Neodređeni integral – 2. dio

MATEMATIKA 2

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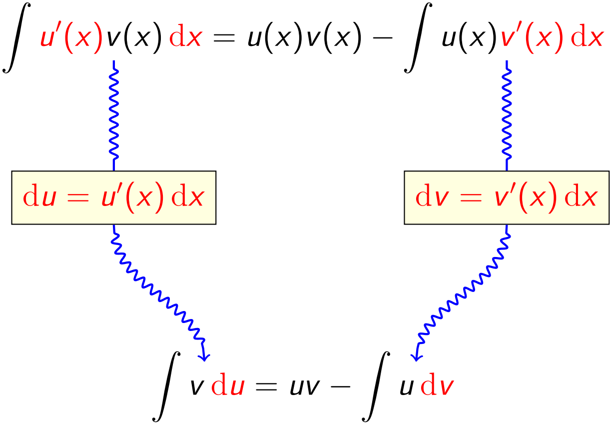
Sadržaj

prvi zadatak

Parcijalna integracija



$$\int u'(x)v(x)\,\mathrm{d}x = u(x)v(x) - \int u(x)v'(x)\,\mathrm{d}x$$

$$\boxed{\mathrm{d}u = u'(x)\,\mathrm{d}x} \qquad \boxed{\mathrm{d}v = v'(x)\,\mathrm{d}x}$$

$$\int v\,\mathrm{d}u = uv - \int u\,\mathrm{d}v$$

Zadatak 1

Riješite neodređeni integral $\int \ln x \, \mathrm{d}x$.

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Rješenje

$$\int \ln x \,\mathrm{d}x =$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 1

Riješite neodređeni integral $\displaystyle\int \ln x \,\mathrm{d}x$.

Rješenje

$$\int \ln x \,\mathrm{d}x = \int 1 \cdot \ln x \,\mathrm{d}x$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

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$$\int \ln x \, \mathrm{d}x = \int 1 \cdot \ln x \, \mathrm{d}x = \int (x)' \ln x \, \mathrm{d}x$$

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$$\int \ln x \, \mathrm{d}x = \int 1 \cdot \ln x \, \mathrm{d}x = \int (x)' \ln x \, \mathrm{d}x =$$

$$= x \ln x$$

$$\boxed{\int f'(x)g(x) \, \mathrm{d}x = f(x)g(x) - \int f(x)g'(x) \, \mathrm{d}x}$$

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$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

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Zadatak 1

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Rješenje

$$
\begin{aligned}
\int \ln x \, \mathrm{d}x &= \int 1 \cdot \ln x \, \mathrm{d}x = \int (x)' \ln x \, \mathrm{d}x = \\
&= x \ln x - \int x \cdot (\ln x)' \, \mathrm{d}x = x \ln x - \int x \cdot \frac{1}{x} \, \mathrm{d}x = \\
&= x \ln x - \int \mathrm{d}x = x \ln x - x
\end{aligned}
$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

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$$\int \ln x \, \mathrm{d}x = \int 1 \cdot \ln x \, \mathrm{d}x = \int (x)' \ln x \, \mathrm{d}x =$$

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$$= x \ln x - \int \mathrm{d}x = x \ln x - x + C$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

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$$= x \ln x - \int \mathrm{d}x = x \ln x - x + C, \quad C \in \mathbb{R}$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

drugi zadatak

Zadatak 2

Riješite neodređeni integral $\int x^4 \ln 8x \, \mathrm{d}x$.

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$$\int x^4 \ln 8x \, \mathrm{d}x = \int \left(\frac{x^5}{5}\right)' \ln 8x \, \mathrm{d}x$$

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$$= \frac{x^5}{5} \ln 8x$$

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$$= \frac{x^5}{5} \ln 8x - \int \frac{x^5}{5} \cdot$$

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$$= \frac{x^5}{5} \ln 8x - \int \frac{x^5}{5} \cdot \frac{1}{8x}$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

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$$= \frac{x^5}{5} \ln 8x - \int \frac{x^5}{5} \cdot \frac{1}{8x} \cdot 8$$

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Riješite neodređeni integral $\int x^4 \ln 8x \, \mathrm{d}x$.

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$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

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$$= \frac{x^5}{5} \ln 8x - \int \frac{x^5}{5} \cdot \frac{1}{8x} \cdot 8 \,\mathrm{d}x = \frac{x^5}{5} \ln 8x - \frac{1}{5} \int x^4 \,\mathrm{d}x$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 2

Riješite neodređeni integral $\int x^4 \ln 8x \, \mathrm{d}x$.

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$$= \frac{x^5}{5} \ln 8x - \int \frac{x^5}{5} \cdot \frac{1}{8x} \cdot 8 \, \mathrm{d}x = \frac{x^5}{5} \ln 8x - \frac{1}{5} \int x^4 \, \mathrm{d}x =$$

$$= \frac{x^5}{5} \ln 8x - \frac{1}{5}$$

$$\boxed{\int f'(x)g(x) \, \mathrm{d}x = f(x)g(x) - \int f(x)g'(x) \, \mathrm{d}x}$$

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$$= \frac{x^5}{5} \ln 8x - \frac{1}{5} \cdot \frac{x^5}{5}$$

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$$= \frac{x^5}{5} \ln 8x - \int \frac{x^5}{5} \cdot \frac{1}{8x} \cdot 8 \,\mathrm{d}x = \frac{x^5}{5} \ln 8x - \frac{1}{5} \int x^4 \,\mathrm{d}x =$$

$$= \frac{x^5}{5} \ln 8x - \frac{1}{5} \cdot \frac{x^5}{5} + C$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 2

Riješite neodređeni integral $\int x^4 \ln 8x \,\mathrm{d}x$.

Rješenje

$$\int x^4 \ln 8x \,\mathrm{d}x = \int \left(\frac{x^5}{5}\right)' \ln 8x \,\mathrm{d}x = \frac{x^5}{5} \ln 8x - \int \frac{x^5}{5} \big(\ln 8x\big)' \,\mathrm{d}x =$$

$$= \frac{x^5}{5} \ln 8x - \int \frac{x^5}{5} \cdot \frac{1}{8x} \cdot 8 \,\mathrm{d}x = \frac{x^5}{5} \ln 8x - \frac{1}{5} \int x^4 \,\mathrm{d}x =$$

$$= \frac{x^5}{5} \ln 8x - \frac{1}{5} \cdot \frac{x^5}{5} + C = \frac{x^5}{5} \ln 8x - \frac{1}{25} x^5 + C$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 2

Riješite neodređeni integral $\int x^4 \ln 8x \, \mathrm{d}x$.

Rješenje

$$\int x^4 \ln 8x \, \mathrm{d}x = \int \left(\frac{x^5}{5}\right)' \ln 8x \, \mathrm{d}x = \frac{x^5}{5} \ln 8x - \int \frac{x^5}{5} \left(\ln 8x\right)' \mathrm{d}x =$$

$$= \frac{x^5}{5} \ln 8x - \int \frac{x^5}{5} \cdot \frac{1}{8x} \cdot 8 \, \mathrm{d}x = \frac{x^5}{5} \ln 8x - \frac{1}{5} \int x^4 \, \mathrm{d}x =$$

$$= \frac{x^5}{5} \ln 8x - \frac{1}{5} \cdot \frac{x^5}{5} + C = \frac{x^5}{5} \ln 8x - \frac{1}{25} x^5 + C, \quad C \in \mathbb{R}$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

treći zadatak

Zadatak 3

Riješite neodređeni integral $\displaystyle\int x \cos 3x \,\mathrm{d}x$.

Zadatak 3

Riješite neodređeni integral $\int x\cos 3x \,\mathrm{d}x$.

Rješenje

$$\int x\cos 3x \,\mathrm{d}x =$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x \cos 3x \, \mathrm{d}x$.

Rješenje

$$\int x \cos 3x \, \mathrm{d}x = \int x \cdot \left(\frac{1}{3} \sin 3x\right)' \mathrm{d}x$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 3

Riješite nec

$$\int \cos 3x \, \mathrm{d}x =$$

Rješenje

$$\int \qquad \int \bigg(3 \qquad \bigg)$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite nec

$$\int \cos 3x \, \mathrm{d}x = \Bigg[\quad 3x = t$$

Rješenje

$$\int \qquad \int \Big(3 \qquad \Big)$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite nec

$$\int \cos 3x \,\mathrm{d}x = \Bigg[\quad 3x = t \,/\, '$$

Rješenje

$$\int \qquad\qquad \int \Big(3 \qquad\qquad \Big)$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite neo

$$\int \cos 3x \,\mathrm{d}x = \left[\begin{array}{l} \quad 3x = t \,/\, ' \\ 3 \end{array} \right.$$

Rješenje

$$\int \qquad \int \left(3 \qquad \right)$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite nec

$$\int \cos 3x \, \mathrm{d}x = \left[\begin{array}{l} \quad 3x = t \,/\,' \\ 3\,\mathrm{d}x \end{array} \right.$$

Rješenje

$$\int \qquad\qquad \int \quad \Big(3 \qquad\qquad \Big)$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite ne

$$\int \cos 3x \,\mathrm{d}x = \left[\begin{array}{r} 3x = t \,/\, ' \\ 3\,\mathrm{d}x = \end{array}\right.$$

Rješenje

$$\int \qquad\qquad \int \left(3 \qquad \right)$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite nec

$$\int \cos 3x \,\mathrm{d}x = \left[\begin{array}{r} 3x = t \,/\, ' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array}\right.$$

Rješenje

$$\int \qquad \int \left(3 \qquad \right)$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite nec

$$\int \cos 3x \, \mathrm{d}x = \begin{bmatrix} 3x = t \,/\, ' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{bmatrix} =$$

Rješenje

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 3

Riješite nec

$$\int \cos 3x \,\mathrm{d}x = \begin{bmatrix} 3x = t \,/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{bmatrix} = \int$$

Rješenje

$$\int \qquad\qquad \int \Big(3 \qquad\qquad \Big)$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite ne

$$\int \cos 3x \,\mathrm{d}x = \begin{bmatrix} 3x = t \,/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{bmatrix} = \int \cos t$$

Rješenje

$$\int \qquad \int \left(3 \qquad \right)$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite nec

Rješenje

$$\int \cos 3x \,\mathrm{d}x = \begin{bmatrix} 3x = t \,/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{bmatrix} = \int \cos t \cdot \frac{\mathrm{d}t}{3}$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite nec

Rješenje

$$\int \cos 3x \,\mathrm{d}x = \left[\begin{array}{c} 3x = t \,/\, ' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \cos t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3} \int \cos t \,\mathrm{d}t$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 3

Riješite nec

Rješenje

$$\int \cos 3x \,\mathrm{d}x = \begin{bmatrix} 3x = t \,/\, ' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{bmatrix} = \int \cos t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3} \int \cos t \,\mathrm{d}t = \frac{1}{3} \sin t$$

$$\int \qquad \int \Big(3 \qquad \Big)$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 3

Riješite nec

$$\int \cos 3x \,\mathrm{d}x = \left[\begin{array}{c} 3x = t \,/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \cos t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3} \int \cos t \,\mathrm{d}t = \frac{1}{3} \sin t + C$$

Rješenje

$$\int \qquad \int \left(3 \qquad \right)$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 3

Riješite nec

$$\int \cos 3x\,\mathrm{d}x = \left[\begin{array}{c} 3x = t \,/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \cos t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3}\int \cos t\,\mathrm{d}t = \frac{1}{3}\sin t + C = \frac{1}{3}\sin 3x + C$$

Rješenje

$$\int \qquad \int \Big(3 \qquad \Big)$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite nec

Rješenje

$$\int \cos 3x \, \mathrm{d}x = \begin{bmatrix} 3x = t \,/\,' \\ 3 \, \mathrm{d}x = \mathrm{d}t \end{bmatrix} = \int \cos t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3} \int \cos t \, \mathrm{d}t = \frac{1}{3} \sin t + C = \frac{1}{3} \sin 3x + C, \quad C \in \mathbb{R}$$

$$\int \qquad \int \left(3 \qquad \right)$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x \cos 3x \, \mathrm{d}x$.

Rješenje

$$\int x \cos 3x \, \mathrm{d}x = \int x \cdot \left(\frac{1}{3} \sin 3x \right)' \mathrm{d}x =$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x \cos 3x \, \mathrm{d}x$.

Rješenje

$$\int x \cos 3x \, \mathrm{d}x = \int x \cdot \left(\frac{1}{3} \sin 3x \right)' \mathrm{d}x =$$

$$= x \cdot \frac{1}{3} \sin 3x$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x \cos 3x \, \mathrm{d}x$.

Rješenje

$$\int x \cos 3x \, \mathrm{d}x = \int x \cdot \left(\frac{1}{3} \sin 3x \right)' \mathrm{d}x =$$

$$= x \cdot \frac{1}{3} \sin 3x -$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x \cos 3x \,\mathrm{d}x$.

Rješenje

$$\int x \cos 3x \,\mathrm{d}x = \int x \cdot \left(\frac{1}{3} \sin 3x\right)' \mathrm{d}x =$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \,\mathrm{d}x$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\displaystyle\int x\cos 3x\,\mathrm{d}x$.

Rješenje

$$\int x\cos 3x\,\mathrm{d}x = \int x\cdot\left(\frac{1}{3}\sin 3x\right)'\mathrm{d}x =$$

$$= x\cdot\frac{1}{3}\sin 3x - \int (x)'\cdot\frac{1}{3}\sin 3x\,\mathrm{d}x = \frac{x}{3}\sin 3x$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x \cos 3x \, \mathrm{d}x$.

Rješenje

$$\int x \cos 3x \, \mathrm{d}x = \int x \cdot \left(\frac{1}{3} \sin 3x \right)' \mathrm{d}x =$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \, \mathrm{d}x = \frac{x}{3} \sin 3x -$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x\cos 3x\,\mathrm{d}x$.

Rješenje

$$\int x\cos 3x\,\mathrm{d}x = \int x\cdot\left(\frac{1}{3}\sin 3x\right)'\mathrm{d}x =$$

$$= x\cdot\frac{1}{3}\sin 3x - \int (x)'\cdot\frac{1}{3}\sin 3x\,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x\,\mathrm{d}x$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x \cos 3x \,\mathrm{d}x$.

Rješenje

$$\int x \cos 3x \,\mathrm{d}x = \int x \cdot \left(\frac{1}{3}\sin 3x\right)' \mathrm{d}x =$$

$$= x \cdot \frac{1}{3}\sin 3x - \int (x)' \cdot \frac{1}{3}\sin 3x \,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x \cos 3x \, \mathrm{d}x$.

Rješenje

$$\int x \cos 3x \, \mathrm{d}x = \int x \cdot \left(\frac{1}{3} \sin 3x \right)' \mathrm{d}x =$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \, \mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \, \mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x \,\mathrm{d}x =$$

Rješe

$$= x \cdot \frac{1}{3}\sin 3x - \int (x)' \cdot \frac{1}{3}\sin 3x \,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x - \frac{1}{3} \cdot$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x \,\mathrm{d}x = \Bigg[\quad 3x = t$$

Rješe

$$= x \cdot \frac{1}{3}\sin 3x - \int (x)' \cdot \frac{1}{3}\sin 3x \,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x - \frac{1}{3}\cdot$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x \, \mathrm{d}x = \Bigg[\quad 3x = t \; / \; '$$

Rješe

$$\int \qquad\qquad \int \quad \Big(3 \qquad \Big)$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \, \mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \, \mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x \,\mathrm{d}x = \left[\begin{matrix} 3x = t \,/\,' \\ 3 \end{matrix} \right.$$

Rješe

$$\int \qquad \int \left(3 \qquad \right)$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \,\mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x\,\mathrm{d}x = \left[\begin{array}{l} \quad 3x = t \;/\,' \\ 3\,\mathrm{d}x \end{array}\right.$$

Rješe

$$\int \qquad \int \left(3 \qquad \right)$$

$$= x\cdot\frac{1}{3}\sin 3x - \int (x)'\cdot\frac{1}{3}\sin 3x\,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x\,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x - \frac{1}{3}\cdot$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x \,\mathrm{d}x = \left[\begin{array}{r} 3x = t \,/\,' \\ 3\,\mathrm{d}x = \end{array}\right.$$

Rješe

$$\int \qquad \int \left(3 \qquad \right)$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \,\mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x\,\mathrm{d}x = \left[\begin{array}{r} 3x = t \;/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array}\right.$$

Rješe

$$\int \qquad \int \left(3 \qquad \right)$$

$$= x \cdot \frac{1}{3}\sin 3x - \int (x)' \cdot \frac{1}{3}\sin 3x\,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x\,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x - \frac{1}{3}\cdot$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x \,\mathrm{d}x = \left[\begin{array}{c} 3x = t \;/\;' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

Rješe

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \,\mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x \,\mathrm{d}x = \left[\begin{array}{r} 3x = t \;/\;' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array} \right] = \int$$

Rješe

$$\int \qquad \int \Big(3 \qquad \Big)$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \,\mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x\,\mathrm{d}x = \left[\begin{array}{r} 3x = t \,/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \sin t$$

Rješe

$$\int \qquad\qquad \int \quad \Big(3 \qquad \Big)$$

$$= x \cdot \frac{1}{3}\sin 3x - \int (x)' \cdot \frac{1}{3}\sin 3x\,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x\,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x - \frac{1}{3}\cdot$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x\,\mathrm{d}x = \left[\begin{array}{r} 3x = t \;/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \sin t \cdot \frac{\mathrm{d}t}{3}$$

Rješe

$$\int \qquad\qquad \int \left(3 \qquad\qquad \right)$$

$$= x \cdot \frac{1}{3}\sin 3x - \int (x)' \cdot \frac{1}{3}\sin 3x\,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x\,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x - \frac{1}{3} \cdot$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zada

Riješi

$$\int \sin 3x \,\mathrm{d}x = \left[\begin{array}{r} 3x = t \,/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \sin t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3}\int \sin t \,\mathrm{d}t$$

Rješe

$$\int \qquad \int \Big(3 \qquad \Big)$$

$$= x \cdot \frac{1}{3}\sin 3x - \int (x)' \cdot \frac{1}{3}\sin 3x \,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x - \frac{1}{3}\cdot$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zada

Riješi

Rješe

$$\int \sin 3x \,\mathrm{d}x = \left[\begin{array}{c} 3x = t \,/\, ' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \sin t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3} \int \sin t \,\mathrm{d}t = -\frac{1}{3} \cdot \cos t$$

$$\int \qquad \int \left(3 \qquad \right)$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \,\mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zada

Riješi

Rješe

$$\int \sin 3x\,\mathrm{d}x = \left[\begin{array}{r} 3x = t \;/\;' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \sin t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3}\int \sin t\,\mathrm{d}t = -\frac{1}{3}\cdot \cos t + C$$

$$= x\cdot\frac{1}{3}\sin 3x - \int (x)'\cdot\frac{1}{3}\sin 3x\,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x\,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x - \frac{1}{3}\cdot$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zada

Riješi

Rješe

$$\int \sin 3x \,\mathrm{d}x = \left[\begin{array}{c} 3x = t \,/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \sin t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3}\int \sin t \,\mathrm{d}t = -\frac{1}{3}\cdot \cos t + C = -\frac{1}{3}\cos 3x + C$$

$$= x \cdot \frac{1}{3}\sin 3x - \int (x)' \cdot \frac{1}{3}\sin 3x \,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x - \frac{1}{3}\cdot$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zada

Riješi

Rješe

$$\int \sin 3x \,\mathrm{d}x = \begin{bmatrix} 3x = t \,/\, ' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{bmatrix} = \int \sin t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3} \int \sin t \,\mathrm{d}t = -\frac{1}{3} \cdot \cos t + C = -\frac{1}{3} \cos 3x + C, \quad C \in \mathbb{R}$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \,\mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zada

Riješi

Rješe

$$\int \sin 3x \,\mathrm{d}x = \left[\begin{array}{c} 3x = t \,/\,' \\ 3\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \sin t \cdot \frac{\mathrm{d}t}{3} =$$

$$= \frac{1}{3} \int \sin t \,\mathrm{d}t = -\frac{1}{3} \cdot \cos t + C = -\frac{1}{3} \cos 3x + C, \quad C \in \mathbb{R}$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \,\mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \,\mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot \frac{-1}{3} \cos 3x$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x \cos 3x \, \mathrm{d}x$.

Rješenje

$$\int x \cos 3x \, \mathrm{d}x = \int x \cdot \left(\frac{1}{3} \sin 3x\right)' \mathrm{d}x =$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \, \mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \, \mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot \frac{-1}{3} \cos 3x + C$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x \cos 3x \, \mathrm{d}x$.

Rješenje

$$\int x \cos 3x \, \mathrm{d}x = \int x \cdot \left(\frac{1}{3} \sin 3x \right)' \mathrm{d}x =$$

$$= x \cdot \frac{1}{3} \sin 3x - \int (x)' \cdot \frac{1}{3} \sin 3x \, \mathrm{d}x = \frac{x}{3} \sin 3x - \frac{1}{3} \int \sin 3x \, \mathrm{d}x =$$

$$= \frac{x}{3} \sin 3x - \frac{1}{3} \cdot \frac{-1}{3} \cos 3x + C = \frac{x}{3} \sin 3x + \frac{1}{9} \cos 3x + C$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 3

Riješite neodređeni integral $\int x\cos 3x\,\mathrm{d}x$.

Rješenje

$$\int x\cos 3x\,\mathrm{d}x = \int x\cdot\left(\frac{1}{3}\sin 3x\right)'\mathrm{d}x =$$

$$= x\cdot\frac{1}{3}\sin 3x - \int (x)'\cdot\frac{1}{3}\sin 3x\,\mathrm{d}x = \frac{x}{3}\sin 3x - \frac{1}{3}\int\sin 3x\,\mathrm{d}x =$$

$$= \frac{x}{3}\sin 3x - \frac{1}{3}\cdot\frac{-1}{3}\cos 3x + C = \frac{x}{3}\sin 3x + \frac{1}{9}\cos 3x + C, \quad C\in\mathbb{R}$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

četvrti zadatak

Zadatak 4

Riješite neodređeni integral $\int \left(x^2 + x\right) e^{5x}\,\mathrm{d}x$.

Zadatak 4

Riješite neodređeni integral $\int \left(x^2 + x\right) e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int \left(x^2 + x\right) e^{5x}\,\mathrm{d}x =$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x$.

Rješenje

$$\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x = \int \left(x^2 + x\right) \cdot$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x$.

Rješenje

$$\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x = \int \left(x^2 + x\right) \cdot \left(\frac{1}{5} e^{5x}\right)'$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x$.

Rješenje

$$\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x = \int \left(x^2 + x\right) \cdot \left(\frac{1}{5} e^{5x}\right)' \mathrm{d}x$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x$.

Rješenje

$$\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x = \int \left(x^2 + x\right) \cdot \left(\frac{1}{5} e^{5x}\right)' \mathrm{d}x =$$

$$= \left(x^2 + x\right) \cdot \frac{1}{5} e^{5x}$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x$*.*

Rješenje

$$\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x = \int \left(x^2 + x\right) \cdot \left(\frac{1}{5} e^{5x}\right)' \mathrm{d}x =$$

$$= \left(x^2 + x\right) \cdot \frac{1}{5} e^{5x} -$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2+x\right)e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int \left(x^2+x\right)e^{5x}\,\mathrm{d}x = \int \left(x^2+x\right)\cdot \left(\frac{1}{5}e^{5x}\right)'\mathrm{d}x =$$

$$= \left(x^2+x\right)\cdot\frac{1}{5}e^{5x} - \int \left(x^2+x\right)'\cdot\frac{1}{5}e^{5x}\,\mathrm{d}x$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2 + x\right) e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int \left(x^2 + x\right) e^{5x}\,\mathrm{d}x = \int \left(x^2 + x\right) \cdot \left(\frac{1}{5} e^{5x}\right)' \mathrm{d}x =$$

$$= \left(x^2 + x\right) \cdot \frac{1}{5} e^{5x} - \int \left(x^2 + x\right)' \cdot \frac{1}{5} e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5} x^2 + \frac{1}{5} x\right) e^{5x}$$

$$\boxed{\int f'(x) g(x)\,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x)\,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int (x^2+x)\,e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int (x^2+x)\,e^{5x}\,\mathrm{d}x = \int (x^2+x)\cdot\left(\frac{1}{5}e^{5x}\right)'\mathrm{d}x =$$

$$= (x^2+x)\cdot\frac{1}{5}e^{5x} - \int (x^2+x)'\cdot\frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} -$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int (x^2 + x) e^{5x} \, \mathrm{d}x$.

Rješenje

$$\int (x^2 + x) e^{5x} \, \mathrm{d}x = \int (x^2 + x) \cdot \left(\frac{1}{5} e^{5x}\right)' \mathrm{d}x =$$

$$= (x^2 + x) \cdot \frac{1}{5} e^{5x} - \int (x^2 + x)' \cdot \frac{1}{5} e^{5x} \, \mathrm{d}x =$$

$$= \left(\frac{1}{5} x^2 + \frac{1}{5} x\right) e^{5x} - \frac{1}{5}$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2 + x\right) e^{5x} \, \mathrm{d}x$.

Rješenje

$$\int \left(x^2 + x\right) e^{5x} \, \mathrm{d}x = \int \left(x^2 + x\right) \cdot \left(\frac{1}{5} e^{5x}\right)' \mathrm{d}x =$$

$$= \left(x^2 + x\right) \cdot \frac{1}{5} e^{5x} - \int \left(x^2 + x\right)' \cdot \frac{1}{5} e^{5x} \, \mathrm{d}x =$$

$$= \left(\frac{1}{5} x^2 + \frac{1}{5} x\right) e^{5x} - \frac{1}{5} \int$$

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\displaystyle\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x$.

Rješenje

$$\int \left(x^2 + x\right) e^{5x} \,\mathrm{d}x = \int \left(x^2 + x\right) \cdot \left(\frac{1}{5} e^{5x}\right)' \mathrm{d}x =$$

$$= \left(x^2 + x\right) \cdot \frac{1}{5} e^{5x} - \int \left(x^2 + x\right)' \cdot \frac{1}{5} e^{5x} \,\mathrm{d}x =$$

$$= \left(\frac{1}{5} x^2 + \frac{1}{5} x\right) e^{5x} - \frac{1}{5} \int (2x + 1)$$

$$\boxed{\int f'(x) g(x) \,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2+x\right)e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int \left(x^2+x\right)e^{5x}\,\mathrm{d}x = \int \left(x^2+x\right)\cdot\left(\frac{1}{5}e^{5x}\right)'\mathrm{d}x =$$

$$= \left(x^2+x\right)\cdot\frac{1}{5}e^{5x} - \int \left(x^2+x\right)'\cdot\frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} - \frac{1}{5}\int (2x+1)e^{5x}\,\mathrm{d}x$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\displaystyle\int \left(x^2+x\right)e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int \left(x^2+x\right)e^{5x}\,\mathrm{d}x = \int \left(x^2+x\right)\cdot\left(\frac{1}{5}e^{5x}\right)'\mathrm{d}x =$$

$$= \left(x^2+x\right)\cdot\frac{1}{5}e^{5x} - \int \left(x^2+x\right)'\cdot\frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} - \frac{1}{5}\int (2x+1)e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x}$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2+x\right)e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int \left(x^2+x\right)e^{5x}\,\mathrm{d}x = \int \left(x^2+x\right)\cdot\left(\frac{1}{5}e^{5x}\right)'\mathrm{d}x =$$

$$= \left(x^2+x\right)\cdot\frac{1}{5}e^{5x} - \int \left(x^2+x\right)'\cdot\frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} - \frac{1}{5}\int (2x+1)e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} -$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\displaystyle\int \left(x^2 + x\right) e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int \left(x^2 + x\right) e^{5x}\,\mathrm{d}x = \int \left(x^2 + x\right) \cdot \left(\frac{1}{5} e^{5x}\right)' \mathrm{d}x =$$

$$= \left(x^2 + x\right) \cdot \frac{1}{5} e^{5x} - \int \left(x^2 + x\right)' \cdot \frac{1}{5} e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5} x^2 + \frac{1}{5} x\right) e^{5x} - \frac{1}{5} \int (2x + 1) e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5} x^2 + \frac{1}{5} x\right) e^{5x} - \frac{1}{5}$$

$$\boxed{\int f'(x) g(x)\,\mathrm{d}x = f(x) g(x) - \int f(x) g'(x)\,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int \left(x^2+x\right) e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int \left(x^2+x\right) e^{5x}\,\mathrm{d}x = \int \left(x^2+x\right)\cdot\left(\frac{1}{5}e^{5x}\right)'\mathrm{d}x =$$

$$= \left(x^2+x\right)\cdot\frac{1}{5}e^{5x} - \int \left(x^2+x\right)'\cdot\frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} - \frac{1}{5}\int (2x+1)e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} - \frac{1}{5}\int$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int (x^2+x)e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int (x^2+x)e^{5x}\,\mathrm{d}x = \int (x^2+x)\cdot\left(\frac{1}{5}e^{5x}\right)'\mathrm{d}x =$$

$$= (x^2+x)\cdot\frac{1}{5}e^{5x} - \int (x^2+x)'\cdot\frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} - \frac{1}{5}\int (2x+1)e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} - \frac{1}{5}\int (2x+1)\cdot\left(\frac{1}{5}e^{5x}\right)'\mathrm{d}x$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

Zadatak 4

Riješite neodređeni integral $\int (x^2+x)e^{5x}\,\mathrm{d}x$.

Rješenje

$$\int (x^2+x)e^{5x}\,\mathrm{d}x = \int (x^2+x)\cdot\left(\frac{1}{5}e^{5x}\right)'\mathrm{d}x =$$

$$= (x^2+x)\cdot\frac{1}{5}e^{5x} - \int (x^2+x)'\cdot\frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} - \frac{1}{5}\int (2x+1)e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2+\frac{1}{5}x\right)e^{5x} - \frac{1}{5}\int (2x+1)\cdot\left(\frac{1}{5}e^{5x}\right)'\mathrm{d}x =$$

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5} e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \Big[\qquad \qquad \qquad \qquad \qquad \qquad \Big]$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} \qquad\qquad\qquad\qquad \right]$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \qquad\qquad\qquad\qquad \right]$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x\right]$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \, \mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} -$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\qquad\qquad\qquad\right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x \qquad\qquad\right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \, \mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \qquad \right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \, \mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2 \cdot \frac{1}{5}e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5}\int 2 \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2 \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x =$$

$$= \left(\qquad\qquad\qquad\qquad \right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5}\int 2 \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 \qquad\qquad\qquad\qquad \right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5}\int 2 \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x \qquad\quad \right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2 \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5}\int 2 \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25}\int$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \, \mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2 \cdot \frac{1}{5}e^{5x} \, \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \int e^{5x} \, \mathrm{d}x$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \, \mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2 \cdot \frac{1}{5}e^{5x} \, \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \int e^{5x} \, \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2 \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \int e^{5x} \,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \cdot$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5}\int 2 \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25}\int e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \cdot \frac{1}{5}e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\, \mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2 \cdot \frac{1}{5}e^{5x}\, \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \int e^{5x}\, \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \cdot \frac{1}{5}e^{5x} + C$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \, \mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2 \cdot \frac{1}{5}e^{5x} \, \mathrm{d}x =$$

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$$= \left(\qquad\qquad\qquad\qquad \right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5}\int 2 \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25}\int e^{5x}\,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \cdot \frac{1}{5}e^{5x} + C =$$

$$= \left(\frac{1}{5}x^2 \qquad\qquad\qquad\qquad \right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5}\int 2 \cdot \frac{1}{5}e^{5x}\,\mathrm{d}x =$$

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$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \cdot \frac{1}{5}e^{5x} + C =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x \qquad\qquad \right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

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$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \cdot \frac{1}{5}e^{5x} + C =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{3}{125}\right) e^{5x}$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2 \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \int e^{5x} \,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \cdot \frac{1}{5}e^{5x} + C =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{3}{125}\right) e^{5x} + C$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \int (2x+1) \cdot \left(\frac{1}{5}e^{5x}\right)' \mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \frac{1}{5} \cdot \left[(2x+1) \cdot \frac{1}{5}e^{5x} - \int (2x+1)' \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x\right] =$$

$$= \left(\frac{1}{5}x^2 + \frac{1}{5}x\right) e^{5x} - \left(\frac{2}{25}x + \frac{1}{25}\right) e^{5x} + \frac{1}{5} \int 2 \cdot \frac{1}{5}e^{5x} \,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \int e^{5x} \,\mathrm{d}x =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{1}{25}\right) e^{5x} + \frac{2}{25} \cdot \frac{1}{5}e^{5x} + C =$$

$$= \left(\frac{1}{5}x^2 + \frac{3}{25}x - \frac{3}{125}\right) e^{5x} + C, \quad C \in \mathbb{R}$$

peti zadatak

Zadatak 5

Riješite neodređeni integral $\displaystyle\int e^{2x} \sin 3x \, \mathrm{d}x$.

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x =$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \,\mathrm{d}x$*.*

Rješenje

$$\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x$$

$$\int e^{2x} \sin 3x \,\mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

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$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

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Rješenje

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$$\int e^{2x}\sin 3x\,\mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x\,\mathrm{d}x$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2} e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2} e^{2x} \sin 3x$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x -$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2} e^{2x} \right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2} e^{2x} \sin 3x - \int \frac{1}{2} e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x$$

Zadatak 5

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Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \,\mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x} \sin 3x \,\mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)' \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x -$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2} e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2} e^{2x} \sin 3x - \int \frac{1}{2} e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x =$$

$$= \frac{1}{2} e^{2x} \sin 3x - \frac{1}{2}$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \,\mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x} \sin 3x \,\mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)' \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{1}{2}\int$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{1}{2}\int e^{2x}$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x}\sin 3x\,\mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)'\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{1}{2}\int e^{2x} \cdot 3\cos 3x\,\mathrm{d}x$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x) g(x) \, \mathrm{d}x = f(x) g(x) - \int f(x) g'(x) \, \mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2} e^{2x} \right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2} e^{2x} \sin 3x - \int \frac{1}{2} e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x =$$

$$= \frac{1}{2} e^{2x} \sin 3x - \frac{1}{2} \int e^{2x} \cdot 3 \cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2} e^{2x} \sin 3x$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{1}{2}\int e^{2x} \cdot 3\cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x -$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{1}{2}\int e^{2x} \cdot 3\cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{3}{2}$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{1}{2}\int e^{2x} \cdot 3\cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{3}{2}\int e^{2x} \cos 3x \, \mathrm{d}x$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{1}{2}\int e^{2x} \cdot 3\cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{3}{2}\int e^{2x} \cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{1}{2}\int e^{2x} \cdot 3\cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{3}{2}\int e^{2x} \cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{3}{2}$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x}\sin 3x\,\mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \int \frac{1}{2}e^{2x}\cdot(\sin 3x)'\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{1}{2}\int e^{2x}\cdot 3\cos 3x\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int e^{2x}\cos 3x\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x}\sin 3x\,\mathrm{d}x$.

Rješenje

$$\boxed{\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)'\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{1}{2}\int e^{2x} \cdot 3\cos 3x\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int e^{2x}\cos 3x\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x\,\mathrm{d}x$$

Zadatak 5

Riješite neodređeni integral $\int e^{2x} \sin 3x \, \mathrm{d}x$.

Rješenje

$$\int f'(x)g(x)\,\mathrm{d}x = f(x)g(x) - \int f(x)g'(x)\,\mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \int \left(\frac{1}{2}e^{2x}\right)' \cdot \sin 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \int \frac{1}{2}e^{2x} \cdot (\sin 3x)' \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{1}{2}\int e^{2x} \cdot 3\cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{3}{2}\int e^{2x} \cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x} \sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \Bigg[\qquad\qquad\qquad\qquad\qquad\qquad \Bigg]$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\cdot\left[\frac{1}{2}e^{2x}\cos 3x \qquad\qquad\qquad\qquad\qquad\qquad \right]$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \left[\frac{1}{2}e^{2x}\cos 3x - \qquad\qquad\qquad\qquad \right]$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\cdot\left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x}\cdot(\cos 3x)' \,\mathrm{d}x\right]$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x} \cdot (\cos 3x)' \,\mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x} \cdot (\cos 3x)' \, \mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x -$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x} \cdot (\cos 3x)' \, \mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x} \cdot (\cos 3x)' \,\mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\cdot\left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x}\cdot(\cos 3x)' \, \mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int \frac{1}{2}e^{2x}$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x} \cdot (\cos 3x)' \,\mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int \frac{1}{2}e^{2x} \cdot (-3\sin 3x)$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x} \cdot (\cos 3x)' \,\mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int \frac{1}{2}e^{2x} \cdot (-3\sin 3x) \,\mathrm{d}x$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \, \mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x} \cdot (\cos 3x)' \, \mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int \frac{1}{2}e^{2x} \cdot (-3\sin 3x) \, \mathrm{d}x =$$

$$= \left(\qquad\qquad\qquad\qquad \right) e^{2x}$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x} \cdot (\cos 3x)' \,\mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int \frac{1}{2}e^{2x} \cdot (-3\sin 3x) \,\mathrm{d}x =$$

$$= \left(\frac{1}{2}\sin 3x \qquad\qquad\qquad\qquad \right) e^{2x}$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\cdot\left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x}\cdot(\cos 3x)' \,\mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int \frac{1}{2}e^{2x}\cdot(-3\sin 3x) \,\mathrm{d}x =$$

$$= \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right) e^{2x}$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\cdot\left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x}\cdot(\cos 3x)' \,\mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int \frac{1}{2}e^{2x}\cdot(-3\sin 3x)\,\mathrm{d}x =$$

$$= \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int \left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2} \cdot \left[\frac{1}{2}e^{2x}\cos 3x - \int \frac{1}{2}e^{2x} \cdot (\cos 3x)' \,\mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int \frac{1}{2}e^{2x} \cdot (-3\sin 3x) \,\mathrm{d}x =$$

$$= \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right) e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x \,\mathrm{d}x$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int\left(\frac{1}{2}e^{2x}\right)' \cdot \cos 3x \,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\cdot\left[\frac{1}{2}e^{2x}\cos 3x - \int\frac{1}{2}e^{2x}\cdot(\cos 3x)'\,\mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int\frac{1}{2}e^{2x}\cdot(-3\sin 3x)\,\mathrm{d}x =$$

$$= \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\underset{\uparrow}{\boxed{\int e^{2x}\sin 3x\,\mathrm{d}x}}$$

početni integral

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \cdots = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\int\left(\frac{1}{2}e^{2x}\right)'\cdot\cos 3x\,\mathrm{d}x =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{2}\cdot\left[\frac{1}{2}e^{2x}\cos 3x - \int\frac{1}{2}e^{2x}\cdot(\cos 3x)'\,\mathrm{d}x\right] =$$

$$= \frac{1}{2}e^{2x}\sin 3x - \frac{3}{4}e^{2x}\cos 3x + \frac{3}{2}\int\frac{1}{2}e^{2x}\cdot(-3\sin 3x)\,\mathrm{d}x =$$

$$= \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\boxed{\int e^{2x}\sin 3x\,\mathrm{d}x}$$

početni integral

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x$$

$$\int e^{2x}\sin 3x \,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x \,\mathrm{d}x$$

$$\int e^{2x}\sin 3x \,\mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} - \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x + \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} - \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x + \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x =$$

$$\int e^{2x} \sin 3x \,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right) e^{2x} - \frac{9}{4}\int e^{2x} \sin 3x \,\mathrm{d}x$$

$$\int e^{2x} \sin 3x \,\mathrm{d}x + \frac{9}{4}\int e^{2x} \sin 3x \,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right) e^{2x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} - \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x + \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x}$$

$$\frac{13}{4} \int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} - \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x + \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x}$$

$$\frac{13}{4} \int e^{2x} \sin 3x \, \mathrm{d}x =$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} - \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x + \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x}$$

$$\frac{13}{4} \int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x + \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x}$$

$$\frac{13}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} \;\Big/ \cdot \frac{4}{13}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} - \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x + \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x}$$

$$\frac{13}{4} \int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} \; \Big/ \cdot \frac{4}{13}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x + \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x}$$

$$\frac{13}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} \Big/ \cdot \frac{4}{13}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x =$$

$$\int e^{2x}\sin 3x \,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right) e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x \,\mathrm{d}x$$

$$\int e^{2x}\sin 3x \,\mathrm{d}x + \frac{9}{4}\int e^{2x}\sin 3x \,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right) e^{2x}$$

$$\frac{13}{4}\int e^{2x}\sin 3x \,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right) e^{2x} \Big/ \cdot \frac{4}{13}$$

$$\int e^{2x}\sin 3x \,\mathrm{d}x = \frac{4}{13}\cdot\left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right) e^{2x}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x + \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x}$$

$$\frac{13}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} \;\Big/ \cdot \frac{4}{13}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \frac{4}{13}\cdot\left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} + C$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x$$

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$$\int e^{2x}\sin 3x\,\mathrm{d}x = \frac{4}{13}\cdot\left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} + C$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} - \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x + \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x}$$

$$\frac{13}{4} \int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} \Big/ \cdot \frac{4}{13}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \frac{4}{13} \cdot \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} + C$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x =$$

$$\int e^{2x} \sin 3x \,\mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} - \frac{9}{4} \int e^{2x} \sin 3x \,\mathrm{d}x$$

$$\int e^{2x} \sin 3x \,\mathrm{d}x + \frac{9}{4} \int e^{2x} \sin 3x \,\mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x}$$

$$\frac{13}{4} \int e^{2x} \sin 3x \,\mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} \Big/ \cdot \frac{4}{13}$$

$$\int e^{2x} \sin 3x \,\mathrm{d}x = \frac{4}{13} \cdot \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} + C$$

$$\int e^{2x} \sin 3x \,\mathrm{d}x = \left(\qquad\qquad\qquad\qquad \right) e^{2x}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x + \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x}$$

$$\frac{13}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} \Big/ \cdot \frac{4}{13}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \frac{4}{13}\cdot\left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} + C$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{2}{13}\sin 3x \qquad\qquad\qquad\qquad\right)e^{2x}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x + \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x}$$

$$\frac{13}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} \Big/ \cdot \frac{4}{13}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \frac{4}{13}\cdot\left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} + C$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{2}{13}\sin 3x - \qquad\qquad\qquad\right)e^{2x}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} - \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x + \frac{9}{4} \int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x}$$

$$\frac{13}{4} \int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} \Big/ \cdot \frac{4}{13}$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \frac{4}{13} \cdot \left(\frac{1}{2} \sin 3x - \frac{3}{4} \cos 3x \right) e^{2x} + C$$

$$\int e^{2x} \sin 3x \, \mathrm{d}x = \left(\frac{2}{13} \sin 3x - \frac{3}{13} \cos 3x \right) e^{2x}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x + \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x}$$

$$\frac{13}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} \;{\color{blue}\Big/ \cdot \frac{4}{13}}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \frac{4}{13}\cdot\left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} + C$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{2}{13}\sin 3x - \frac{3}{13}\cos 3x\right)e^{2x} + C$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} - \frac{9}{4}\int e^{2x}\sin 3x\,\mathrm{d}x$$

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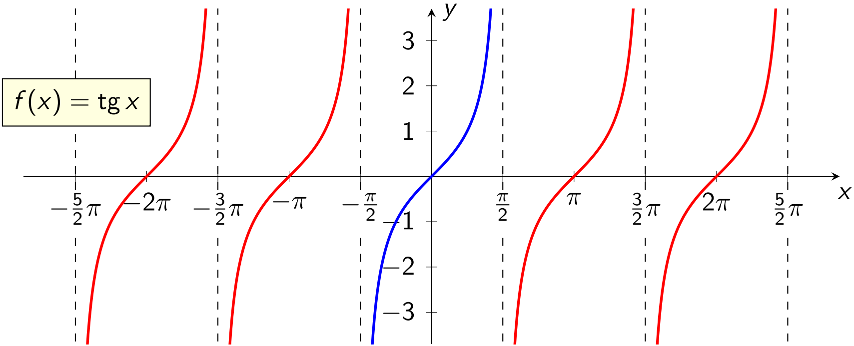
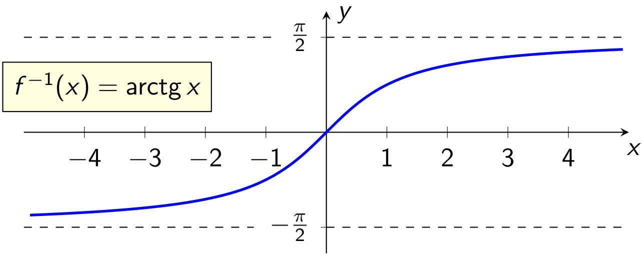
$$\frac{13}{4}\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} \;\Big/ \cdot \frac{4}{13}$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \frac{4}{13}\cdot\left(\frac{1}{2}\sin 3x - \frac{3}{4}\cos 3x\right)e^{2x} + C$$

$$\int e^{2x}\sin 3x\,\mathrm{d}x = \left(\frac{2}{13}\sin 3x - \frac{3}{13}\cos 3x\right)e^{2x} + C, \quad C \in \mathbb{R}$$

Funkcija tangens i njezina inverzna funkcija


$f(x) = \operatorname{tg} x$
y
3
2
1
−1
−2
−3
x
$-\frac{5}{2}\pi$
-2π
$-\frac{3}{2}\pi$
$-\pi$
$-\frac{\pi}{2}$
$\frac{\pi}{2}$
π
$\frac{3}{2}\pi$
2π
$\frac{5}{2}\pi$


$f^{-1}(x) = \operatorname{arctg} x$
y
$\frac{\pi}{2}$
$-\frac{\pi}{2}$
x
−4
−3
−2
−1
1
2
3
4

Funkcija

$$f:\left\langle -\frac{\pi}{2},\frac{\pi}{2}\right\rangle \to \mathbb{R},\quad f(x)=\operatorname{tg} x$$

je bijekcija i ima inverznu funkciju

$$f^{-1}:\mathbb{R}\to\left\langle -\frac{\pi}{2},\frac{\pi}{2}\right\rangle,\quad f^{-1}(x)=\operatorname{arctg} x.$$

Derivacija inverzne funkcije jednaka je

$$\big(\operatorname{arctg} x\big)'=\frac{1}{x^2+1}$$

odnosno

$$\int\frac{\mathrm{d}x}{x^2+1}=\operatorname{arctg} x+C,\quad C\in\mathbb{R}.$$

šesti zadatak

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x =$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{c} x^3 = t \\ \\ \end{array} \right.$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\quad x^3 = t \;/\; ' \right.$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{rl} & x^3 = t \;/\; ' \\ 3x^2 & \end{array} \right.$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{c} \qquad x^3 = t \;/\,' \\ 3x^2\,\mathrm{d}x \qquad \end{array}\right.$$

Zadatak 6

Riješite neodređeni integral $\displaystyle\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \;/\,' \\ 3x^2\,\mathrm{d}x = \end{array}\right.$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \;/\;' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array}\right.$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \ /\ ' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array}\right]$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \;/\;' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \frac{\quad}{\quad}$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

$$\begin{aligned} x^3 &= t \,/\,^2 \\ x^6 &= t^2 \end{aligned}$$

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \,/\, ' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \frac{}{t^2+1}$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \;/\;' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \frac{\frac{\mathrm{d}t}{3}}{t^2+1}$$

$$\boxed{\begin{array}{l} x^3 = t \;/\;^2 \\ x^6 = t^2 \end{array}}$$

$$\boxed{x^2\,\mathrm{d}x = \frac{\mathrm{d}t}{3}}$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

Rješenje

$$\begin{aligned} x^3 &= t \;/\; ^2 \\ x^6 &= t^2 \end{aligned}$$

$$x^2\,\mathrm{d}x = \frac{\mathrm{d}t}{3}$$

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \;/\; ' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \frac{\frac{\mathrm{d}t}{3}}{t^2+1} = \frac{1}{3}\int \frac{\mathrm{d}t}{t^2+1}$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

$$\boxed{\begin{aligned} x^3 &= t \;/\;^2 \\ x^6 &= t^2 \end{aligned}}$$

$$\boxed{x^2\,\mathrm{d}x = \frac{\mathrm{d}t}{3}}$$

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \;/\;' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \frac{\frac{\mathrm{d}t}{3}}{t^2+1} = \frac{1}{3}\int \frac{\mathrm{d}t}{t^2+1} =$$

$$= \frac{1}{3}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+1} = \operatorname{arctg} x + C}$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

$$\boxed{\begin{aligned} x^3 &= t \;/\;^2 \\ x^6 &= t^2 \end{aligned}}$$

$$\boxed{x^2\,\mathrm{d}x = \frac{\mathrm{d}t}{3}}$$

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \;/\;' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \frac{\frac{\mathrm{d}t}{3}}{t^2+1} = \frac{1}{3}\int \frac{\mathrm{d}t}{t^2+1} =$$

$$= \frac{1}{3}\operatorname{arctg} t$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+1} = \operatorname{arctg} x + C}$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

$$\begin{aligned} x^3 &= t \;/^2 \\ x^6 &= t^2 \end{aligned}$$

$$x^2\,\mathrm{d}x = \frac{\mathrm{d}t}{3}$$

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \;/\,' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \frac{\frac{\mathrm{d}t}{3}}{t^2+1} = \frac{1}{3}\int \frac{\mathrm{d}t}{t^2+1} =$$

$$= \frac{1}{3}\operatorname{arctg} t + C$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+1} = \operatorname{arctg} x + C}$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

$$x^3 = t \;/\;^2$$
$$x^6 = t^2$$

$$x^2\,\mathrm{d}x = \frac{\mathrm{d}t}{3}$$

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \;/\;' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \frac{\frac{\mathrm{d}t}{3}}{t^2+1} = \frac{1}{3}\int \frac{\mathrm{d}t}{t^2+1} =$$

$$= \frac{1}{3}\operatorname{arctg} t + C = \frac{1}{3}\operatorname{arctg} x^3 + C$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+1} = \operatorname{arctg} x + C}$$

Zadatak 6

Riješite neodređeni integral $\int \frac{x^2}{x^6+1}\,\mathrm{d}x$.

$$\boxed{\begin{aligned} x^3 &= t \;/\;^2 \\ x^6 &= t^2 \end{aligned}}$$

$$\boxed{x^2\,\mathrm{d}x = \frac{\mathrm{d}t}{3}}$$

Rješenje

$$\int \frac{x^2}{x^6+1}\,\mathrm{d}x = \left[\begin{array}{r} x^3 = t \;/\;' \\ 3x^2\,\mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \frac{\frac{\mathrm{d}t}{3}}{t^2+1} = \frac{1}{3}\int \frac{\mathrm{d}t}{t^2+1} =$$

$$= \frac{1}{3}\operatorname{arctg} t + C = \frac{1}{3}\operatorname{arctg} x^3 + C, \quad C \in \mathbb{R}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+1} = \operatorname{arctg} x + C}$$

sedmi zadatak

Zadatak 7

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

Zadatak 7

$$\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C$$

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{3x^2+5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} =$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a}\,\mathrm{arctg}\,\frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\Bigg(\qquad \Bigg)}$$

Zadatak 7

$$\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2 \qquad \right)}$$

Zadatak 7

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2 + \quad\right)}$$

Zadatak 7

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2+\frac{5}{3}\right)}$$

Zadatak 7

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\,\mathrm{arctg}\,\frac{x}{a} + C}$$

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2+\frac{5}{3}\right)} = \frac{1}{3}\int$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + 5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2 + 5} = \int \frac{\mathrm{d}x}{3\left(x^2 + \frac{5}{3}\right)} = \frac{1}{3} \int \frac{\phantom{\mathrm{d}x}}{\phantom{x^2 + \frac{5}{3}}}$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2+\frac{5}{3}\right)} = \frac{1}{3}\int \frac{\mathrm{d}x}{}$$

Zadatak 7

$$\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C$$

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{3x^2+5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2+\frac{5}{3}\right)} = \frac{1}{3}\int \frac{\mathrm{d}x}{x^2+}$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + 5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2 + 5} = \int \frac{\mathrm{d}x}{3\left(x^2 + \frac{5}{3}\right)} = \frac{1}{3} \int \frac{\mathrm{d}x}{x^2 + \sqrt{\frac{5}{3}}^{\,2}}$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2+\frac{5}{3}\right)} = \frac{1}{3}\int \frac{\mathrm{d}x}{x^2+\sqrt{\frac{5}{3}}^{\,2}} =$$

$$= \frac{1}{3}\cdot$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2+\frac{5}{3}\right)} = \frac{1}{3}\int \frac{\mathrm{d}x}{x^2+\sqrt{\frac{5}{3}}^{\,2}} =$$

$$= \frac{1}{3}\cdot\frac{1}{\sqrt{\frac{5}{3}}}\operatorname{arctg}\frac{x}{\sqrt{\frac{5}{3}}}$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2+\frac{5}{3}\right)} = \frac{1}{3}\int \frac{\mathrm{d}x}{x^2+\sqrt{\frac{5}{3}}^{\,2}} =$$

$$= \frac{1}{3}\cdot\frac{1}{\sqrt{\frac{5}{3}}}\operatorname{arctg}\frac{x}{\sqrt{\frac{5}{3}}} + C$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + 5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2 + 5} = \int \frac{\mathrm{d}x}{3\left(x^2 + \frac{5}{3}\right)} = \frac{1}{3} \int \frac{\mathrm{d}x}{x^2 + \sqrt{\frac{5}{3}}^{\,2}} =$$

$$= \frac{1}{3} \cdot \frac{1}{\sqrt{\frac{5}{3}}} \operatorname{arctg} \frac{x}{\sqrt{\frac{5}{3}}} + C = \frac{\sqrt{3}}{3\sqrt{5}}$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + 5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2 + 5} = \int \frac{\mathrm{d}x}{3\left(x^2 + \frac{5}{3}\right)} = \frac{1}{3} \int \frac{\mathrm{d}x}{x^2 + \sqrt{\frac{5}{3}}^{\,2}} =$$

$$= \frac{1}{3} \cdot \frac{1}{\sqrt{\frac{5}{3}}} \operatorname{arctg} \frac{x}{\sqrt{\frac{5}{3}}} + C = \frac{\sqrt{3}}{3\sqrt{5}} \operatorname{arctg} \frac{\sqrt{3}x}{\sqrt{5}}$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + 5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2 + 5} = \int \frac{\mathrm{d}x}{3\left(x^2 + \frac{5}{3}\right)} = \frac{1}{3} \int \frac{\mathrm{d}x}{x^2 + \sqrt{\frac{5}{3}}^{\,2}} =$$

$$= \frac{1}{3} \cdot \frac{1}{\sqrt{\frac{5}{3}}} \operatorname{arctg} \frac{x}{\sqrt{\frac{5}{3}}} + C = \frac{\sqrt{3}}{3\sqrt{5}} \operatorname{arctg} \frac{\sqrt{3}x}{\sqrt{5}} + C$$

Zadatak 7

$$\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + 5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2 + \frac{5}{3}\right)} = \frac{1}{3} \int \frac{\mathrm{d}x}{x^2 + \sqrt{\frac{5}{3}}^{\,2}} =$$

$$= \frac{1}{3} \cdot \frac{1}{\sqrt{\frac{5}{3}}} \operatorname{arctg} \frac{x}{\sqrt{\frac{5}{3}}} + C = \frac{\sqrt{3}}{3\sqrt{5}} \operatorname{arctg} \frac{\sqrt{3}x}{\sqrt{5}} + C =$$

$$= \frac{\sqrt{15}}{15}$$

$$\frac{\sqrt{3}}{3\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{15}}{3 \cdot 5} = \frac{\sqrt{15}}{15}$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{3x^2+5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2+\frac{5}{3}\right)} = \frac{1}{3}\int \frac{\mathrm{d}x}{x^2+\sqrt{\frac{5}{3}}^{\,2}} =$$

$$= \frac{1}{3}\cdot\frac{1}{\sqrt{\frac{5}{3}}}\operatorname{arctg}\frac{x}{\sqrt{\frac{5}{3}}} + C = \frac{\sqrt{3}}{3\sqrt{5}}\operatorname{arctg}\frac{\sqrt{3}x}{\sqrt{5}} + C =$$

$$= \frac{\sqrt{15}}{15}\operatorname{arctg}\frac{\sqrt{15}}{5}x$$

$$\frac{\sqrt{3}}{3\sqrt{5}}\cdot\frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{15}}{3\cdot 5} = \frac{\sqrt{15}}{15} \qquad\qquad \frac{\sqrt{3}}{\sqrt{5}}\cdot\frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{15}}{5}$$

Zadatak 7

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+5}$.

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2 + \frac{5}{3}\right)} = \frac{1}{3} \int \frac{\mathrm{d}x}{x^2 + \sqrt{\frac{5}{3}}^{\,2}} =$$

$$= \frac{1}{3} \cdot \frac{1}{\sqrt{\frac{5}{3}}} \operatorname{arctg} \frac{x}{\sqrt{\frac{5}{3}}} + C = \frac{\sqrt{3}}{3\sqrt{5}} \operatorname{arctg} \frac{\sqrt{3}x}{\sqrt{5}} + C =$$

$$= \frac{\sqrt{15}}{15} \operatorname{arctg} \frac{\sqrt{15}}{5} x + C$$

$$\frac{\sqrt{3}}{3\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{15}}{3 \cdot 5} = \frac{\sqrt{15}}{15} \qquad \frac{\sqrt{3}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{15}}{5}$$

Zadatak 7

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{3x^2+5}$.

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

Rješenje

$$\int \frac{\mathrm{d}x}{3x^2+5} = \int \frac{\mathrm{d}x}{3\left(x^2+\frac{5}{3}\right)} = \frac{1}{3}\int \frac{\mathrm{d}x}{x^2+\sqrt{\frac{5}{3}}^{\,2}} =$$

$$= \frac{1}{3}\cdot\frac{1}{\sqrt{\frac{5}{3}}}\operatorname{arctg}\frac{x}{\sqrt{\frac{5}{3}}} + C = \frac{\sqrt{3}}{3\sqrt{5}}\operatorname{arctg}\frac{\sqrt{3}x}{\sqrt{5}} + C =$$

$$= \frac{\sqrt{15}}{15}\operatorname{arctg}\frac{\sqrt{15}}{5}x + C, \quad C \in \mathbb{R}$$

$$\frac{\sqrt{3}}{3\sqrt{5}}\cdot\frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{15}}{3\cdot 5} = \frac{\sqrt{15}}{15} \qquad\qquad \frac{\sqrt{3}}{\sqrt{5}}\cdot\frac{\sqrt{5}}{\sqrt{5}} = \frac{\sqrt{15}}{5}$$

osmi zadatak

Zadatak 8

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2 - 3}$.

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Zadatak 8

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} =$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

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

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}}$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \underline{\hspace{6cm}}$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{A\left(x+\sqrt{3}\,\right)}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{A\left(x+\sqrt{3}\,\right) +}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

$$\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C$$

Zadatak 8

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{A\left(x+\sqrt{3}\,\right)+B\left(x-\sqrt{3}\,\right)}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

$$1 = A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$\boxed{x=\sqrt{3}}$$

$$= \frac{A\left(x+\sqrt{3}\,\right)+B\left(x-\sqrt{3}\,\right)}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

$$1 = A\left(x+\sqrt{3}\,\right)+B\left(x-\sqrt{3}\,\right)$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

$$1 = A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)$$

$$\boxed{x=\sqrt{3}}$$

$$1 = A\cdot 2\sqrt{3} + B\cdot 0$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

$$1 = A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)$$

$$\boxed{x = \sqrt{3}}$$

$$1 = A\cdot 2\sqrt{3} + B\cdot 0$$

$$A = \frac{1}{2\sqrt{3}}$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

$$1 = A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)$$

$$\boxed{x = \sqrt{3}}$$

$$1 = A \cdot 2\sqrt{3} + B \cdot 0$$

$$A = \frac{1}{2\sqrt{3}}$$

$$\boxed{x = -\sqrt{3}}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Zadatak 8

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{A\left(x+\sqrt{3}\,\right)+B\left(x-\sqrt{3}\,\right)}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

$$1 = A\left(x+\sqrt{3}\,\right)+B\left(x-\sqrt{3}\,\right)$$

$$\boxed{x=\sqrt{3}}$$

$$1 = A\cdot 2\sqrt{3} + B\cdot 0$$

$$A = \frac{1}{2\sqrt{3}}$$

$$\boxed{x=-\sqrt{3}}$$

$$1 = A\cdot 0 + B\cdot\left(-\,2\sqrt{3}\,\right)$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

$$1 = A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)$$

$$\boxed{x=\sqrt{3}}$$

$$1 = A\cdot 2\sqrt{3} + B\cdot 0$$

$$A = \frac{1}{2\sqrt{3}}$$

$$\boxed{x=-\sqrt{3}}$$

$$1 = A\cdot 0 + B\cdot\left(-\,2\sqrt{3}\,\right)$$

$$B = -\frac{1}{2\sqrt{3}}$$

Zadatak 8

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2-3}$.

Rješenje

$$\frac{1}{x^2-3} = \frac{1}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)} = \frac{A}{x-\sqrt{3}} + \frac{B}{x+\sqrt{3}} =$$

$$= \frac{A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)}{\left(x-\sqrt{3}\,\right)\left(x+\sqrt{3}\,\right)}$$

$$1 = A\left(x+\sqrt{3}\,\right) + B\left(x-\sqrt{3}\,\right)$$

$$\boxed{x = \sqrt{3}}$$

$$1 = A \cdot 2\sqrt{3} + B \cdot 0$$

$$A = \frac{1}{2\sqrt{3}}$$

$$\boxed{x = -\sqrt{3}}$$

$$1 = A \cdot 0 + B \cdot \left(-\,2\sqrt{3}\,\right)$$

$$B = -\frac{1}{2\sqrt{3}}$$

$$\frac{1}{x^2-3} = \frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{x^2-3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}} \right) \mathrm{d}x$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{x^2-3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x-\sqrt{3}}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{x^2-3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x-\sqrt{3}} - \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x+\sqrt{3}}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{x^2-3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x-\sqrt{3}} - \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x+\sqrt{3}} =$$

$$= \frac{1}{2\sqrt{3}}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{x^2-3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x-\sqrt{3}} - \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x+\sqrt{3}} =$$

$$= \frac{1}{2\sqrt{3}} \ln\left|x-\sqrt{3}\right|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{x^2-3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x-\sqrt{3}} - \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x+\sqrt{3}} =$$

$$= \frac{1}{2\sqrt{3}} \ln\left|x-\sqrt{3}\right| - \frac{1}{2\sqrt{3}}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{x^2-3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x-\sqrt{3}} - \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x+\sqrt{3}} =$$

$$= \frac{1}{2\sqrt{3}} \ln\left|x-\sqrt{3}\right| - \frac{1}{2\sqrt{3}} \ln\left|x+\sqrt{3}\right|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{x^2-3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x-\sqrt{3}} - \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x+\sqrt{3}} =$$

$$= \frac{1}{2\sqrt{3}} \ln\left|x-\sqrt{3}\right| - \frac{1}{2\sqrt{3}} \ln\left|x+\sqrt{3}\right| + C$$

$$\boxed{\ln|a| - \ln|b| = \ln\frac{|a|}{|b|} = \ln\left|\frac{a}{b}\right|}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{x^2-3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x-\sqrt{3}} - \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x+\sqrt{3}} =$$

$$= \frac{1}{2\sqrt{3}} \ln\left|x-\sqrt{3}\right| - \frac{1}{2\sqrt{3}} \ln\left|x+\sqrt{3}\right| + C =$$

$$= \frac{1}{2\sqrt{3}} \ln\left|\frac{x-\sqrt{3}}{x+\sqrt{3}}\right| + C$$

$$\int \frac{\mathrm{d}x}{x^2-3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x-\sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x+\sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x-\sqrt{3}} - \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x+\sqrt{3}} =$$

$$= \frac{1}{2\sqrt{3}} \ln \left|x-\sqrt{3}\right| - \frac{1}{2\sqrt{3}} \ln \left|x+\sqrt{3}\right| + C =$$

$$= \frac{1}{2\sqrt{3}} \ln \left| \frac{x-\sqrt{3}}{x+\sqrt{3}} \right| + C, \quad C \in \mathbb{R}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2 - a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right| + C}$$

$$\int \frac{\mathrm{d}x}{x^2 - 3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x - \sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x + \sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x - \sqrt{3}} - \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x + \sqrt{3}} =$$

$$= \frac{1}{2\sqrt{3}} \ln \left| x - \sqrt{3} \right| - \frac{1}{2\sqrt{3}} \ln \left| x + \sqrt{3} \right| + C =$$

$$= \frac{1}{2\sqrt{3}} \ln \left| \frac{x - \sqrt{3}}{x + \sqrt{3}} \right| + C, \quad C \in \mathbb{R}$$

$$\boxed{\int \frac{\mathrm{d}x}{a^2 - x^2} = \frac{1}{2a} \ln \left| \frac{a+x}{a-x} \right| + C} \quad \boxed{\int \frac{\mathrm{d}x}{x^2 - a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right| + C}$$

$$\int \frac{\mathrm{d}x}{x^2 - 3} = \int \left(\frac{\frac{1}{2\sqrt{3}}}{x - \sqrt{3}} + \frac{-\frac{1}{2\sqrt{3}}}{x + \sqrt{3}} \right) \mathrm{d}x =$$

$$= \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x - \sqrt{3}} - \frac{1}{2\sqrt{3}} \int \frac{\mathrm{d}x}{x + \sqrt{3}} =$$

$$= \frac{1}{2\sqrt{3}} \ln \left| x - \sqrt{3} \right| - \frac{1}{2\sqrt{3}} \ln \left| x + \sqrt{3} \right| + C =$$

$$= \frac{1}{2\sqrt{3}} \ln \left| \frac{x - \sqrt{3}}{x + \sqrt{3}} \right| + C, \quad C \in \mathbb{R}$$

deveti zadatak

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

Rješenje

$$3x^2 + x + 4 =$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+x+4}$.

Rješenje

$$3x^2+x+4 = 3\cdot\Bigg(\qquad\qquad\qquad\Bigg)$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+x+4}$.

Rješenje

$$3x^2 + x + 4 = 3 \cdot \left(x^2 \qquad\qquad\qquad \right)$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

Rješenje

$$3x^2 + x + 4 = 3 \cdot \left(x^2 + \qquad\qquad \right)$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

Rješenje

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

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

Rješenje

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

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

Rješenje

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

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

Rješenje

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

$$= 3 \cdot \left(\qquad\qquad\qquad\qquad \right)$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

Rješenje

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

$$= 3 \cdot \left(x^2 + \frac{1}{3}x \qquad\qquad\qquad \right)$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

Rješenje

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

$$= 3 \cdot \left(x^2 + \frac{1}{3}x + \qquad\qquad \right)$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

Rješenje

$$\left(\frac{\frac{1}{3}}{2}\right)^2$$

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

$$= 3 \cdot \left(x^2 + \frac{1}{3}x + \frac{1}{36} \qquad\qquad\qquad \right)$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+x+4}$.

Rješenje

$$\boxed{\left(\frac{\frac{1}{3}}{2}\right)^2}$$

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

$$= 3\cdot\left(x^2+\frac{1}{3}x+\frac{1}{36}-\frac{1}{36}\qquad\right)$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

$$\boxed{\left(\frac{\frac{1}{3}}{2}\right)^2}$$

Rješenje

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

$$= 3 \cdot \left(x^2 + \frac{1}{3}x + \frac{1}{36} - \frac{1}{36} + \frac{4}{3}\right)$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

$$\boxed{\left(\frac{\frac{1}{3}}{2}\right)^2}$$

Rješenje

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

$$= 3 \cdot \left(\boxed{x^2 + \frac{1}{3}x + \frac{1}{36}} - \frac{1}{36} + \frac{4}{3}\right) =$$

$$= 3 \cdot \left(\qquad\qquad\qquad\qquad\right)$$

Zadatak 9

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{3x^2+x+4}$.

Rješenje

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

$$\left(\frac{\frac{1}{3}}{2}\right)^2$$

$$=3\cdot\left(\boxed{x^2+\frac{1}{3}x+\frac{1}{36}}-\frac{1}{36}+\frac{4}{3}\right)=$$

$$=3\cdot\left(\left(x+\frac{1}{6}\right)^2\qquad\qquad\right)$$

Zadatak 9

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{3x^2+x+4}$.

Rješenje

$$\left(\frac{\frac{1}{3}}{2}\right)^2$$

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

$$= 3\cdot\left(\boxed{x^2+\frac{1}{3}x+\frac{1}{36}}-\frac{1}{36}+\frac{4}{3}\right) =$$

$$= 3\cdot\left(\left(x+\frac{1}{6}\right)^2+\frac{47}{36}\right)$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

Zadatak 9

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{3x^2+x+4}$.

$$\boxed{\left(\frac{\frac{1}{3}}{2}\right)^2}$$

Rješenje

$$\begin{aligned}
3x^2+x+4 &= 3\cdot\left(x^2+\frac{1}{3}x+\frac{4}{3}\right) = \\
&= 3\cdot\left(\boxed{x^2+\frac{1}{3}x+\frac{1}{36}}-\frac{1}{36}+\frac{4}{3}\right) = \\
&= 3\cdot\left(\left(x+\frac{1}{6}\right)^2+\frac{47}{36}\right) = \\
&= 3\cdot\left(\qquad\qquad\qquad\right)
\end{aligned}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\,\mathrm{arctg}\,\frac{x}{a} + C}$$

Zadatak 9

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{3x^2+x+4}$.

$$\boxed{\left(\frac{\frac{1}{3}}{2}\right)^2}$$

Rješenje

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

$$= 3\cdot\left(\boxed{x^2+\frac{1}{3}x+\frac{1}{36}}-\frac{1}{36}+\frac{4}{3}\right) =$$

$$= 3\cdot\left(\left(x+\frac{1}{6}\right)^2+\frac{47}{36}\right) =$$

$$= 3\cdot\left(\left(x+\frac{1}{6}\right)^2 \qquad\qquad\qquad \right)$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

Zadatak 9

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{3x^2 + x + 4}$.

$$\boxed{\left(\frac{\frac{1}{3}}{2}\right)^2}$$

Rješenje

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

$$= 3 \cdot \left(\boxed{x^2 + \frac{1}{3}x + \frac{1}{36}} - \frac{1}{36} + \frac{4}{3}\right) =$$

$$= 3 \cdot \left(\left(x + \frac{1}{6}\right)^2 + \frac{47}{36}\right) =$$

$$= 3 \cdot \left(\left(x + \frac{1}{6}\right)^2 + \qquad\qquad\right)$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

Zadatak 9

Riješite neodređeni integral $\displaystyle\int \frac{\mathrm{d}x}{3x^2+x+4}$.

$$\boxed{\left(\frac{\frac{1}{3}}{2}\right)^2}$$

Rješenje

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

$$= 3\cdot\left(\boxed{x^2+\frac{1}{3}x+\frac{1}{36}}-\frac{1}{36}+\frac{4}{3}\right) =$$

$$= 3\cdot\left(\left(x+\frac{1}{6}\right)^2+\frac{47}{36}\right) =$$

$$= 3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)$$

$$\int \frac{\mathrm{d}x}{3x^2 + x + 4} = \int \frac{\mathrm{d}x}{3 \cdot \left(\left(x + \frac{1}{6} \right)^2 + \left(\frac{\sqrt{47}}{6} \right)^2 \right)}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

$$\int \frac{\mathrm{d}x}{3x^2 + x + 4} = \int \frac{\mathrm{d}x}{3 \cdot \left(\left(x + \frac{1}{6}\right)^2 + \left(\frac{\sqrt{47}}{6}\right)^2 \right)} =$$

$$= \frac{1}{3} \int \frac{\mathrm{d}x}{\left(x + \frac{1}{6}\right)^2 + \left(\frac{\sqrt{47}}{6}\right)^2}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}x}{\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2} = \left[\; x+\frac{1}{6}=t \right.$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a}+C}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}x}{\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2} = \left[\; x+\frac{1}{6}=t \,/\,' \right.$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a}+C}$$

$$\int \frac{\mathrm{d}x}{3x^2 + x + 4} = \int \frac{\mathrm{d}x}{3 \cdot \left(\left(x + \frac{1}{6} \right)^2 + \left(\frac{\sqrt{47}}{6} \right)^2 \right)} =$$

$$= \frac{1}{3} \int \frac{\mathrm{d}x}{\left(x + \frac{1}{6} \right)^2 + \left(\frac{\sqrt{47}}{6} \right)^2} = \left[\begin{array}{c} x + \frac{1}{6} = t \;/\,' \\ \mathrm{d}x \end{array} \right.$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}x}{\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2} = \left[\begin{array}{c} x+\frac{1}{6}=t\,/\,' \\ \mathrm{d}x = \end{array}\right.$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}x}{\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2} = \left[\begin{array}{c} x+\frac{1}{6}=t \,/\,' \\ \mathrm{d}x=\mathrm{d}t \end{array}\right.$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\,\mathrm{arctg}\,\frac{x}{a}+C}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}x}{\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2} = \left[\begin{array}{c} x+\frac{1}{6}=t\,/\,' \\ \mathrm{d}x=\mathrm{d}t \end{array}\right]$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a}+C}$$

$$\int \frac{\mathrm{d}x}{3x^2 + x + 4} = \int \frac{\mathrm{d}x}{3 \cdot \left(\left(x + \frac{1}{6} \right)^2 + \left(\frac{\sqrt{47}}{6} \right)^2 \right)} =$$

$$= \frac{1}{3} \int \frac{\mathrm{d}x}{\left(x + \frac{1}{6} \right)^2 + \left(\frac{\sqrt{47}}{6} \right)^2} = \left[\begin{array}{c} x + \frac{1}{6} = t \, / \, ' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right] =$$

$$= \frac{1}{3} \int \frac{}{}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}x}{\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2} = \left[\begin{array}{c} x+\frac{1}{6}=t\,/\,' \\ \mathrm{d}x=\mathrm{d}t \end{array}\right] =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}t}{}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}x}{\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2} = \left[\begin{array}{c} x+\frac{1}{6}=t\,/\,' \\ \mathrm{d}x=\mathrm{d}t \end{array}\right] =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}t}{t^2 \qquad\qquad}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\,\mathrm{arctg}\,\frac{x}{a} + C}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}x}{\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2} = \left[\begin{array}{c} x+\frac{1}{6}=t\,/\,' \\ \mathrm{d}x=\mathrm{d}t \end{array}\right] =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}t}{t^2+\left(\frac{\sqrt{47}}{6}\right)^2}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a}+C}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}x}{\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2} = \left[\begin{array}{c} x+\frac{1}{6}=t\,/\,' \\ \mathrm{d}x=\mathrm{d}t \end{array}\right] =$$

$$= \frac{1}{3}\int \frac{\mathrm{d}t}{t^2+\left(\frac{\sqrt{47}}{6}\right)^2} = \frac{1}{3}\cdot$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a}+C}$$

$$\int \frac{\mathrm{d}x}{3x^2 + x + 4} = \int \frac{\mathrm{d}x}{3 \cdot \left(\left(x + \frac{1}{6}\right)^2 + \left(\frac{\sqrt{47}}{6}\right)^2 \right)} =$$

$$= \frac{1}{3} \int \frac{\mathrm{d}x}{\left(x + \frac{1}{6}\right)^2 + \left(\frac{\sqrt{47}}{6}\right)^2} = \left[\begin{array}{c} x + \frac{1}{6} = t \,/\,' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right] =$$

$$= \frac{1}{3} \int \frac{\mathrm{d}t}{t^2 + \left(\frac{\sqrt{47}}{6}\right)^2} = \frac{1}{3} \cdot \frac{1}{\frac{\sqrt{47}}{6}} \operatorname{arctg} \frac{t}{\frac{\sqrt{47}}{6}}$$

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$$= \frac{2}{\sqrt{47}}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

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$$= \frac{2}{\sqrt{47}}\operatorname{arctg}\frac{6t}{\sqrt{47}} + C = \frac{2}{\sqrt{47}}\operatorname{arctg}\,\rule{4cm}{0.4pt}$$

$$\int \frac{\mathrm{d}x}{3x^2+x+4} = \int \frac{\mathrm{d}x}{3\cdot\left(\left(x+\frac{1}{6}\right)^2+\left(\frac{\sqrt{47}}{6}\right)^2\right)} =$$

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$$= \frac{2}{\sqrt{47}}\operatorname{arctg}\frac{6x+1}{\sqrt{47}}+C, \quad C\in\mathbb{R}$$

deseti zadatak

Zadatak 10

Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2 + 5x - 4}$.

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Rješenje

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

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

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Riješite neodređeni integral $\int \frac{\mathrm{d}x}{x^2+5x-4}$.

$$\boxed{\left(\frac{5}{2}\right)^2}$$

Rješenje

$$x^2+5x-4 = x^2+5x+\frac{25}{4}$$

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$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\; x+\frac{5}{2} = t \;/\; ' \right.$$

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$$= \int \frac{\qquad\qquad\qquad}{}$$

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$$= \int \frac{\mathrm{d}t}{t^2 \qquad\qquad\qquad}$$

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$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln \left| \frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}} \right|$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2-a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right| + C}$$

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$$= \frac{1}{\sqrt{41}}$$

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$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{\phantom{2t-\sqrt{41}}}\right|$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right|$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}}$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \, / \, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}} \ln\left|\frac{\qquad\qquad}{\qquad\qquad}\right|$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}} \ln\left|\frac{2\cdot \qquad}{\qquad}\right|$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}} \ln\left|\frac{2\cdot\left(x+\frac{5}{2}\right)}{}\right|$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}} \ln\left|\frac{2\cdot\left(x+\frac{5}{2}\right)-\sqrt{41}}{}\right|$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}} \ln\left|\frac{2\cdot\left(x+\frac{5}{2}\right)-\sqrt{41}}{2\cdot}\right|$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}} \ln\left|\frac{2\cdot\left(x+\frac{5}{2}\right)-\sqrt{41}}{2\cdot\left(x+\frac{5}{2}\right)}\right|$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}} \ln\left|\frac{2\cdot\left(x+\frac{5}{2}\right)-\sqrt{41}}{2\cdot\left(x+\frac{5}{2}\right)+\sqrt{41}}\right|$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2-\left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2}=t\,/\,' \\ \mathrm{d}x=\mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2-\left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}} \ln\left|\frac{2\cdot\left(x+\frac{5}{2}\right)-\sqrt{41}}{2\cdot\left(x+\frac{5}{2}\right)+\sqrt{41}}\right| + C$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\,' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}} \ln\left|\frac{2\cdot\left(x+\frac{5}{2}\right)-\sqrt{41}}{2\cdot\left(x+\frac{5}{2}\right)+\sqrt{41}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2x+5-\sqrt{41}}{2x+5+\sqrt{41}}\right| + C$$

$$\int \frac{\mathrm{d}x}{x^2+5x-4} = \int \frac{\mathrm{d}x}{\left(x+\frac{5}{2}\right)^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \left[\begin{array}{c} x+\frac{5}{2} = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] =$$

$$= \int \frac{\mathrm{d}t}{t^2 - \left(\frac{\sqrt{41}}{2}\right)^2} = \frac{1}{2\cdot\frac{\sqrt{41}}{2}} \ln\left|\frac{t-\frac{\sqrt{41}}{2}}{t+\frac{\sqrt{41}}{2}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2t-\sqrt{41}}{2t+\sqrt{41}}\right| + C = \frac{1}{\sqrt{41}} \ln\left|\frac{2\cdot\left(x+\frac{5}{2}\right)-\sqrt{41}}{2\cdot\left(x+\frac{5}{2}\right)+\sqrt{41}}\right| + C =$$

$$= \frac{1}{\sqrt{41}} \ln\left|\frac{2x+5-\sqrt{41}}{2x+5+\sqrt{41}}\right| + C, \quad C \in \mathbb{R}$$

jedanaesti zadatak

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x =$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

Rješenje

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{}{}$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{}{x^2+5x-4}$$

Zadatak 11

Riješite neodređeni integral $\displaystyle\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

$$\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C$$

Rješenje

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{(2x+5)}{x^2+5x-4}$$

Zadatak 11

Riješite neodređeni integral $\displaystyle\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

Rješenje

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)}{x^2+5x-4}$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5) - \frac{19}{2}}{x^2+5x-4}$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5) - \frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x$$

Zadatak 11

Riješite neodređeni integral $\displaystyle\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)-\frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

$$= \frac{5}{2}$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

Rješenje

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)-\frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x$$

Zadatak 11

Riješite neodređeni integral $\displaystyle\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)-\frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x -$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5) - \frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x - \frac{19}{2}$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)-\frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x - \frac{19}{2}\int \frac{\mathrm{d}x}{x^2+5x-4}$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)-\frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x - \frac{19}{2}\int \frac{\mathrm{d}x}{x^2+5x-4} =$$

$$= \frac{5}{2}$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)-\frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x - \frac{19}{2}\int \frac{\mathrm{d}x}{x^2+5x-4} =$$

$$= \frac{5}{2}\ln\left|x^2+5x-4\right|$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

Rješenje

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)-\frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x - \frac{19}{2}\boxed{\int \frac{\mathrm{d}x}{x^2+5x-4}} =$$

prethodni zadatak

$$= \frac{5}{2}\ln\left|x^2+5x-4\right| - \frac{19}{2}\cdot$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x.$

Rješenje

$$\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)-\frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x - \frac{19}{2}\boxed{\int \frac{\mathrm{d}x}{x^2+5x-4}} =$$

prethodni zadatak

$$= \frac{5}{2}\ln\left|x^2+5x-4\right| - \frac{19}{2}\cdot\frac{1}{\sqrt{41}}\ln\left|\frac{2x+5-\sqrt{41}}{2x+5+\sqrt{41}}\right|$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x.$

Rješenje

$$\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5) - \frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

prethodni zadatak

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x - \frac{19}{2}\boxed{\int \frac{\mathrm{d}x}{x^2+5x-4}} =$$

$$= \frac{5}{2}\ln\left|x^2+5x-4\right| - \frac{19}{2}\cdot\frac{1}{\sqrt{41}}\ln\left|\frac{2x+5-\sqrt{41}}{2x+5+\sqrt{41}}\right| + C$$

Zadatak 11

Riješite neodređeni integral $\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x$.

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)-\frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

prethodni zadatak

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x - \frac{19}{2}\boxed{\int \frac{\mathrm{d}x}{x^2+5x-4}} =$$

$$= \frac{5}{2}\ln\left|x^2+5x-4\right| - \frac{19}{2}\cdot\frac{1}{\sqrt{41}}\ln\left|\frac{2x+5-\sqrt{41}}{2x+5+\sqrt{41}}\right| + C =$$

$$= \frac{5}{2}\ln\left|x^2+5x-4\right| - \frac{19}{2\sqrt{41}}\ln\left|\frac{2x+5-\sqrt{41}}{2x+5+\sqrt{41}}\right| + C$$

Zadatak 11

Riješite neodređeni integral $\displaystyle\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x.$

Rješenje

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln\left|f(x)\right| + C}$$

$$\int \frac{5x+3}{x^2+5x-4}\,\mathrm{d}x = \int \frac{\frac{5}{2}\cdot(2x+5)-\frac{19}{2}}{x^2+5x-4}\,\mathrm{d}x =$$

prethodni zadatak

$$= \frac{5}{2}\int \frac{2x+5}{x^2+5x-4}\,\mathrm{d}x - \frac{19}{2}\boxed{\int \frac{\mathrm{d}x}{x^2+5x-4}} =$$

$$= \frac{5}{2}\ln\left|x^2+5x-4\right| - \frac{19}{2}\cdot\frac{1}{\sqrt{41}}\ln\left|\frac{2x+5-\sqrt{41}}{2x+5+\sqrt{41}}\right| + C =$$

$$= \frac{5}{2}\ln\left|x^2+5x-4\right| - \frac{19}{2\sqrt{41}}\ln\left|\frac{2x+5-\sqrt{41}}{2x+5+\sqrt{41}}\right| + C, \quad C\in\mathbb{R}$$

dvanaesti zadatak

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x$.

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} =$$

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x$.

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2}$$

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} +$$

Zadatak 12

Riješite neodređeni integral $\displaystyle\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2}$$

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} +$$

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3}$$

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

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$$= \frac{\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad}{}$$

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3} =$$

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

Zadatak 12

Riješite neodređeni integral $\displaystyle\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3} =$$

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

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x$.

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3} =$$

$$= \frac{A(x+2)(x-3)+\qquad\qquad\qquad\qquad\qquad}{(x+2)^2(x-3)}$$

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x$.

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3} =$$

$$= \frac{A(x+2)(x-3) + B(x-3)}{(x+2)^2(x-3)}$$

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3} =$$

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Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

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$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3} =$$

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Zadatak 12

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Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3} =$$

$$= \frac{A(x+2)(x-3)+B(x-3)+C(x+2)^2}{(x+2)^2(x-3)}$$

$$4x^2+3x-20 =$$

Zadatak 12

Riješite neodređeni integral $\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x.$

Rješenje

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3} =$$

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$$4x^2+3x-20 = A(x+2)(x-3)+B(x-3)+C(x+2)^2$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$x = -2$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 =$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$$\boxed{x = -2}$$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 +$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$x = -2$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5)$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$x = -2$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) +$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$\begin{aligned} 4 \cdot (-2)^2 + 3 \cdot (-2) - 20 &= A \cdot 0 + B \cdot (-5) + C \cdot 0 \\ -10 &= \end{aligned}$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$\begin{aligned} 4 \cdot (-2)^2 + 3 \cdot (-2) - 20 &= A \cdot 0 + B \cdot (-5) + C \cdot 0 \\ -10 &= -5B \end{aligned}$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$\begin{aligned} 4 \cdot (-2)^2 + 3 \cdot (-2) - 20 &= A \cdot 0 + B \cdot (-5) + C \cdot 0 \\ -10 &= -5B \\ B &= 2 \end{aligned}$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$\begin{aligned} 4 \cdot (-2)^2 + 3 \cdot (-2) - 20 &= A \cdot 0 + B \cdot (-5) + C \cdot 0 \\ -10 &= -5B \\ \boxed{B = 2} \end{aligned}$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$x = -2$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

$x = 3$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

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$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

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$$-10 = -5B$$

$$\boxed{B = 2}$$

$x = 3$

$$4 \cdot 3^2 + 3 \cdot 3 - 20$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$$\boxed{x = -2}$$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

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$$\boxed{x = 3}$$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 =$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

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$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

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$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0$$

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$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

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$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

$\boxed{x = 3}$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0$$

$$4x^2+3x-20=A(x+2)(x-3)+B(x-3)+C(x+2)^2$$

$x=-2$

$$4\cdot(-2)^2+3\cdot(-2)-20=A\cdot 0+B\cdot(-5)+C\cdot 0$$

$$-10=-5B$$

$$\boxed{B=2}$$

$x=3$

$$4\cdot 3^2+3\cdot 3-20=A\cdot 0+B\cdot 0+$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

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$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

$x = 3$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$4x^2+3x-20 = A(x+2)(x-3)+B(x-3)+C(x+2)^2$$

$x = -2$

$$4\cdot(-2)^2+3\cdot(-2)-20 = A\cdot 0 + B\cdot(-5) + C\cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

$x = 3$

$$4\cdot 3^2+3\cdot 3-20 = A\cdot 0 + B\cdot 0 + C\cdot 25$$

$$25$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

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$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

$\boxed{x = 3}$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 =$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$x = -2$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

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$x = 3$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 = 25C$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

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$x = 3$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

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$$C = 1$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

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$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

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$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

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$$\begin{aligned} 4 \cdot (-2)^2 + 3 \cdot (-2) - 20 &= A \cdot 0 + B \cdot (-5) + C \cdot 0 \\ -10 &= -5B \\ &\boxed{B = 2} \end{aligned}$$

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$\boxed{x = 0}$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$x = -2$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

$x = 3$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 = 25C$$

$$\boxed{C = 1}$$

$x = 0$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

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$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

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$x = 3$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 = 25C$$

$$\boxed{C = 1}$$

$x = 0$

$$4 \cdot 0 + 3 \cdot 0 - 20$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$$\boxed{x = -2}$$

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$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 = 25C$$

$$\boxed{C = 1}$$

$$\boxed{x = 0}$$

$$4 \cdot 0 + 3 \cdot 0 - 20 =$$

$$4x^2+3x-20=A(x+2)(x-3)+B(x-3)+C(x+2)^2$$

$x=-2$

$$4\cdot(-2)^2+3\cdot(-2)-20=A\cdot 0+B\cdot(-5)+C\cdot 0$$

$$-10=-5B$$

$$\boxed{B=2}$$

$x=3$

$$4\cdot 3^2+3\cdot 3-20=A\cdot 0+B\cdot 0+C\cdot 25$$

$$25=25C$$

$$\boxed{C=1}$$

$x=0$

$$4\cdot 0+3\cdot 0-20=A\cdot(0+2)\cdot(0-3)$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

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$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 = 25C$$

$$\boxed{C = 1}$$

$\boxed{x = 0}$

$$4 \cdot 0 + 3 \cdot 0 - 20 = A \cdot (0+2) \cdot (0-3) +$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

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$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 = 25C$$

$$\boxed{C = 1}$$

$\boxed{x = 0}$

$$4 \cdot 0 + 3 \cdot 0 - 20 = A \cdot (0+2) \cdot (0-3) + B \cdot (0-3)$$

$$4x^2+3x-20=A(x+2)(x-3)+B(x-3)+C(x+2)^2$$

$$\boxed{x=-2}$$

$$\begin{aligned}4\cdot(-2)^2+3\cdot(-2)-20&=A\cdot 0+B\cdot(-5)+C\cdot 0\\ -10&=-5B\\ &\boxed{B=2}\end{aligned}$$

$$\boxed{x=3}$$

$$\begin{aligned}4\cdot 3^2+3\cdot 3-20&=A\cdot 0+B\cdot 0+C\cdot 25\\ 25&=25C\\ &\boxed{C=1}\end{aligned}$$

$$\boxed{x=0}$$

$$4\cdot 0+3\cdot 0-20=A\cdot(0+2)\cdot(0-3)+B\cdot(0-3)+$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$$\boxed{x = -2}$$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

$$\boxed{x = 3}$$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 = 25C$$

$$\boxed{C = 1}$$

$$\boxed{x = 0}$$

$$4 \cdot 0 + 3 \cdot 0 - 20 = A \cdot (0+2) \cdot (0-3) + B \cdot (0-3) + C \cdot (0+2)^2$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$x = -2$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

$x = 3$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 = 25C$$

$$\boxed{C = 1}$$

$x = 0$

$$4 \cdot 0 + 3 \cdot 0 - 20 = A \cdot (0+2) \cdot (0-3) + B \cdot (0-3) + C \cdot (0+2)^2$$

$$-20$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$\begin{aligned} 4 \cdot (-2)^2 + 3 \cdot (-2) - 20 &= A \cdot 0 + B \cdot (-5) + C \cdot 0 \\ -10 &= -5B \\ &\boxed{B = 2} \end{aligned}$$

$\boxed{x = 3}$

$$\begin{aligned} 4 \cdot 3^2 + 3 \cdot 3 - 20 &= A \cdot 0 + B \cdot 0 + C \cdot 25 \\ 25 &= 25C \\ &\boxed{C = 1} \end{aligned}$$

$\boxed{x = 0}$

$$\begin{aligned} 4 \cdot 0 + 3 \cdot 0 - 20 &= A \cdot (0+2) \cdot (0-3) + B \cdot (0-3) + C \cdot (0+2)^2 \\ -20 &= \end{aligned}$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$x = -2$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

$x = 3$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 = 25C$$

$$\boxed{C = 1}$$

$x = 0$

$$4 \cdot 0 + 3 \cdot 0 - 20 = A \cdot (0+2) \cdot (0-3) + B \cdot (0-3) + C \cdot (0+2)^2$$

$$-20 = -6A - 3B + 4C$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$\boxed{x = -2}$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$

$$-10 = -5B$$

$$\boxed{B = 2}$$

$\boxed{x = 3}$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$

$$25 = 25C$$

$$\boxed{C = 1}$$

$\boxed{x = 0}$

$$4 \cdot 0 + 3 \cdot 0 - 20 = A \cdot (0+2) \cdot (0-3) + B \cdot (0-3) + C \cdot (0+2)^2$$

$$-20 = -6A - 3B + 4C$$

$$-20$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

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$$\begin{aligned} 4 \cdot (-2)^2 + 3 \cdot (-2) - 20 &= A \cdot 0 + B \cdot (-5) + C \cdot 0 \\ -10 &= -5B \\ &\boxed{B = 2} \end{aligned}$$

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$$\begin{aligned} 4 \cdot 0 + 3 \cdot 0 - 20 &= A \cdot (0+2) \cdot (0-3) + B \cdot (0-3) + C \cdot (0+2)^2 \\ -20 &= -6A - 3B + 4C \\ -20 &= \end{aligned}$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$x = -2$

$$4 \cdot (-2)^2 + 3 \cdot (-2) - 20 = A \cdot 0 + B \cdot (-5) + C \cdot 0$$
$$-10 = -5B$$
$$\boxed{B = 2}$$

$x = 3$

$$4 \cdot 3^2 + 3 \cdot 3 - 20 = A \cdot 0 + B \cdot 0 + C \cdot 25$$
$$25 = 25C$$
$$\boxed{C = 1}$$

$x = 0$

$$4 \cdot 0 + 3 \cdot 0 - 20 = A \cdot (0+2) \cdot (0-3) + B \cdot (0-3) + C \cdot (0+2)^2$$
$$-20 = -6A - 3B + 4C$$
$$-20 = -6A$$

$$4x^2+3x-20=A(x+2)(x-3)+B(x-3)+C(x+2)^2$$

$x=-2$

$$4\cdot(-2)^2+3\cdot(-2)-20=A\cdot 0+B\cdot(-5)+C\cdot 0$$

$$-10=-5B$$

$$\boxed{B=2}$$

$x=3$

$$4\cdot 3^2+3\cdot 3-20=A\cdot 0+B\cdot 0+C\cdot 25$$

$$25=25C$$

$$\boxed{C=1}$$

$x=0$

$$4\cdot 0+3\cdot 0-20=A\cdot(0+2)\cdot(0-3)+B\cdot(0-3)+C\cdot(0+2)^2$$

$$-20=-6A-3B+4C$$

$$-20=-6A-3\cdot 2$$

$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

$x = -2$

$$\begin{aligned} 4 \cdot (-2)^2 + 3 \cdot (-2) - 20 &= A \cdot 0 + B \cdot (-5) + C \cdot 0 \\ -10 &= -5B \\ &\boxed{B = 2} \end{aligned}$$

$x = 3$

$$\begin{aligned} 4 \cdot 3^2 + 3 \cdot 3 - 20 &= A \cdot 0 + B \cdot 0 + C \cdot 25 \\ 25 &= 25C \\ &\boxed{C = 1} \end{aligned}$$

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$$\begin{aligned} 4 \cdot 0 + 3 \cdot 0 - 20 &= A \cdot (0+2) \cdot (0-3) + B \cdot (0-3) + C \cdot (0+2)^2 \\ -20 &= -6A - 3B + 4C \\ -20 &= -6A - 3 \cdot 2 + 4 \cdot 1 \end{aligned}$$

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$$4x^2 + 3x - 20 = A(x+2)(x-3) + B(x-3) + C(x+2)^2$$

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$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3}$$

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$$= 3\int \frac{\mathrm{d}x}{x+2}$$

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$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2}$$

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$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3}$$

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$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

$$= 3$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3}$$

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{3}{x+2} + \frac{2}{(x+2)^2} + \frac{1}{x-3}$$

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$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

$$= 3\ln|x+2|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{(x+2)^2} =$$

$$\int \frac{4x}{(x+2)^2(x-3)} \qquad \int \left(\quad x+2 \quad (x+2)^2 \quad x-3 \right)$$

$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

$$= 3\ln|x+2|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x+2)^2} = \left[\; x+2=t \right.$$

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

$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

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$$\int \frac{\mathrm{d}x}{(x+2)^2} = \left[\; x+2 = t \,/\, ' \right.$$

$$\int \frac{4x}{(x+2)^2(x-3)} \qquad \int \Big(x+2 \qquad (x+2)^2 \qquad x-3 \Big)$$

$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

$$= 3\ln|x+2|$$

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$$\int \frac{\mathrm{d}x}{(x+2)^2} = \left[\begin{array}{c} x+2 = t \,/\,' \\ \mathrm{d}x \end{array} \right.$$

$$\int \frac{4x}{(x+2)^2(x-3)} \qquad \int \Big(\quad x+2 \qquad (x+2)^2 \qquad x-3 \Big)$$

$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

$$= 3 \ln |x+2|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a} \ln |ax+b| + C} \qquad \boxed{\int x^n \, \mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x+2)^2} = \left[\begin{array}{c} x+2 = t \,/\,' \\ \mathrm{d}x = \end{array} \right.$$

$$\int \frac{4x}{(x+2)^2(x-3)} \qquad \int \left(\frac{}{x+2} \qquad \frac{}{(x+2)^2} \qquad \frac{}{x-3} \right)$$

$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

$$= 3\ln|x+2|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x+2)^2} = \left[\begin{array}{c} x+2 = t \,/\,' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right.$$

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$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

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$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

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

$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

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$$\int \frac{\mathrm{d}x}{(x+2)^2} = \left[\begin{array}{c} x+2 = t \;/\;' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \frac{\mathrm{d}t}{t^2}$$

$$\int \frac{4x}{(x+2)^2(x-3)} \qquad \int \Big(\quad x+2 \qquad (x+2)^2 \qquad x-3 \Big)$$

$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

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$$= \frac{t^{-1}}{-1}$$

$$\int \frac{4x}{(x+2)^2(x-3)} \qquad \int \Big(\quad x+2 \qquad (x+2)^2 \qquad x-3 \Big)$$

$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

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$$= \frac{t^{-1}}{-1} + C = -\frac{1}{t} + C$$

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

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$$= 3\ln|x+2|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x+2)^2} = \left[\begin{array}{c} x+2 = t \,/\,' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \frac{\mathrm{d}t}{t^2} = \int t^{-2}\,\mathrm{d}t =$$

$$= \frac{t^{-1}}{-1} + C = -\frac{1}{t} + C = -\frac{1}{x+2} + C, \quad C \in \mathbb{R}$$

$$\int \frac{4x}{(x+2)^2(x-3)} \qquad \int \Big(\quad x+2 \qquad (x+2)^2 \qquad x-3 \Big)$$

$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

$$= 3\ln|x+2|$$

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$$\int \frac{\mathrm{d}x}{(x+2)^2} = \left[\begin{array}{c} x+2 = t \;/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \frac{\mathrm{d}t}{t^2} = \int t^{-2}\,\mathrm{d}t =$$

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$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

$$= 3\ln|x+2| - \frac{2}{x+2}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

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$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

$$= 3\ln|x+2| - \frac{2}{x+2} + \ln|x-3| + C$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{A}{x+2} + \frac{B}{(x+2)^2} + \frac{C}{x-3}$$

$$\frac{4x^2+3x-20}{(x+2)^2(x-3)} = \frac{3}{x+2} + \frac{2}{(x+2)^2} + \frac{1}{x-3}$$

$$\int \frac{4x^2+3x-20}{(x+2)^2(x-3)}\,\mathrm{d}x = \int \left(\frac{3}{x+2} + \frac{2}{(x+2)^2} + \frac{1}{x-3}\right)\mathrm{d}x =$$

$$= 3\int \frac{\mathrm{d}x}{x+2} + 2\int \frac{\mathrm{d}x}{(x+2)^2} + \int \frac{\mathrm{d}x}{x-3} =$$

$$= 3\ln|x+2| - \frac{2}{x+2} + \ln|x-3| + C, \quad C \in \mathbb{R}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

trinaesti zadatak

Zadatak 13

Riješite neodređeni integral $\displaystyle\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x.$

Zadatak 13

Riješite neodređeni integral $\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x$.

Rješenje

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

Zadatak 13

Riješite neodređeni integral $\displaystyle\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x.$

Rješenje

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

Zadatak 13

Riješite neodređeni integral $\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x$.

Rješenje

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

Zadatak 13

Riješite neodređeni integral $\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x$.

Rješenje

$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2}$$

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Riješite neodređeni integral $\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x$.

Rješenje

$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} +$$

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Riješite neodređeni integral $\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x$.

Rješenje

$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1}$$

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$$= \underline{\hspace{10cm}}$$

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Rješenje

$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1} =$$

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

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$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1} =$$

$$= \frac{A(x-1)(x^2+1)\qquad\qquad\qquad\qquad\qquad\qquad\qquad}{(x-1)^2(x^2+1)}$$

Zadatak 13

Riješite neodređeni integral $\displaystyle\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x.$

Rješenje

$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1} =$$

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$$= \frac{A(x-1)(x^2+1) + B(x^2+1)}{(x-1)^2(x^2+1)}$$

Zadatak 13

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$$= \frac{A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2}{(x-1)^2(x^2+1)}$$

$$x + 1 =$$

Zadatak 13

Riješite neodređeni integral $\displaystyle\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x$.

Rješenje

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$$= \frac{A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2}{(x-1)^2(x^2+1)}$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$x = 1$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx + D)(x-1)^2$$

$\boxed{x = 1}$

$1 + 1$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx + D)(x-1)^2$$

$\boxed{x = 1}$

$1 + 1 =$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x = 1}$

$$1 + 1 = A \cdot 0$$

$$x + 1 = A(x - 1)(x^2 + 1) + B(x^2 + 1) + (Cx + D)(x - 1)^2$$

$\boxed{x = 1}$

$$1 + 1 = A \cdot 0 +$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx + D)(x-1)^2$$

$\boxed{x = 1}$

$$1 + 1 = A \cdot 0 + B \cdot 2$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

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$\boxed{x = 1}$

$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x = 1}$$

$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

$$2$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx + D)(x-1)^2$$

$$\boxed{x = 1}$$

$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

$$2 =$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x = 1}$

$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

$$2 = 2B$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx + D)(x-1)^2$$

$$\boxed{x = 1}$$

$$\begin{aligned} 1 + 1 &= A \cdot 0 + B \cdot 2 + (C + D) \cdot 0 \\ 2 &= 2B \\ B &= 1 \end{aligned}$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x = 1}$

$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

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$$\boxed{B = 1}$$

$\boxed{x = i}$

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$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

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$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B = 1}$$

$i^2 = -1$

$x = i$

$$i+1 = A\cdot(i-1)\cdot(i^2+1) + B\cdot(i^2+1) + (Ci+D)\cdot(i-1)^2$$

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$\boxed{x=1}$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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

$\boxed{x=i}$

$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot(i^2+1) + (Ci+D)\cdot(i-1)^2$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x = 1}$$

$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

$$2 = 2B$$

$$\boxed{B = 1}$$

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

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$$i + 1 = A \cdot (i-1) \cdot \overbrace{(i^2+1)}^{=0} + B \cdot \overbrace{(i^2+1)}^{=0} + (Ci + D) \cdot (i-1)^2$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x = 1}$

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$$i+1$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

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$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x=1}$

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$$\boxed{B=1}$$

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

$\boxed{x=i}$

$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot\overbrace{(i^2+1)}^{=0} + (Ci+D)\cdot(i-1)^2$$

$$i+1 = (Ci+D)$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x = 1}$$

$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

$$2 = 2B$$

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

$$\boxed{x = i}$$

$$i + 1 = A \cdot (i - 1) \cdot \overbrace{(i^2 + 1)}^{=0} + B \cdot \overbrace{(i^2 + 1)}^{=0} + (Ci + D) \cdot (i - 1)^2$$

$$i + 1 = (Ci + D) \cdot ($$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x=1}$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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

$\boxed{x=i}$

$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot\overbrace{(i^2+1)}^{=0} + (Ci+D)\cdot(i-1)^2$$

$$i+1 = (Ci+D)\cdot(i^2$$

$$x+1 = A(x-1)(x^2+1)+B(x^2+1)+(Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

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$$i+1 = (Ci+D)\cdot(i^2-2i$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x=1}$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

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$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot\overbrace{(i^2+1)}^{=0} + (Ci+D)\cdot(i-1)^2$$

$$i+1 = (Ci+D)\cdot(i^2-2i+1)$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x=1}$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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

$\boxed{x=i}$

$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot\overbrace{(i^2+1)}^{=0} + (Ci+D)\cdot(i-1)^2$$

$$i+1 = (Ci+D)\cdot(i^2-2i+1)$$

$$i+1$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x=1}$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

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$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot\overbrace{(i^2+1)}^{=0} + (Ci+D)\cdot(i-1)^2$$

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$$i+1 =$$

$$x+1=A(x-1)(x^2+1)+B(x^2+1)+(Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1=A\cdot 0+B\cdot 2+(C+D)\cdot 0$$

$$2=2B$$

$$\boxed{B=1}$$

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

$$\boxed{x=i}$$

$$i+1=A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0}+B\cdot\overbrace{(i^2+1)}^{=0}+(Ci+D)\cdot(i-1)^2$$

$$i+1=(Ci+D)\cdot(i^2-2i+1)$$

$$i+1=(Ci+D)\cdot$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

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$$\boxed{x=1}$$

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$$1+i$$

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$\boxed{x = 1}$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B = 1}$$

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

$\boxed{x = i}$

$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot\overbrace{(i^2+1)}^{=0} + (Ci+D)\cdot(i-1)^2$$

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$$\boxed{B=1}$$

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

$\boxed{x=i}$

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$$i+1 = (Ci+D)\cdot(-2i)$$

$$1+i = 2C$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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

$$\boxed{x=i}$$

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$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

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$$\boxed{x=i}$$

$$i+1 = A\cdot(i-1)\cdot\underbrace{(i^2+1)}_{=0} + B\cdot\underbrace{(i^2+1)}_{=0} + (Ci+D)\cdot(i-1)^2$$

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$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

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$$i+1 = (Ci+D)\cdot(i^2-2i+1)$$

$$i+1 = (Ci+D)\cdot(-2i)$$

$$1+i = 2C-2Di \longrightarrow 2C = 1$$

$$x+1=A(x-1)(x^2+1)+B(x^2+1)+(Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1=A\cdot 0+B\cdot 2+(C+D)\cdot 0$$

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$$z_1=x_1+y_1 i,\quad z_2=x_2+y_2 i$$

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$$1+i=2C-2Di$$

$$2C=1\qquad -2D=1$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

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$$1+i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$C = \frac{1}{2}$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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

$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

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$$1+i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C = \frac{1}{2}}$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

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$$i+1 = (Ci+D)\cdot(-2i)$$

$$1+i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C = \frac{1}{2}} \qquad D = -\frac{1}{2}$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x = 1}$$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B = 1}$$

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

$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

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$$i+1 = (Ci+D)\cdot(-2i)$$

$$1+i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C = \frac{1}{2}} \qquad \boxed{D = -\frac{1}{2}}$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x=1}$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

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$$\boxed{B=1}$$

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$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$

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$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot\overbrace{(i^2+1)}^{=0} + (Ci+D)\cdot(i-1)^2$$

$$i+1 = (Ci+D)\cdot(i^2-2i+1)$$

$$i+1 = (Ci+D)\cdot(-2i)$$

$$1+i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C = \frac{1}{2}} \qquad \boxed{D = -\frac{1}{2}}$$

$\boxed{x=0}$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

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$$\boxed{B=1}$$

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

$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

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$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot\overbrace{(i^2+1)}^{=0} + (Ci+D)\cdot(i-1)^2$$

$$i+1 = (Ci+D)\cdot(i^2-2i+1)$$

$$i+1 = (Ci+D)\cdot(-2i)$$

$$1+i = 2C - 2Di \longrightarrow 2C = 1 \qquad -2D = 1$$

$$\boxed{C=\frac{1}{2}} \qquad \boxed{D=-\frac{1}{2}}$$

$$\boxed{x=0}$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

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$$i+1 = (Ci+D)\cdot(-2i)$$

$$1+i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C = \frac{1}{2}} \qquad \boxed{D = -\frac{1}{2}}$$

$$\boxed{x=0}$$

$$0+1$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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

$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

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$$i+1 = (Ci+D)\cdot(-2i)$$

$$1+i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C = \frac{1}{2}} \qquad \boxed{D = -\frac{1}{2}}$$

$$\boxed{x=0}$$

$$0+1 =$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x = 1}$

$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

$$2 = 2B$$

$$\boxed{B = 1}$$

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

$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

$$z_1 = z_2 \Leftrightarrow (x_1 = x_2) \wedge (y_1 = y_2)$$

$\boxed{x = i}$

$$i + 1 = A \cdot (i-1) \cdot \overbrace{(i^2+1)}^{=0} + B \cdot \overbrace{(i^2+1)}^{=0} + (Ci + D) \cdot (i-1)^2$$

$$i + 1 = (Ci + D) \cdot (i^2 - 2i + 1)$$

$$i + 1 = (Ci + D) \cdot (-2i)$$

$$1 + i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C = \frac{1}{2}} \qquad \boxed{D = -\frac{1}{2}}$$

$\boxed{x = 0}$

$$0 + 1 = A \cdot (0 - 1) \cdot (0^2 + 1)$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x=1}$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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

$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

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$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot\overbrace{(i^2+1)}^{=0} + (Ci+D)\cdot(i-1)^2$$

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$$1+i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C = \frac{1}{2}} \qquad \boxed{D = -\frac{1}{2}}$$

$\boxed{x=0}$

$$0+1 = A\cdot(0-1)\cdot(0^2+1)+$$

$$x+1=A(x-1)(x^2+1)+B(x^2+1)+(Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1=A\cdot 0+B\cdot 2+(C+D)\cdot 0$$

$$2=2B$$

$$\boxed{B=1}$$

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

$$z_1=x_1+y_1 i, \quad z_2=x_2+y_2 i$$

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$$i+1=(Ci+D)\cdot(i^2-2i+1)$$

$$i+1=(Ci+D)\cdot(-2i)$$

$$1+i=2C-2Di$$

$$2C=1 \qquad -2D=1$$

$$\boxed{C=\frac{1}{2}} \qquad \boxed{D=-\frac{1}{2}}$$

$$\boxed{x=0}$$

$$0+1=A\cdot(0-1)\cdot(0^2+1)+B\cdot(0^2+1)$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x = 1}$$

$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

$$2 = 2B$$

$$\boxed{B = 1}$$

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

$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

$$z_1 = z_2 \Leftrightarrow (x_1 = x_2) \wedge (y_1 = y_2)$$

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$$i + 1 = A \cdot (i-1) \cdot \overbrace{(i^2+1)}^{=0} + B \cdot \overbrace{(i^2+1)}^{=0} + (Ci + D) \cdot (i-1)^2$$

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$$1 + i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C = \frac{1}{2}} \qquad \boxed{D = -\frac{1}{2}}$$

$$\boxed{x = 0}$$

$$0 + 1 = A \cdot (0-1) \cdot (0^2+1) + B \cdot (0^2+1) +$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

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$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

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$$i+1 = (Ci+D)\cdot(i^2-2i+1)$$

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$$1+i = 2C - 2Di \longrightarrow 2C = 1 \qquad -2D = 1$$

$$\boxed{C=\frac{1}{2}} \qquad \boxed{D=-\frac{1}{2}}$$

$$\boxed{x=0}$$

$$0+1 = A\cdot(0-1)\cdot(0^2+1) + B\cdot(0^2+1) + (C\cdot 0+D)(0-1)^2$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x=1}$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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

$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

$$z_1 = z_2 \Leftrightarrow (x_1 = x_2) \wedge (y_1 = y_2)$$

$\boxed{x=i}$

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$$2C = 1 \qquad -2D = 1$$

$$\boxed{C=\frac{1}{2}} \qquad \boxed{D=-\frac{1}{2}}$$

$\boxed{x=0}$

$$0+1 = A\cdot(0-1)\cdot(0^2+1) + B\cdot(0^2+1) + (C\cdot 0+D)(0-1)^2$$

$$1$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$$\boxed{x=1}$$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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

$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

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$$1+i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C = \frac{1}{2}} \qquad \boxed{D = -\frac{1}{2}}$$

$$\boxed{x=0}$$

$$0+1 = A\cdot(0-1)\cdot(0^2+1) + B\cdot(0^2+1) + (C\cdot 0 + D)(0-1)^2$$

$$1 =$$

$$x+1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx+D)(x-1)^2$$

$\boxed{x=1}$

$$1+1 = A\cdot 0 + B\cdot 2 + (C+D)\cdot 0$$

$$2 = 2B$$

$$\boxed{B=1}$$

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

$$z_1 = x_1 + y_1 i, \quad z_2 = x_2 + y_2 i$$

$$z_1 = z_2 \Leftrightarrow (x_1 = x_2) \wedge (y_1 = y_2)$$

$\boxed{x=i}$

$$i+1 = A\cdot(i-1)\cdot\overbrace{(i^2+1)}^{=0} + B\cdot\overbrace{(i^2+1)}^{=0} + (Ci+D)\cdot(i-1)^2$$

$$i+1 = (Ci+D)\cdot(i^2-2i+1)$$

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$$1+i = 2C - 2Di$$

$$2C = 1 \qquad -2D = 1$$

$$\boxed{C=\frac{1}{2}} \qquad \boxed{D=-\frac{1}{2}}$$

$\boxed{x=0}$

$$0+1 = A\cdot(0-1)\cdot(0^2+1) + B\cdot(0^2+1) + (C\cdot 0+D)(0-1)^2$$

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$\boxed{x = 1}$

$$1 + 1 = A \cdot 0 + B \cdot 2 + (C + D) \cdot 0$$

$$2 = 2B$$

$$\boxed{B = 1}$$

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

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$$1 = -A + B + D$$

$$1 = -A$$

$$x + 1 = A(x-1)(x^2+1) + B(x^2+1) + (Cx + D)(x-1)^2$$

$$\boxed{x = 1}$$

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$$1 = -A + 1 - \frac{1}{2}$$

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$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1}$$

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

$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1}$$

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

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$$\int \frac{x+1}{(x-1)^2(x^2+1)} \, \mathrm{d}x =$$

$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1}$$

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

$$\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x = \int \left(\frac{-\frac{1}{2}}{x-1} + \frac{1}{(x-1)^2} + \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1} \right) \mathrm{d}x$$

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$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1}$$

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$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2}$$

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$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1}$$

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

$$\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x = \int \left(\frac{-\frac{1}{2}}{x-1} + \frac{1}{(x-1)^2} + \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1} \right) \mathrm{d}x =$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C}$$

$$\int \frac{\mathrm{d}x}{(x-1)^2} =$$

$$\int \frac{\quad}{(x-1)^2(x^2+1)} \qquad \int \left(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \right)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

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$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\ x-1=t \right.$$

$$\int \frac{\quad}{(x-1)^2(x^2+1)} \qquad \int \left(\frac{}{x-1} \qquad \frac{}{(x-1)^2} \qquad \frac{}{x^2+1} \right)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

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$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\; x-1 = t \,/\, ' \right.$$

$$\int \frac{x}{(x-1)^2(x^2+1)} \qquad \int \Bigg(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \Bigg)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

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

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

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$$\int \frac{\quad}{(x-1)^2(x^2+1)} \qquad \int \left(\quad x-1 \quad (x-1)^2 \quad x^2+1 \right)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

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$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1 = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right.$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

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$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1 = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right] =$$

$$\int \frac{}{(x-1)^2(x^2+1)} \qquad \int \left(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \right)$$

$$= -\frac{1}{2} \int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1} \, \mathrm{d}x =$$

$$= -\frac{1}{2} \ln|x-1|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a} \ln|ax+b| + C} \qquad \boxed{\int x^n \, \mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1=t\ /\ ' \\ \mathrm{d}x=\mathrm{d}t \end{array}\right] = \int$$

$$\int \frac{}{(x-1)^2(x^2+1)} \qquad \int \left(\quad x-1 \quad (x-1)^2 \quad x^2+1 \right)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1|$$

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$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1 = t \;/\,' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \frac{\mathrm{d}t}{t^2}$$

$$\int \frac{x}{(x-1)^2(x^2+1)} \qquad \int \Bigg(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \quad \Bigg)$$

$$= -\frac{1}{2} \int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2} \ln|x-1|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a} \ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1 = t \;/\,' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \frac{\mathrm{d}t}{t^2} = \int t^{-2}\,\mathrm{d}t$$

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

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1 = t \,/\,' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \frac{\mathrm{d}t}{t^2} = \int t^{-2}\,\mathrm{d}t =$$

$$= \frac{t^{-1}}{-1}$$

$$\int \frac{x}{(x-1)^2(x^2+1)} \qquad \int \Bigg(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \Bigg)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1 = t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array} \right] = \int \frac{\mathrm{d}t}{t^2} = \int t^{-2}\,\mathrm{d}t =$$

$$= \frac{t^{-1}}{-1} + C$$

$$\int \frac{x}{(x-1)^2(x^2+1)} \qquad \int \Bigg(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \Bigg)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1=t \,/\,' \\ \mathrm{d}x=\mathrm{d}t \end{array} \right] = \int \frac{\mathrm{d}t}{t^2} = \int t^{-2}\,\mathrm{d}t =$$

$$= \frac{t^{-1}}{-1} + C = -\frac{1}{t} + C$$

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

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1=t\ /\,' \\ \mathrm{d}x=\mathrm{d}t \end{array}\right] = \int \frac{\mathrm{d}t}{t^2} = \int t^{-2}\,\mathrm{d}t =$$

$$= \frac{t^{-1}}{-1} + C = -\frac{1}{t} + C = -\frac{1}{x-1}$$

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

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1=t\ /\ ' \\ \mathrm{d}x=\mathrm{d}t \end{array}\right] = \int \frac{\mathrm{d}t}{t^2} = \int t^{-2}\,\mathrm{d}t =$$

$$= \frac{t^{-1}}{-1} + C = -\frac{1}{t} + C = -\frac{1}{x-1} + C$$

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

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1=t \,/\, ' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \frac{\mathrm{d}t}{t^2} = \int t^{-2}\,\mathrm{d}t =$$

$$= \frac{t^{-1}}{-1} + C = -\frac{1}{t} + C = -\frac{1}{x-1} + C, \quad C \in \mathbb{R}$$

$$\int \frac{x}{(x-1)^2(x^2+1)} \qquad \int \left(\quad x-1 \quad (x-1)^2 \quad x^2+1 \right)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1|$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\int \frac{\mathrm{d}x}{(x-1)^2} = \left[\begin{array}{c} x-1=t \;/\;' \\ \mathrm{d}x = \mathrm{d}t \end{array}\right] = \int \frac{\mathrm{d}t}{t^2} = \int t^{-2}\,\mathrm{d}t =$$

$$= \frac{t^{-1}}{-1} + C = -\frac{1}{t} + C = -\frac{1}{x-1} + C, \quad C \in \mathbb{R}$$

$$\int \frac{\quad}{(x-1)^2(x^2+1)} \qquad \int \left(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \right)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{\mathrm{d}x}{ax+b} = \frac{1}{a}\ln|ax+b| + C} \qquad \boxed{\int x^n\,\mathrm{d}x = \frac{x^{n+1}}{n+1} + C}$$

$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1}$$

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

$$\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x = \int \left(\frac{-\frac{1}{2}}{x-1} + \frac{1}{(x-1)^2} + \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1} \right) \mathrm{d}x =$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\qquad}{\qquad}$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{}{x^2+1}$$

$$\int \quad (x-1)^2(x^2+1) \qquad \int \Bigg(\; x-1 \qquad (x-1)^2 \qquad x^2+1 \; \Bigg)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{2x}{x^2+1}$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\boxed{2x}}{x^2+1}$$

$$\int \quad (x-1)^2(x^2+1) \qquad \int \Bigg(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \Bigg)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\boxed{2x}}{x^2+1}$$

$(x^2+1)'$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x}}{x^2+1}$$

$(x^2+1)'$

$$\int \quad (x-1)^2(x^2+1) \qquad \int \Big(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \quad \Big)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x}-\frac{1}{2}}{x^2+1} \qquad (x^2+1)'$$

$$= -\frac{1}{2}\int\frac{\mathrm{d}x}{x-1} + \int\frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int\frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x} - \frac{1}{2}}{x^2+1}\,\mathrm{d}x$$

$(x^2+1)'$

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

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x} - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$$= \frac{1}{4}$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x}-\frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$$= \frac{1}{4}\int \frac{2x}{x^2+1}\,\mathrm{d}x$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4} \cdot \boxed{2x} - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$$= \frac{1}{4} \int \frac{2x}{x^2+1}\,\mathrm{d}x - \frac{1}{2}$$

$$= -\frac{1}{2} \int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2} \ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x} - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$$= \frac{1}{4}\int \frac{2x}{x^2+1}\,\mathrm{d}x - \frac{1}{2}\int \frac{\mathrm{d}x}{x^2+1}$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x} - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$$= \frac{1}{4}\int \frac{2x}{x^2+1}\,\mathrm{d}x - \frac{1}{2}\int \frac{\mathrm{d}x}{x^2+1} = \frac{1}{4}$$

$$\int \quad (x-1)^2(x^2+1) \qquad \int \left(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \right)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x}-\frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$$= \frac{1}{4}\int \frac{2x}{x^2+1}\,\mathrm{d}x - \frac{1}{2}\int \frac{\mathrm{d}x}{x^2+1} = \frac{1}{4}\ln\left(x^2+1\right)$$

$$\int \quad (x-1)^2(x^2+1) \qquad \int \Bigg(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \Bigg)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x} - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$$= \frac{1}{4}\int \frac{2x}{x^2+1}\,\mathrm{d}x - \frac{1}{2}\int \frac{\mathrm{d}x}{x^2+1} = \frac{1}{4}\ln\left(x^2+1\right) - \frac{1}{2}$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C} \qquad \boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\,\mathrm{arctg}\,\frac{x}{a} + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x} - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$$= \frac{1}{4}\int \frac{2x}{x^2+1}\,\mathrm{d}x - \frac{1}{2}\int \frac{\mathrm{d}x}{x^2+1} = \frac{1}{4}\ln\left(x^2+1\right) - \frac{1}{2}\operatorname{arctg} x$$

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

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C} \qquad \boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

$$\int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x}-\frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$$= \frac{1}{4}\int \frac{2x}{x^2+1}\,\mathrm{d}x - \frac{1}{2}\int \frac{\mathrm{d}x}{x^2+1} = \frac{1}{4}\ln\left(x^2+1\right) - \frac{1}{2}\operatorname{arctg} x + C$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C} \qquad \boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x} - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$C \in \mathbb{R}$

$$= \frac{1}{4}\int \frac{2x}{x^2+1}\,\mathrm{d}x - \frac{1}{2}\int \frac{\mathrm{d}x}{x^2+1} = \frac{1}{4}\ln\left(x^2+1\right) - \frac{1}{2}\operatorname{arctg} x + C,$$

$$\int \quad (x-1)^2(x^2+1) \qquad \int \left(\quad x-1 \qquad (x-1)^2 \qquad x^2+1 \right)$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C} \qquad \boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

$$\int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x} - \frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$C \in \mathbb{R}$

$$= \frac{1}{4}\int \frac{2x}{x^2+1}\,\mathrm{d}x - \frac{1}{2}\int \frac{\mathrm{d}x}{x^2+1} = \frac{1}{4}\ln\left(x^2+1\right) - \frac{1}{2}\operatorname{arctg} x + C,$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x - \frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1} + \frac{1}{4}\ln\left(x^2+1\right) - \frac{1}{2}\operatorname{arctg} x$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

$$\int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x = \int \frac{\frac{1}{4}\cdot\boxed{2x}-\frac{1}{2}}{x^2+1}\,\mathrm{d}x = \qquad (x^2+1)'$$

$C \in \mathbb{R}$

$$= \frac{1}{4}\int \frac{2x}{x^2+1}\,\mathrm{d}x - \frac{1}{2}\int \frac{\mathrm{d}x}{x^2+1} = \frac{1}{4}\ln\left(x^2+1\right) - \frac{1}{2}\operatorname{arctg} x + C,$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1} + \frac{1}{4}\ln\left(x^2+1\right) - \frac{1}{2}\operatorname{arctg} x + C$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C}$$

$$\boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$

$$\frac{x+1}{(x-1)^2(x^2+1)} = \frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{Cx+D}{x^2+1}$$

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

$$\int \frac{x+1}{(x-1)^2(x^2+1)}\,\mathrm{d}x = \int \left(\frac{-\frac{1}{2}}{x-1} + \frac{1}{(x-1)^2} + \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1} \right) \mathrm{d}x =$$

$$= -\frac{1}{2}\int \frac{\mathrm{d}x}{x-1} + \int \frac{\mathrm{d}x}{(x-1)^2} + \int \frac{\frac{1}{2}x-\frac{1}{2}}{x^2+1}\,\mathrm{d}x =$$

$$= -\frac{1}{2}\ln|x-1| - \frac{1}{x-1} + \frac{1}{4}\ln\left(x^2+1\right) - \frac{1}{2}\operatorname{arctg} x + C, \qquad C \in \mathbb{R}$$

$$\boxed{\int \frac{f'(x)}{f(x)}\,\mathrm{d}x = \ln|f(x)| + C} \qquad \boxed{\int \frac{\mathrm{d}x}{x^2+a^2} = \frac{1}{a}\operatorname{arctg}\frac{x}{a} + C}$$