \\
\qquad\quad 2x^3 - x^2 + x + 1 \\
\qquad\quad \underline{-2x^3 + 3x^2 - 2x - 2} \\
\qquad\qquad\qquad 2x^2 - x - 1 \longleftarrow \boxed{R_1}
\end{array}$$

$$\boxed{M(f,g) = n(2x+1) = x + \frac{1}{2}}$$

$$\boxed{\frac{1}{2}R_2}$$

$$\left(2x^3 - 3x^2 + 2x + 2\right) : \left(2x^2 - x - 1\right) = x - 1 \longleftarrow \boxed{Q_2}$$

$$\begin{array}{l}
\underline{-2x^3 + x^2 + x} \\
\qquad -2x^2 + 3x + 2 \\
\qquad \underline{\;\;\; 2x^2 - x - 1} \\
\qquad\qquad\quad 2x + 1 \longleftarrow \boxed{R_2}
\end{array}$$

$$\left(2x^2 - x - 1\right) : \left(2x + 1\right) = x - 1$$

$$\boxed{Q_3}$$

$$\begin{array}{l}
\underline{-2x^2 - x} \\
\qquad -2x - 1 \\
\qquad \underline{\;\;\; 2x + 1} \\
\qquad\qquad\quad 0 \longleftarrow \boxed{R_3}
\end{array}$$

$$f(x) = 2x^4 - x^3 + x^2 + 3x + 1$$

$$g(x) = 2x^3 - 3x^2 + 2x + 2$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f, g)}$$

$$f = gQ_1 + R_1$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f, g)}$$

$$f = gQ_1 + R_1$$
$$g = R_1 Q_2 + R_2$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f,g)}$$

$$
\begin{aligned}
f &= gQ_1 + R_1 \\
g &= R_1 Q_2 + R_2 \\
R_1 &= R_2 Q_3
\end{aligned}
$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f, g)}$$

$$g = R_1 Q_2 + R_2$$

$$\begin{aligned} f &= gQ_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f, g)}$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2$$

$$\begin{aligned} f &= g Q_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}$$

$$\boxed{f \tilde{f} + g \tilde{g} = M(f, g)}$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2$$

$$\begin{aligned} f &= g Q_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f, g)}$$

$$M(f, g) = \frac{1}{2} R_2$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2 \;\Big/ \cdot \frac{1}{2}$$

$$\begin{aligned} f &= gQ_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f, g)}$$

$$M(f, g) = \frac{1}{2} R_2$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2 \quad \Big/ \cdot \frac{1}{2}$$

$$\frac{1}{2} g - \frac{1}{2} R_1 Q_2 = \frac{1}{2} R_2$$

$$\begin{aligned} f &= g Q_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}$$

$$\boxed{f \tilde{f} + g \tilde{g} = M(f, g)}$$

$$M(f, g) = \frac{1}{2} R_2$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2 \quad \Big/ \cdot \frac{1}{2}$$

$$\frac{1}{2} g - \frac{1}{2} R_1 Q_2 = \frac{1}{2} R_2$$

$$\frac{1}{2} g - \frac{1}{2} R_1 \cdot$$

$$\boxed{\begin{aligned} f &= g Q_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}}$$

$$\boxed{f \tilde{f} + g \tilde{g} = M(f, g)}$$

$$M(f, g) = \frac{1}{2} R_2$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2 \quad \Big/ \cdot \frac{1}{2}$$

$$\frac{1}{2} g - \frac{1}{2} R_1 Q_2 = \frac{1}{2} R_2$$

$$\frac{1}{2} g - \frac{1}{2} R_1 \cdot$$

$$Q_2(x) = x - 1$$

$$\begin{aligned} f &= g Q_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}$$

$$\boxed{f \tilde{f} + g \tilde{g} = M(f, g)}$$

$$M(f, g) = \frac{1}{2} R_2$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2 \;\Big/ \cdot \frac{1}{2}$$

$$\frac{1}{2} g - \frac{1}{2} R_1 Q_2 = \frac{1}{2} R_2$$

$$\frac{1}{2} g - \frac{1}{2} R_1 \cdot (x - 1)$$

$$Q_2(x) = x - 1$$

$$\begin{aligned} f &= g Q_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}$$

$$\boxed{f \tilde{f} + g \tilde{g} = M(f, g)}$$

$$M(f, g) = \frac{1}{2} R_2$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2 \quad \Big/ \cdot \frac{1}{2}$$

$$\frac{1}{2} g - \frac{1}{2} R_1 Q_2 = \frac{1}{2} R_2$$

$$\frac{1}{2} g - \frac{1}{2} R_1 \cdot (x-1) = M(f,g)$$

$$Q_2(x) = x - 1$$

$$\begin{aligned} f &= gQ_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f,g)}$$

$$M(f,g) = \frac{1}{2} R_2$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2 \quad \Big/ \cdot \frac{1}{2}$$

$$\frac{1}{2} g - \frac{1}{2} R_1 Q_2 = \frac{1}{2} R_2$$

$$\frac{1}{2} g - \frac{1}{2} R_1 \cdot (x - 1) = M(f, g)$$

$$\frac{1}{2} g - \frac{1}{2} (x - 1) \cdot$$

$$Q_2(x) = x - 1$$

$$\boxed{\begin{aligned} f &= g Q_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}}$$

$$\boxed{f \tilde{f} + g \tilde{g} = M(f, g)}$$

$$M(f, g) = \frac{1}{2} R_2$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2 \quad \Big/ \cdot \frac{1}{2}$$

$$\frac{1}{2} g - \frac{1}{2} R_1 Q_2 = \frac{1}{2} R_2$$

$$\frac{1}{2} g - \frac{1}{2} R_1 \cdot (x - 1) = M(f, g)$$

$$\frac{1}{2} g - \frac{1}{2} (x - 1) \cdot$$

$$R_1 = f - gQ_1 \leftsquigarrow f = gQ_1 + R_1$$

$$Q_2(x) = x - 1$$

$$g = R_1 Q_2 + R_2$$

$$R_1 = R_2 Q_3$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f, g)}$$

$$M(f, g) = \frac{1}{2} R_2$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2 \quad \Big/ \cdot \frac{1}{2}$$

$$\frac{1}{2}g - \frac{1}{2}R_1 Q_2 = \frac{1}{2}R_2$$

$$\frac{1}{2}g - \frac{1}{2}R_1 \cdot (x-1) = M(f,g)$$

$$\frac{1}{2}g - \frac{1}{2}(x-1) \cdot \big(f - gQ_1\big)$$

$$R_1 = f - gQ_1 \leftsquigarrow f = gQ_1 + R_1$$

$$Q_2(x) = x - 1$$

$$\begin{aligned} f &= gQ_1 + R_1 \\ g &= R_1 Q_2 + R_2 \\ R_1 &= R_2 Q_3 \end{aligned}$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f,g)}$$

$$M(f,g) = \frac{1}{2}R_2$$

$$R_1 = f - gQ_1 \leftarrow f = gQ_1 + R_1$$

$$g = R_1 Q_2 + R_2$$

$$R_1 = R_2 Q_3$$

$$Q_2(x) = x - 1$$

$$g = R_1 Q_2 + R_2$$

$$g - R_1 Q_2 = R_2 \quad \Big/ \cdot \frac{1}{2}$$

$$\frac{1}{2}g - \frac{1}{2}R_1 Q_2 = \frac{1}{2}R_2$$

$$\frac{1}{2}g - \frac{1}{2}R_1 \cdot (x-1) = M(f,g)$$

$$\frac{1}{2}g - \frac{1}{2}(x-1) \cdot \big(f - gQ_1\big) = M(f,g)$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f,g)}$$

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$$\frac{1}{2} g$$

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$$\left(-\frac{1}{2}x + \frac{1}{2}\right)$$

$$\boxed{f\tilde{f} + g\tilde{g} = M(f,g)}$$

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$$\frac{1}{2} g - \frac{1}{2} (x-1) f + \frac{1}{2} (x^2-1) g = M(f,g)$$

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$$\tilde{f}(x) = -\frac{1}{2}x + \frac{1}{2} \qquad \tilde{g}(x) = \frac{1}{2}x^2$$

treći zadatak

Zadatak 3

Riješite jednadžbu

$$x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$$

ako je poznato jedno njezino rješenje $x_1 = 2 - i$.

Zadatak 3

Riješite jednadžbu

$$x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$$

ako je poznato jedno njezino rješenje $x_1 = 2 - i$.

Kompleksne nultočke polinoma

Neka je $P \in \mathbb{R}[x]$. Ako je $z_0 \in \mathbb{C}$ nultočka polinoma P, tada je i $\bar{z}_0$ također nultočka polinoma P.

Rješenje

$x_1 = 2 - i$

$$x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$$

Rješenje $x_1 = 2 - i, \quad x_2 = 2 + i \qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

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Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1				

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4			

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	−4	6		

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$					

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1				

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$			

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$			

$(2-i)(-2-i) =$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$			

$(2-i)(-2-i) = -4$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$			

$(2-i)(-2-i) = -4 - 2i$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$			

$(2 - i)(-2 - i) = -4 - 2i + 2i$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$			

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$			

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$			

$i^2 = -1$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$			

$i^2 = -1$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1		

$i^2 = -1$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	

$i^2 = -1$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0

$i^2 = -1$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$					

$i^2 = -1$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

$$\big(x - (2-i)\big) \cdot \big(x^3 + (-2-i)x^2 + x - 2 - i\big) = 0$$

Rješenje

$\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$

$$x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1	$-2 - i$	0
$2 + i$	1				

$i^2 = -1$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

$$\big(x - (2 - i)\big) \cdot \big(x^3 + (-2 - i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0			

$i^2 = -1$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

$$\big(x - (2-i)\big) \cdot \big(x^3 + (-2-i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1		

$i^2 = -1$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

$$\big(x - (2-i)\big) \cdot \big(x^3 + (-2-i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	−4	6	−4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

$$\big(x - (2-i)\big) \cdot \big(x^3 + (-2-i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$\boxed{i^2 = -1}$ $\big(x - (2 - i)\big)$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

$$\big(x - (2 - i)\big) \cdot \big(x^3 + (-2 - i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1	$-2 - i$	0
$2 + i$	1	0	1	0	

$\boxed{i^2 = -1}$ $\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big)$

$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$

$$\big(x - (2 - i)\big) \cdot \big(x^3 + (-2 - i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1	$-2 - i$	0
$2 + i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big($$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

$$\big(x - (2 - i)\big) \cdot \big(x^3 + (-2 - i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1	$-2 - i$	0
$2 + i$	1	0	1	0	

$\boxed{i^2 = -1}$ $\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big(x^2$

$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$

$$\big(x - (2 - i)\big) \cdot \big(x^3 + (-2 - i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1	$-2 - i$	0
$2 + i$	1	0	1	0	

$\boxed{i^2 = -1}$ $\quad \big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big(x^2 + 0 \cdot x$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

$$\big(x - (2 - i)\big) \cdot \big(x^3 + (-2 - i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big)$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

$$\big(x - (2-i)\big) \cdot \big(x^3 + (-2-i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1	$-2 - i$	0
$2 + i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

$$\big(x - (2 - i)\big) \cdot \big(x^3 + (-2 - i)x^2 + x - 2 - i\big) = 0$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	−4	6	−4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	−4	6	−4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow x_3 = i, \; x_4 = -i$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1	$-2 - i$	0
$2 + i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1	$-2 - i$	0
$2 + i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

2. način

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

Rješenje

$\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x-(2-i)\big)\cdot\big(x-(2+i)\big)\cdot\big(x^2+0\cdot x+1\big) = 0$$

$$x^2+1=0 \rightsquigarrow x^2=-1 \rightsquigarrow \boxed{x_3 = i,\ x_4 = -i}$$

$$(2-i)(-2-i) = -4-2i+2i+i^2 = -4-1 = -5$$

---

2. način

$$\big(x-(2-i)\big)\cdot\big(x-(2+i)\big) =$$
$$= x^2-(2+i)x-(2-i)x$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x-(2-i)\big)\cdot\big(x-(2+i)\big)\cdot\big(x^2+0\cdot x+1\big)=0$$

$$x^2+1=0 \rightsquigarrow x^2=-1 \rightsquigarrow \boxed{x_3 = i,\ x_4 = -i}$$

$$(2-i)(-2-i) = -4-2i+2i+i^2 = -4-1 = -5$$

---

2. način

$$\big(x-(2-i)\big)\cdot\big(x-(2+i)\big) =$$
$$= x^2-(2+i)x-(2-i)x+$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \; x_4 = -i}$$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) =$$

$$= x^2 - (2 + i)x - (2 - i)x + 4 - i^2$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \; x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$
$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$
$$= x^2 - 4x$$

Rješenje

$\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1	$-2 - i$	0
$2 + i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \; x_4 = -i}$$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) =$$

$$= x^2 - (2 + i)x - (2 - i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big)$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$
$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$
$$= x^2 - 4x + 5$$

Rješenje

$\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

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2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big)$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) =$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje

$$\boxed{x_1 = 2 - i, \quad x_2 = 2 + i} \qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2$$

$$-5x^2$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \;\; x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2$$
$$+4x^3 - 5x^2$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$
$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$
$$= x^2 - 4x + 5$$

Rješenje

$$\boxed{x_1 = 2 - i, \quad x_2 = 2 + i} \qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$$

	1	−4	6	−4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x-(2-i)\big)\cdot\big(x-(2+i)\big)\cdot\big(x^2+0\cdot x+1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2$$

$$-x^4 + 4x^3 - 5x^2$$

$$\big(x-(2-i)\big)\cdot\big(x-(2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2 - i$	1	$-2 - i$	1	$-2 - i$	0
$2 + i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2$$

$$\underline{-x^4 + 4x^3 - 5x^2}$$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) =$$

$$= x^2 - (2 + i)x - (2 - i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2$$

$$\frac{-x^4 + 4x^3 - 5x^2}{x^2}$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \; x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2$$

$$\underline{-x^4 + 4x^3 - 5x^2}$$

$$x^2 \; - 4x$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje

$\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2$$
$$\underline{-x^4 + 4x^3 - 5x^2}$$
$$x^2 - 4x + 5$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$
$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$
$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i,\ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2 + 1$$

$$\underline{-x^4 + 4x^3 - 5x^2}$$

$$x^2 \quad - 4x + 5$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	−4	6	−4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \; x_4 = -i}$$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2 + 1$$

$$\underline{-x^4 + 4x^3 - 5x^2}$$

$$x^2 \quad - 4x + 5$$

$$-5$$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) =$$

$$= x^2 - (2 + i)x - (2 - i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2 + 1$$

$$\begin{array}{l} -x^4 + 4x^3 - 5x^2 \\ \hline \qquad\qquad x^2 - 4x + 5 \\ \qquad\qquad\quad + 4x - 5 \end{array}$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	-4	6	-4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$\boxed{i^2 = -1}$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2 + 1$$

$$\begin{array}{r} -x^4 + 4x^3 - 5x^2 \\ \hline x^2 - 4x + 5 \\ -x^2 + 4x - 5 \end{array}$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$

$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\qquad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	−4	6	−4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \; x_4 = -i}$$

$$(2 - i)(-2 - i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2 + 1$$

$$\begin{array}{l} -x^4 + 4x^3 - 5x^2 \\ \hline \qquad\qquad x^2 - 4x + 5 \\ \qquad\quad -x^2 + 4x - 5 \\ \hline \end{array}$$

$$\big(x - (2 - i)\big) \cdot \big(x - (2 + i)\big) =$$

$$= x^2 - (2 + i)x - (2 - i)x + 4 - i^2 =$$

$$= x^2 - 4x + 5$$

Rješenje $\boxed{x_1 = 2 - i, \quad x_2 = 2 + i}$ $\quad x^4 - 4x^3 + 6x^2 - 4x + 5 = 0$

	1	−4	6	−4	5
$2-i$	1	$-2-i$	1	$-2-i$	0
$2+i$	1	0	1	0	

$i^2 = -1$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) \cdot \big(x^2 + 0 \cdot x + 1\big) = 0$$

$$x^2 + 1 = 0 \rightsquigarrow x^2 = -1 \rightsquigarrow \boxed{x_3 = i, \ x_4 = -i}$$

$$(2-i)(-2-i) = -4 - 2i + 2i + i^2 = -4 - 1 = -5$$

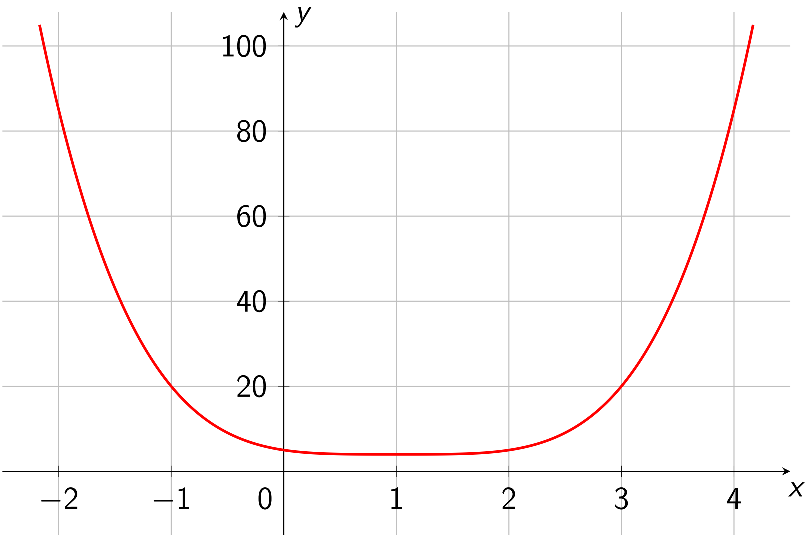
---

2. način

$$\big(x^4 - 4x^3 + 6x^2 - 4x + 5\big) : \big(x^2 - 4x + 5\big) = x^2 + 1$$

$$\begin{array}{r} \underline{-x^4 + 4x^3 - 5x^2} \\ x^2 - 4x + 5 \\ \underline{-x^2 + 4x - 5} \\ 0 \end{array}$$

$$\big(x - (2-i)\big) \cdot \big(x - (2+i)\big) =$$
$$= x^2 - (2+i)x - (2-i)x + 4 - i^2 =$$
$$= x^2 - 4x + 5$$



$$f(x) = x^4 - 4x^3 + 6x^2 - 4x + 5$$

četvrti zadatak

Zadatak 4

Odredite sva rješenja jednadžbe

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

ako je poznato da ima barem jedno cjelobrojno kompleksno rješenje.

Zadatak 4

Odredite sva rješenja jednadžbe

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

ako je poznato da ima barem jedno cjelobrojno kompleksno rješenje.

Cjelobrojne kompleksne nultočke polinoma

Ako je $\alpha + \beta i$ cjelobrojna kompleksna nultočka polinoma

$$f(x) = a_n x^n + a_{n-1} x^{n-1} + \cdots + a_1 x + a_0$$

s cjelobrojnim koeficijentima, onda je $\alpha^2 + \beta^2$ djelitelj slobodnog člana.

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25:

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 =$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$i, \ -i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

pozitivni djelitelji od 25: $1, 5, 25$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$5 =$$

$i, \ -i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$5 = 1^2 + 2^2$$

$i, \ -i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$5 = 1^2 + 2^2 = 1^2 + (-2)^2$$

$i, \ -i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$5 = 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2$$

$i, \; -i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$5 = 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2 = (-1)^2 + (-2)^2$$

$i, \ -i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$5 = 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2 = (-1)^2 + (-2)^2$$

$i,\ -i,\ 1 + 2i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$5 = 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2 = (-1)^2 + (-2)^2$$

$$i,\ -i,\ 1+2i,\ 1-2i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$5 = 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2 = (-1)^2 + (-2)^2$$

$$i,\ -i,\ 1 + 2i,\ 1 - 2i,\ -1 + 2i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$5 = 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2 = (-1)^2 + (-2)^2$$

$$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$$= 2^2 + 1^2$$

$$i,\ -i,\ 1 + 2i,\ 1 - 2i,\ -1 + 2i,\ -1 - 2i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

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$$5 = 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2 = (-1)^2 + (-2)^2$$
$$= 2^2 + 1^2 = 2^2 + (-1)^2$$

$$i,\ -i,\ 1 + 2i,\ 1 - 2i,\ -1 + 2i,\ -1 - 2i,$$

Rješenje

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pozitivni djelitelji od 25: $1, 5, 25$

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$$= 2^2 + 1^2 = 2^2 + (-1)^2 = (-2)^2 + 1^2$$

$$i,\ -i,\ 1 + 2i,\ 1 - 2i,\ -1 + 2i,\ -1 - 2i,$$

Rješenje

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pozitivni djelitelji od 25: $1, 5, 25$

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$$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

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$$\begin{aligned} 5 &= 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2 = (-1)^2 + (-2)^2 \\ &= 2^2 + 1^2 = 2^2 + (-1)^2 = (-2)^2 + 1^2 = (-2)^2 + (-1)^2 \end{aligned}$$

$$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$$

Rješenje

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$$25 =$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$\begin{aligned} 5 &= 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2 = (-1)^2 + (-2)^2 \\ &= 2^2 + 1^2 = 2^2 + (-1)^2 = (-2)^2 + 1^2 = (-2)^2 + (-1)^2 \end{aligned}$$

$$25 = 0^2 + 5^2$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,$

Rješenje

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$$25 = 0^2 + 5^2 = 0^2 + (-5)^2$$
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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,$

Rješenje

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pozitivni djelitelji od 25: $1, 5, 25$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$$\begin{aligned} 25 &= 0^2 + 5^2 = 0^2 + (-5)^2 \\ &= 3^2 + 4^2 = 3^2 + (-4)^2 = (-3)^2 + 4^2 = (-3)^2 + (-4)^2 \end{aligned}$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

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$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

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$$\begin{aligned} 25 &= 0^2 + 5^2 = 0^2 + (-5)^2 \\ &= 3^2 + 4^2 = 3^2 + (-4)^2 = (-3)^2 + 4^2 = (-3)^2 + (-4)^2 \\ &= 4^2 + 3^2 \end{aligned}$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$$\begin{aligned} 25 &= 0^2 + 5^2 = 0^2 + (-5)^2 \\ &= 3^2 + 4^2 = 3^2 + (-4)^2 = (-3)^2 + 4^2 = (-3)^2 + (-4)^2 \\ &= 4^2 + 3^2 = 4^2 + (-3)^2 \end{aligned}$$

$$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$$
$$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

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$$= 3^2 + 4^2 = 3^2 + (-4)^2 = (-3)^2 + 4^2 = (-3)^2 + (-4)^2$$
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$$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$$
$$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

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$$\begin{aligned} 25 &= 0^2 + 5^2 = 0^2 + (-5)^2 \\ &= 3^2 + 4^2 = 3^2 + (-4)^2 = (-3)^2 + 4^2 = (-3)^2 + (-4)^2 \\ &= 4^2 + 3^2 = 4^2 + (-3)^2 = (-4)^2 + 3^2 = (-4)^2 + (-3)^2 \end{aligned}$$

$$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$$
$$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\boxed{\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i}$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$5 = 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2 = (-1)^2 + (-2)^2$$
$$= 2^2 + 1^2 = 2^2 + (-1)^2 = (-2)^2 + 1^2 = (-2)^2 + (-1)^2$$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,$

Rješenje

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

pozitivni djelitelji od 25: $1, 5, 25$

$$\alpha^2 + \beta^2 \rightsquigarrow \alpha + \beta i$$

$$1 = 0^2 + 1^2 = 0^2 + (-1)^2$$

$$\begin{aligned} 5 &= 1^2 + 2^2 = 1^2 + (-2)^2 = (-1)^2 + 2^2 = (-1)^2 + (-2)^2 \\ &= 2^2 + 1^2 = 2^2 + (-1)^2 = (-2)^2 + 1^2 = (-2)^2 + (-1)^2 \end{aligned}$$

$$\begin{aligned} 25 &= 0^2 + 5^2 = 0^2 + (-5)^2 \\ &= 3^2 + 4^2 = 3^2 + (-4)^2 = (-3)^2 + 4^2 = (-3)^2 + (-4)^2 \\ &= 4^2 + 3^2 = 4^2 + (-3)^2 = (-4)^2 + 3^2 = (-4)^2 + (-3)^2 \end{aligned}$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$

$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$

$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1				

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$

$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$

$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6			

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$

$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$

$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18		

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$					

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1				

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$			

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$			

$(1+2i)(-5+2i) =$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$			

$(1+2i)(-5+2i) = -5$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$			

$(1+2i)(-5+2i) = -5+2i$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$			

$(1+2i)(-5+2i) = -5 + 2i - 10i$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$			

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$			

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$			

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$			

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$		

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$$
$$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$$
$$4-3i,\ -4+3i,\ -4-3i$$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$		

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) =$$

$$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$$
$$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$$
$$4-3i,\ -4+3i,\ -4-3i$$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$		

$i^2 = -1$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$		

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9 - 8i$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$		

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9 - 8i + 18i$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$		

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9 - 8i + 18i - 16i^2$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$		

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9 - 8i + 18i - 16i^2 = 25$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$		

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9 - 8i + 18i - 16i^2 = 25 + 10i$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9 - 8i + 18i - 16i^2 = 25 + 10i$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	

$\boxed{i^2 = -1}$

$(1+2i)(-5+2i) = -5+2i-10i+4i^2 = -9-8i$

$(1+2i)(9-8i) = 9-8i+18i-16i^2 = 25+10i$

$(1+2i)(-5+10i) =$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$

$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$

$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9 - 8i + 18i - 16i^2 = 25 + 10i$$

$$(1+2i)(-5+10i) = -5$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5+2i-10i+4i^2 = -9-8i$$

$$(1+2i)(9-8i) = 9-8i+18i-16i^2 = 25+10i$$

$$(1+2i)(-5+10i) = -5+10i$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$

$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$

$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5+2i-10i+4i^2 = -9-8i$$
$$(1+2i)(9-8i) = 9-8i+18i-16i^2 = 25+10i$$
$$(1+2i)(-5+10i) = -5+10i-10i$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5+2i-10i+4i^2 = -9-8i$$

$$(1+2i)(9-8i) = 9-8i+18i-16i^2 = 25+10i$$

$$(1+2i)(-5+10i) = -5+10i-10i+20i^2$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	

$$i^2 = -1$$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$
$$(1+2i)(9-8i) = 9 - 8i + 18i - 16i^2 = 25 + 10i$$
$$(1+2i)(-5+10i) = -5 + 10i - 10i + 20i^2 = -25$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9 - 8i + 18i - 16i^2 = 25 + 10i$$

$$(1+2i)(-5+10i) = -5 + 10i - 10i + 20i^2 = -25$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$
$4-3i,\ -4+3i,\ -4-3i$

$x_1 = 1 + 2i$ $\qquad$ $x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0

$\boxed{i^2 = -1}$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9 - 8i + 18i - 16i^2 = 25 + 10i$$

$$(1+2i)(-5+10i) = -5 + 10i - 10i + 20i^2 = -25$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$

$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$

$4-3i,\ -4+3i,\ -4-3i$

$x_1 = 1 + 2i, \quad x_2 = 1 - 2i \qquad x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0

$\boxed{i^2 = -1}$

$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$

$(1+2i)(9-8i) = 9 - 8i + 18i - 16i^2 = 25 + 10i$

$(1+2i)(-5+10i) = -5 + 10i - 10i + 20i^2 = -25$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$

$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$

$4-3i,\ -4+3i,\ -4-3i$

$\boxed{x_1 = 1 + 2i, \quad x_2 = 1 - 2i}$ $\qquad x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0

$i^2 = -1$

$$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$$

$$(1+2i)(9-8i) = 9 - 8i + 18i - 16i^2 = 25 + 10i$$

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$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$

$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$

$4-3i,\ -4+3i,\ -4-3i$

$\boxed{x_1 = 1 + 2i, \quad x_2 = 1 - 2i}$ $\qquad x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0
$1-2i$					

$i^2 = -1$

$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$

$(1 +$

$$\left(x - (1+2i)\right) \cdot \left(x^3 + (-5+2i)x^2 + (9-8i)x - 5 + 10i\right) = 0$$

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	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0
$1-2i$	1				

$i^2 = -1$

$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$

$(1 +$

$$\big(x - (1+2i)\big) \cdot \big(x^3 + (-5+2i)x^2 + (9-8i)x - 5 + 10i\big) = 0$$

$(1+2i)(-5+10i) = -5 + 10i - 10i + 20i^2 = -25$

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$\boxed{x_1 = 1 + 2i, \quad x_2 = 1 - 2i}$

$$x^4 - 6x^3 + 18x^2 - 30x + 25 = 0$$

	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0
$1-2i$	1	-4			

$i^2 = -1$

$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$

$(1+$

$$\big(x - (1+2i)\big) \cdot \big(x^3 + (-5+2i)x^2 + (9-8i)x - 5 + 10i\big) = 0$$

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	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0
$1-2i$	1	-4	5		

$i^2 = -1$

$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$

$(1+$

$$\big(x - (1+2i)\big) \cdot \big(x^3 + (-5+2i)x^2 + (9-8i)x - 5 + 10i\big) = 0$$

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$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0
$1-2i$	1	-4	5	0	

$i^2 = -1$

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$$\big(x - (1+2i)\big) \cdot \big(x^3 + (-5+2i)x^2 + (9-8i)x - 5 + 10i\big) = 0$$

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	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0
$1-2i$	1	-4	5	0	

$i^2 = -1$ $\qquad \big(x - (1+2i)\big)$

$(1+2i)(-5+2i) = -5 + 2i - 10i + 4i^2 = -9 - 8i$

$(1 +$

$$\big(x - (1+2i)\big) \cdot \big(x^3 + (-5+2i)x^2 + (9-8i)x - 5 + 10i\big) = 0$$

$(1 + 2i)(-5 + 10i) = -5 + 10i - 10i + 20i^2 = -25$

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	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0
$1-2i$	1	-4	5	0	

$i^2 = -1$

$$\big(x - (1+2i)\big) \cdot \big(x - (1-2i)\big)$$

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$i^2 = -1$

$$\big(x-(1+2i)\big)\cdot\big(x-(1-2i)\big)\cdot\big(x^2-4x+5\big)$$

$$(1+2i)(-5+2i) = -5+2i-10i+4i^2 = -9-8i$$

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$$\big(x-(1+2i)\big)\cdot\big(x^3+(-5+2i)x^2+(9-8i)x-5+10i\big) = 0$$

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	1	-6	18	-30	25
$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0
$1-2i$	1	-4	5	0	

$\boxed{i^2 = -1}$

$$\big(x-(1+2i)\big)\cdot\big(x-(1-2i)\big)\cdot\big(x^2-4x+5\big) = 0$$

$$x^2 - 4x + 5 = 0$$

$$(1+2i)(-5+2i) = -5+2i-10i+4i^2 = -9-8i$$

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	1	-6	18	-30	25
$1 + 2i$	1	$-5 + 2i$	$9 - 8i$	$-5 + 10i$	0
$1 - 2i$	1	-4	5	0	

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$$x^2 - 4x + 5 = 0 \qquad x_{3,4} = \frac{4 \pm \sqrt{16 - 20}}{2}$$

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$i,\ -i,\ 1 + 2i,\ 1 - 2i,\ -1 + 2i,\ -1 - 2i,\ 2 + i,\ 2 - i,\ -2 + i,$
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$$x^2 - 4x + 5 = 0 \qquad x_{3,4} = \frac{4 \pm \sqrt{16-20}}{2} = \frac{4 \pm 2i}{2} = 2 \pm i$$

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$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0
$1-2i$	1	−4	5	0	

$\boxed{i^2 = -1}$

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$1+2i$	1	$-5+2i$	$9-8i$	$-5+10i$	0
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$\boxed{i^2 = -1}$

$$\big(x - (1+2i)\big) \cdot \big(x - (1-2i)\big) \cdot \big(x^2 - 4x + 5\big) = 0$$

$$x^2 - 4x + 5 = 0 \qquad x_{3,4} = \frac{4 \pm \sqrt{16-20}}{2} = \frac{4 \pm 2i}{2} = 2 \pm i$$

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$$(1+2i)(-5+10i) = -5 + 10i - 10i + 20i^2 = -25$$

$$\boxed{\begin{array}{l} x_3 = 2 + i \\ x_4 = 2 - i \end{array}}$$

$i,\ -i,\ 1+2i,\ 1-2i,\ -1+2i,\ -1-2i,\ 2+i,\ 2-i,\ -2+i,$

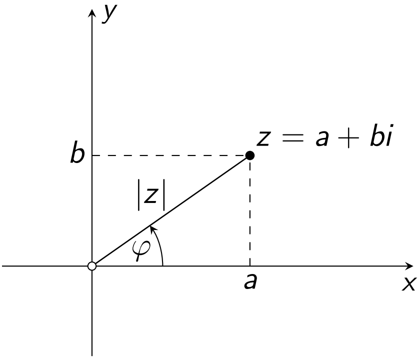
$-2-i,\ 5i,\ -5i,\ 3+4i,\ 3-4i,\ -3+4i,\ -3-4i,\ 4+3i,$

$4-3i,\ -4+3i,\ -4-3i$

$$\boxed{f(x) = x^4 - 6x^3 + 18x^2 - 30x + 25}$$

peti zadatak

Trigonometrijski zapis kompleksnog broja



$$a = r\cos\varphi$$

$$b = r\sin\varphi$$

$$\arg z = \varphi \in [0, 2\pi\rangle$$

$$\operatorname{tg}\varphi = \frac{b}{a}$$

$$r = |z| = \sqrt{a^2 + b^2}$$

$$z = r(\cos\varphi + i\sin\varphi)$$

$$z^n = r^n\big(\cos(n\varphi) + i\sin(n\varphi)\big), \quad n \in \mathbb{N}$$

$$\sqrt[n]{z} = \sqrt[n]{r}\left(\cos\frac{\varphi+2k\pi}{n} + i\sin\frac{\varphi+2k\pi}{n}\right), \quad k = 0, 1, \ldots, n-1$$

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0$.

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0$.

Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0$.

Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$z^2 = t$$

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0.$

Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0.$

Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

$$t^3 + 3t^2 + t + 3 = 0$$

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0$.

Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

$$t^3 + 3t^2 + t + 3 = 0$$

$$1, -1,$$

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0.$

Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

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$$1, -1, 3, -3$$

Zadatak 5

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Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

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Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

$$t^3 + 3t^2 + t + 3 = 0$$

$$1, -1, 3, -3$$

	1			

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0.$

Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

$$t^3 + 3t^2 + t + 3 = 0$$

$$1, -1, 3, -3$$

	1	3		

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0.$

Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

$$t^3 + 3t^2 + t + 3 = 0$$

$$1, -1, 3, -3$$

	1	3	1	

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0$.

Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

$$t^3 + 3t^2 + t + 3 = 0$$

$$1, -1, 3, -3$$

	1	3	1	3

Zadatak 5

U skupu kompleksnih brojeva riješite jednadžbu $z^6 + 3z^4 + z^2 + 3 = 0$.

Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

$$t^3 + 3t^2 + t + 3 = 0$$

$$1, -1, 3, -3$$

	1	3	1	3
-3				

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$$\begin{array}{c|c|c|c|c} & 1 & 3 & 1 & 3 \\ \hline -3 & 1 & & & \end{array}$$

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	1	3	1	3
-3	1	0		

Zadatak 5

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Rješenje

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$$\boxed{z^2 = t}$$

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$$1, -1, 3, -3$$

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Zadatak 5

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Rješenje

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

$$\big(t - (-3)\big)$$

$$t^3 + 3t^2 + t + 3 = 0$$

$$1, -1, 3, -3$$

	1	3	1	3
-3	1	0	1	0

Zadatak 5

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$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$\boxed{z^2 = t}$$

$$\big(t - (-3)\big)\big(t^2 + 0 \cdot t + 1\big)$$

$$t^3 + 3t^2 + t + 3 = 0$$

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-3	1	0	1	0

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$$1, -1, 3, -3$$

$$\begin{array}{c|c|c|c|c} & 1 & 3 & 1 & 3 \\ \hline -3 & 1 & 0 & 1 & 0 \end{array}$$

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

$$(t+3)\big(t^2+1\big) = 0$$

$$t_1 = -3 \qquad t^2 + 1 = 0$$

$$t_2 = i \qquad t_3 = -i$$

$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i$

$z^6 + 3z^4 + z^2 + 3 = 0$

$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i$ $\qquad z^6 + 3z^4 + z^2 + 3 = 0$

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$$z = \sqrt{-3}$$

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$$z = \sqrt{-3}$$

$$\boxed{\sqrt[n]{z} = \sqrt[n]{r}\left(\cos\frac{\varphi + 2k\pi}{n} + i\sin\frac{\varphi + 2k\pi}{n}\right)}$$

$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i$

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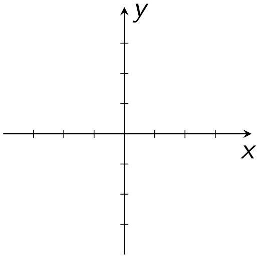
$z^2 = -3$

$z = \sqrt{-3}$



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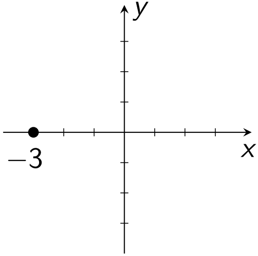

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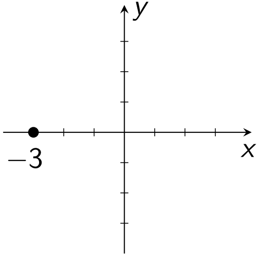

$r = 3$

$$\boxed{\sqrt[n]{z} = \sqrt[n]{r}\left(\cos\frac{\varphi+2k\pi}{n} + i\sin\frac{\varphi+2k\pi}{n}\right)}$$

$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i$

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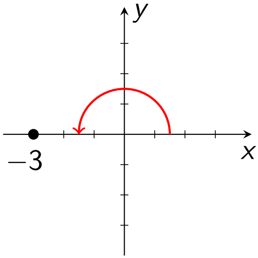

$$r = 3$$

$$\boxed{\sqrt[n]{z} = \sqrt[n]{r}\left(\cos\frac{\varphi+2k\pi}{n} + i\sin\frac{\varphi+2k\pi}{n}\right)}$$

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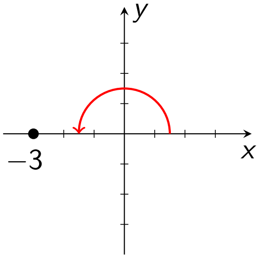


$r = 3 \qquad \varphi = \pi$

$$\sqrt[n]{z} = \sqrt[n]{r}\left(\cos\frac{\varphi+2k\pi}{n} + i\sin\frac{\varphi+2k\pi}{n}\right)$$

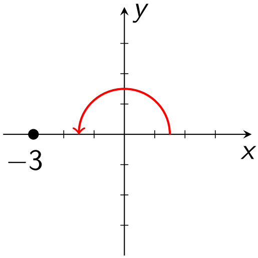
$$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i$$

$$z^6 + 3z^4 + z^2 + 3 = 0$$

$$z^2 = -3$$

$$z = \sqrt{-3}$$

$$\left(\sqrt{-3}\,\right)_k =$$



$r = 3 \qquad \varphi = \pi$

$$\boxed{\sqrt[n]{z} = \sqrt[n]{r}\left(\cos\frac{\varphi+2k\pi}{n} + i\sin\frac{\varphi+2k\pi}{n}\right)}$$

$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i$ $\qquad$ $z^6 + 3z^4 + z^2 + 3 = 0$

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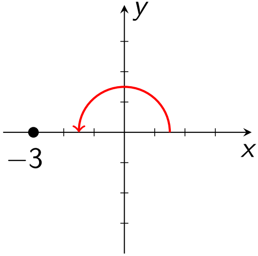
$$z = \sqrt{-3}$$

$$\left(\sqrt{-3}\,\right)_k = \sqrt{3} \cdot \Bigg($$



$r = 3 \qquad \varphi = \pi$

$$\boxed{\sqrt[n]{z} = \sqrt[n]{r}\left(\cos\frac{\varphi+2k\pi}{n} + i\sin\frac{\varphi+2k\pi}{n}\right)}$$

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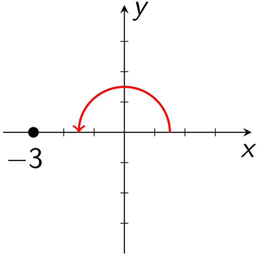
$$z = \sqrt{-3}$$

$$\left(\sqrt{-3}\,\right)_k = \sqrt{3} \cdot \left(\cos \frac{\pi + 2k\pi}{2}\right.$$



$r = 3 \qquad \varphi = \pi$

$$\boxed{\sqrt[n]{z} = \sqrt[n]{r}\left(\cos \frac{\varphi + 2k\pi}{n} + i \sin \frac{\varphi + 2k\pi}{n}\right)}$$

$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i$

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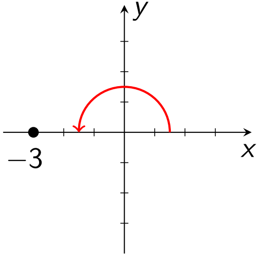
$$\left(\sqrt{-3}\,\right)_k = \sqrt{3} \cdot \left(\cos \frac{\pi + 2k\pi}{2} + \right.$$



$r = 3 \qquad \varphi = \pi$

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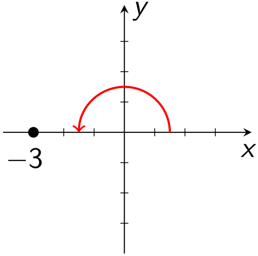

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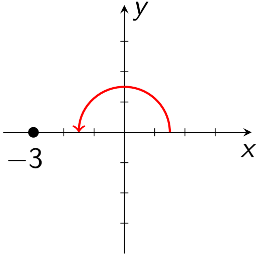

$r = 3 \qquad \varphi = \pi$

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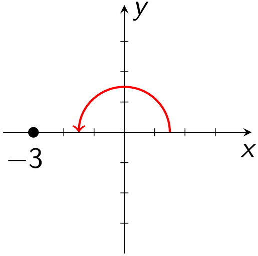

$r = 3 \qquad \varphi = \pi$

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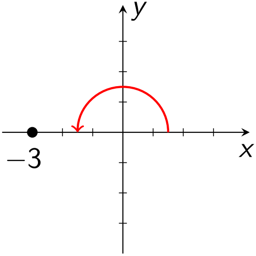

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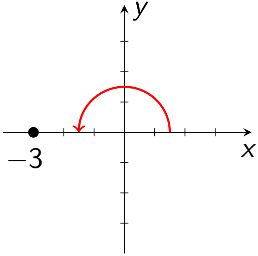

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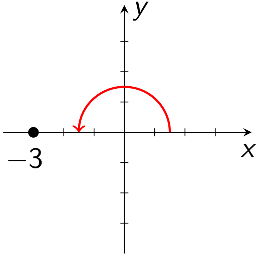

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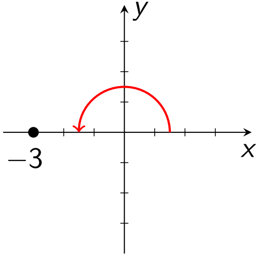

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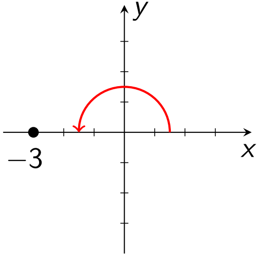

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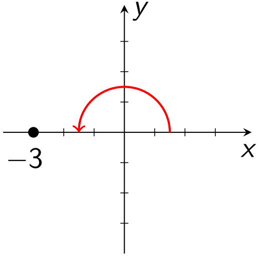

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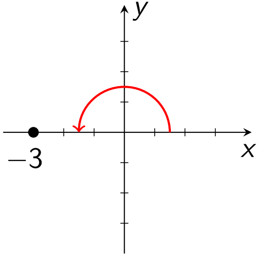

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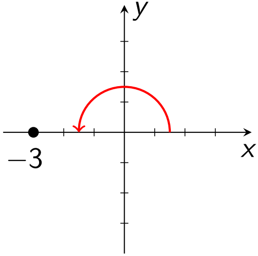
$$\left(\sqrt{-3}\,\right)_0 = \sqrt{3}i$$

$$\left(\sqrt{-3}\,\right)_1 = \sqrt{3} \cdot \left(\cos \frac{3}{2}\pi\right.$$



$r = 3 \qquad \varphi = \pi$

$$\boxed{\sqrt[n]{z} = \sqrt[n]{r}\left(\cos \frac{\varphi + 2k\pi}{n} + i \sin \frac{\varphi + 2k\pi}{n}\right)}$$

$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i$ $\qquad z^6 + 3z^4 + z^2 + 3 = 0$

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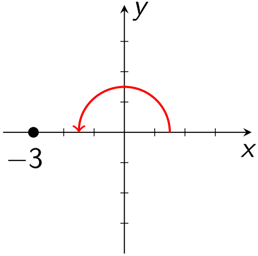

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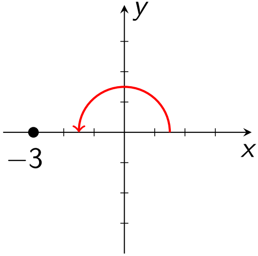

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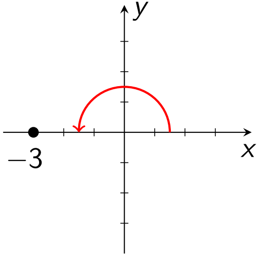

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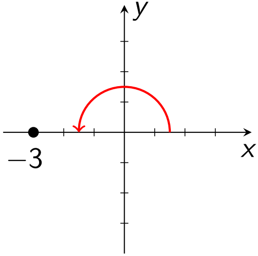

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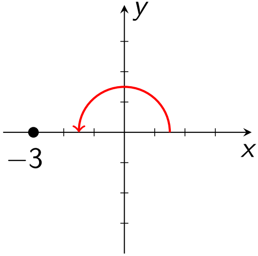

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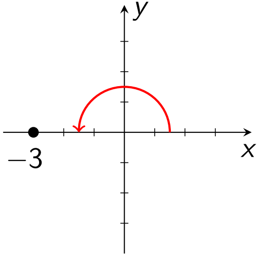

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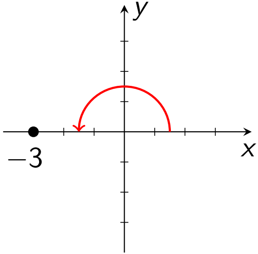

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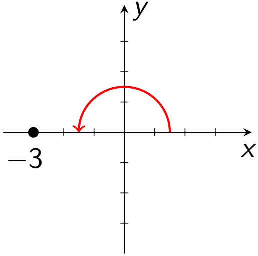

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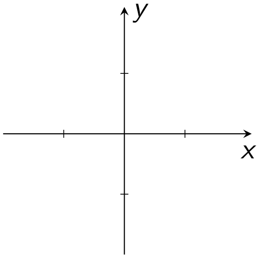

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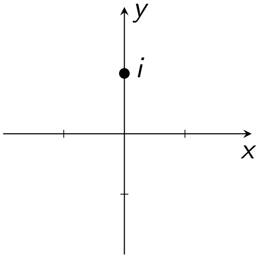

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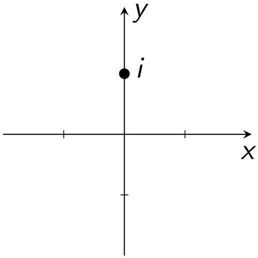

$r = 1$

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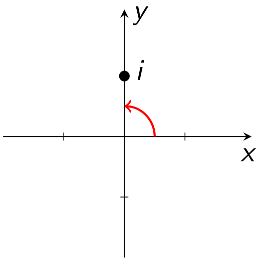

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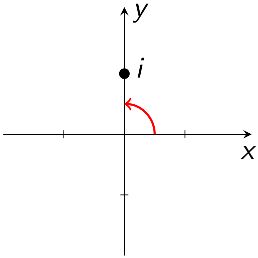

$r = 1 \qquad \varphi = \frac{\pi}{2}$

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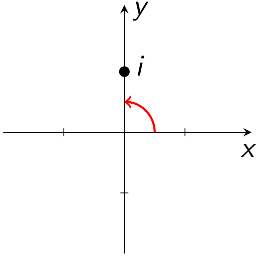
$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i$ $\qquad z^6 + 3z^4 + z^2 + 3 = 0$

$$z^2 = i$$

$$z = \sqrt{i}$$

$$\left(\sqrt{i}\,\right)_k =$$



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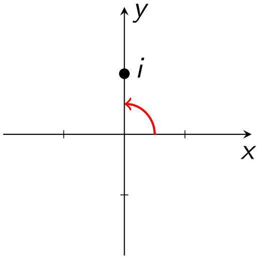
$\left(\sqrt{i}\,\right)_k = \sqrt{1} \cdot \Bigg($



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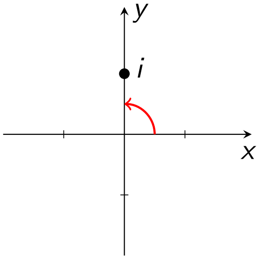

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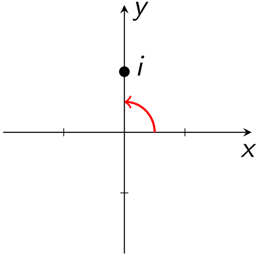

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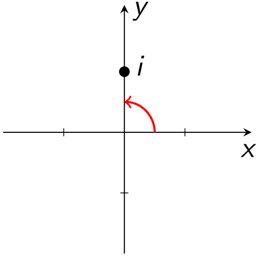

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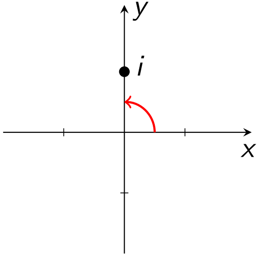

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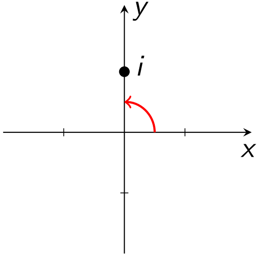

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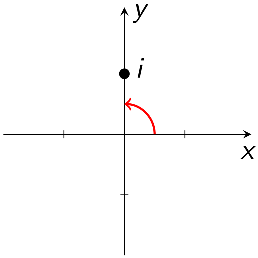

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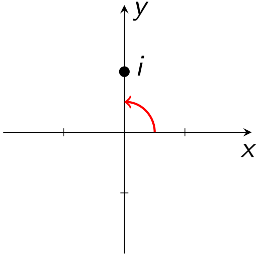

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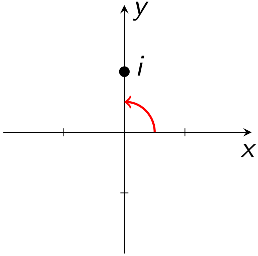
$$\left(\sqrt{i}\,\right)_k = \sqrt{1} \cdot \left(\cos \frac{\frac{\pi}{2} + 2k\pi}{2} + i \sin \frac{\frac{\pi}{2} + 2k\pi}{2} \right)$$

$$\left(\sqrt{i}\,\right)_0 = \cos \frac{\pi}{4} + i \sin \frac{\pi}{4}$$

$$\left(\sqrt{i}\,\right)_0 =$$



$r = 1 \qquad \varphi = \frac{\pi}{2}$

$$\boxed{\sqrt[n]{z} = \sqrt[n]{r} \left(\cos \frac{\varphi + 2k\pi}{n} + i \sin \frac{\varphi + 2k\pi}{n} \right)}$$

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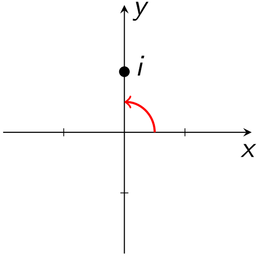

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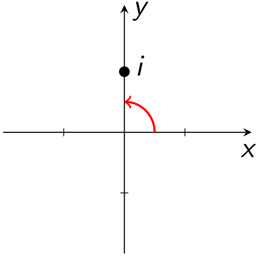

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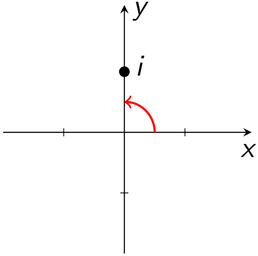

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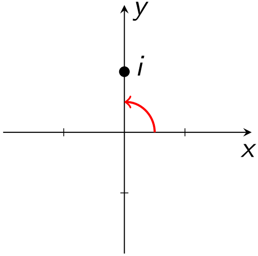

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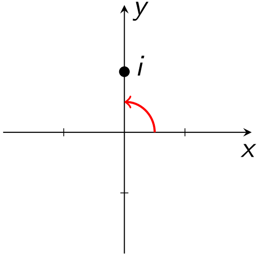
$$\left(\sqrt{i}\,\right)_1 = \cos \frac{5}{4}\pi$$



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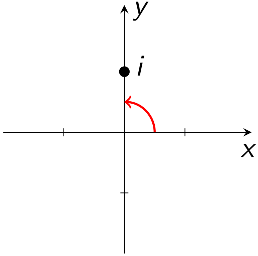

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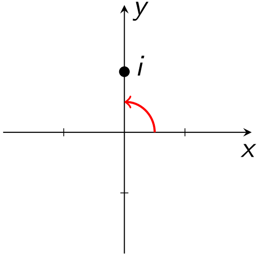

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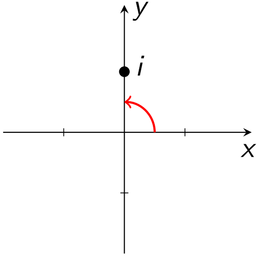

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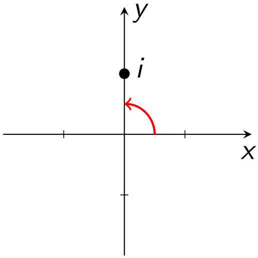

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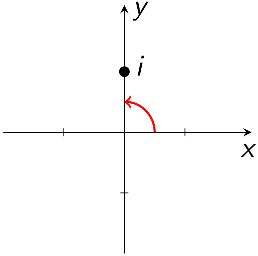

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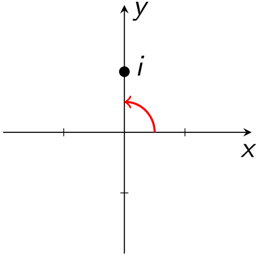

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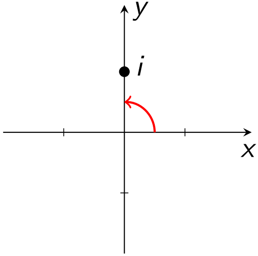

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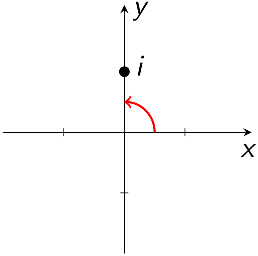

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$$z^2 = i \qquad \boxed{z_3 = \frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} i} \qquad z_4 = -\frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2} i$$

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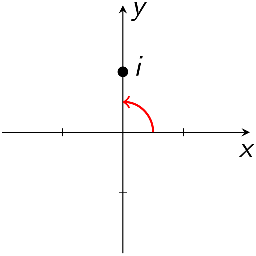

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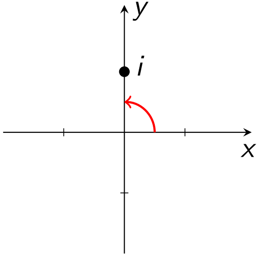

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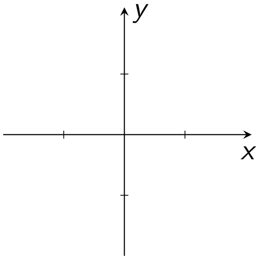

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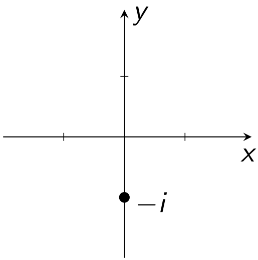

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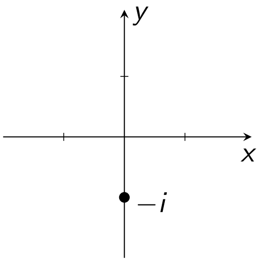

$r = 1$

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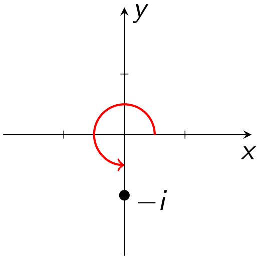

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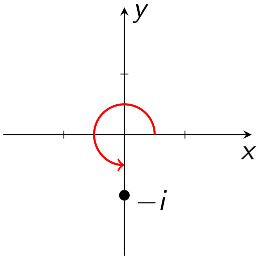

$r = 1 \qquad \varphi = \frac{3}{2}\pi$

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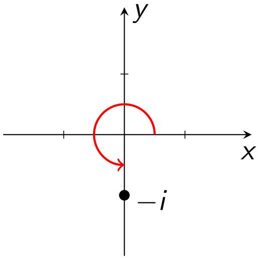

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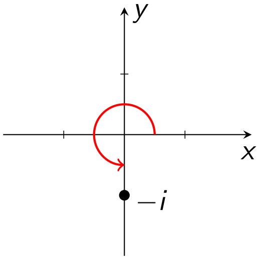

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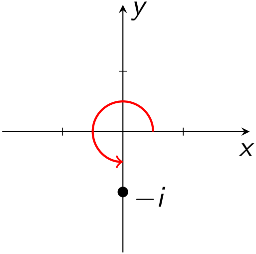

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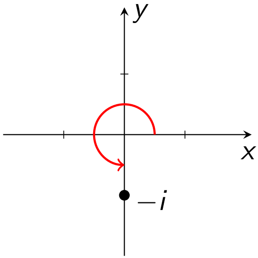

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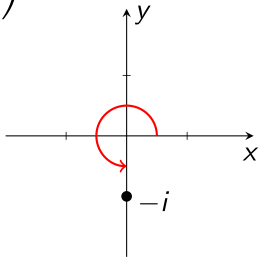

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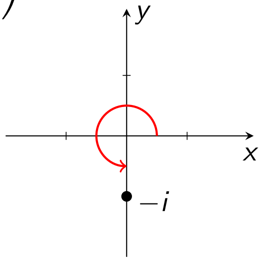

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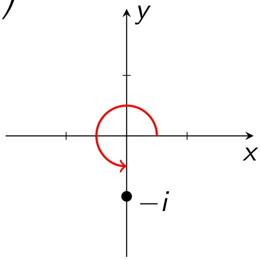

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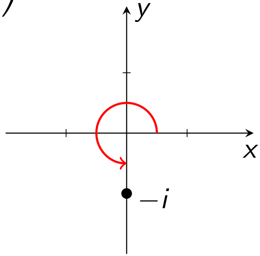

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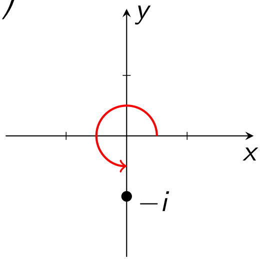

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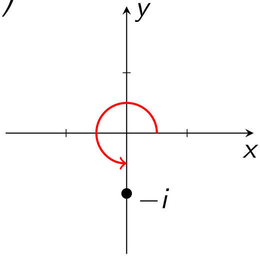

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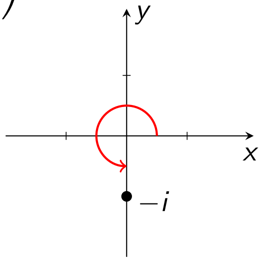

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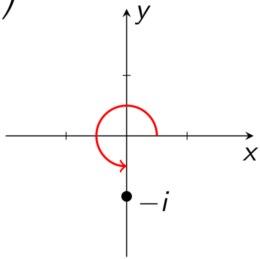

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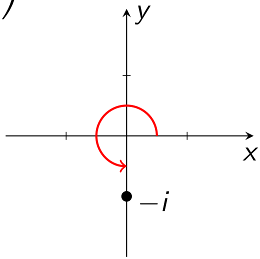

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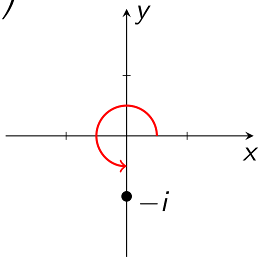

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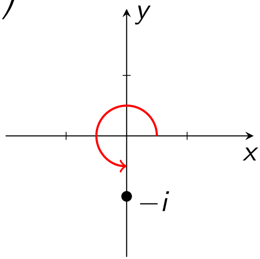

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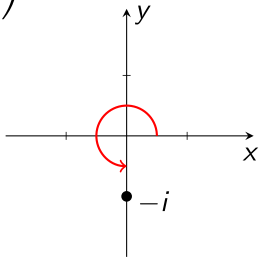

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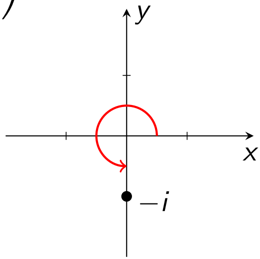

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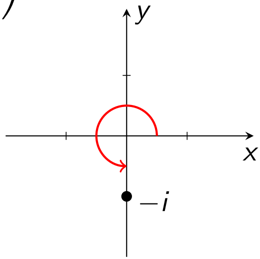

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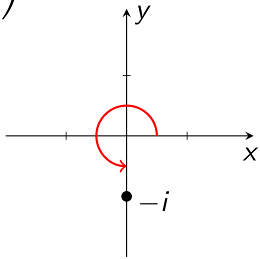

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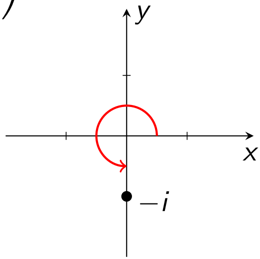

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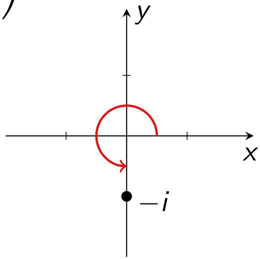

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$$z = \sqrt{-i}$$

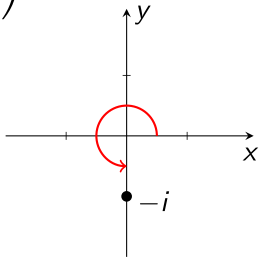
$$\left(\sqrt{-i}\,\right)_k = \sqrt{1} \cdot \left(\cos \frac{\frac{3}{2}\pi + 2k\pi}{2} + i \sin \frac{\frac{3}{2}\pi + 2k\pi}{2} \right)$$

$$\left(\sqrt{-i}\,\right)_0 = \cos \frac{3}{4}\pi + i \sin \frac{3}{4}\pi$$

$$\left(\sqrt{-i}\,\right)_0 = -\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} i$$

$$\left(\sqrt{-i}\,\right)_1 = \cos \frac{7}{4}\pi + i \sin \frac{7}{4}\pi$$

$$\left(\sqrt{-i}\,\right)_1 = \frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2} i$$



$$r = 1 \qquad \varphi = \frac{3}{2}\pi$$

$$\boxed{\sqrt[n]{z} = \sqrt[n]{r}\left(\cos \frac{\varphi + 2k\pi}{n} + i \sin \frac{\varphi + 2k\pi}{n} \right)}$$

$$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i \qquad z^6 + 3z^4 + z^2 + 3 = 0$$

$$z^2 = -i$$

$$\boxed{z_5 = -\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} i}$$

$$z = \sqrt{-i}$$

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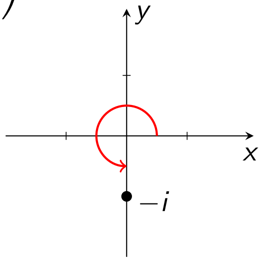

$$r = 1 \qquad \varphi = \frac{3}{2}\pi$$

$$\sqrt[n]{z} = \sqrt[n]{r}\left(\cos \frac{\varphi + 2k\pi}{n} + i \sin \frac{\varphi + 2k\pi}{n} \right)$$

$$z^2 = t, \quad t_1 = -3, \quad t_2 = i, \quad t_3 = -i \qquad\qquad z^6 + 3z^4 + z^2 + 3 = 0$$

$$z^2 = -i \qquad \boxed{z_5 = -\frac{\sqrt{2}}{2} + \frac{\sqrt{2}}{2} i} \qquad z_6 = \frac{\sqrt{2}}{2} - \frac{\sqrt{2}}{2} i$$

$$z = \sqrt{-i}$$

$$\left(\sqrt{-i}\,\right)_k = \sqrt{1} \cdot \left(\cos \frac{\frac{3}{2}\pi + 2k\pi}{2} + i \sin \frac{\frac{3}{2}\pi + 2k\pi}{2} \right)$$

$$\left(\sqrt{-i}\,\right)_0 = \cos \frac{3}{4}\pi + i \sin \frac{3}{4}\pi$$

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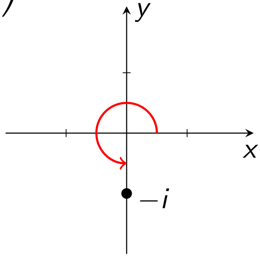

$$r = 1 \qquad \varphi = \frac{3}{2}\pi$$

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$z^2 = -i$

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$$\left(\sqrt{-i}\,\right)_k = \sqrt{1} \cdot \left(\cos \frac{\frac{3}{2}\pi + 2k\pi}{2} + i \sin \frac{\frac{3}{2}\pi + 2k\pi}{2} \right)$$

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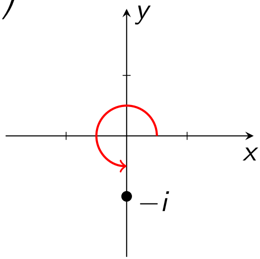
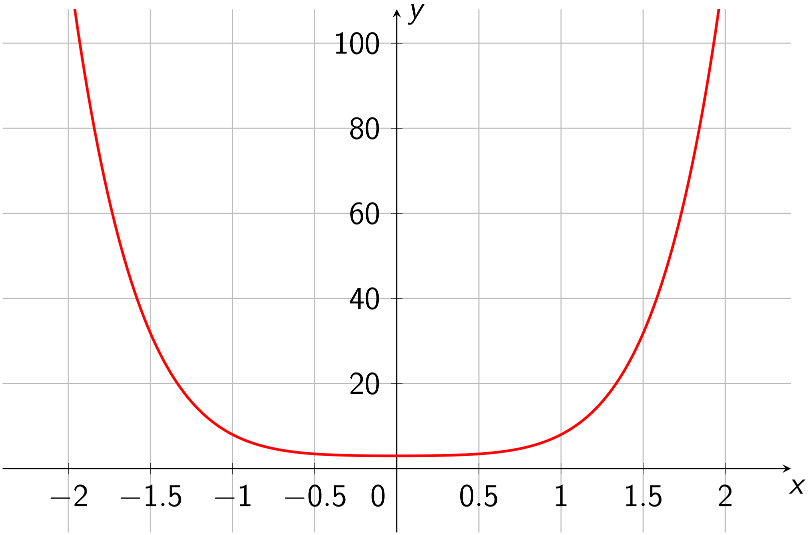


$r = 1 \qquad \varphi = \frac{3}{2}\pi$

$$\sqrt[n]{z} = \sqrt[n]{r}\left(\cos \frac{\varphi + 2k\pi}{n} + i \sin \frac{\varphi + 2k\pi}{n} \right)$$



$$f(x) = x^6 + 3x^4 + x^2 + 3$$