Derivacija realne funkcije realne varijable

Matematika za ekonomiste 1

Damir Horvat

FOI, Varaždin

Sadržaj

prvi zadatak

Zadatak 1

Odredite derivacije funkcija $f(x) = \sqrt[5]{x^2}$ *i* $g(x) = \left(\frac{2}{5}\right)^x$.

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Rješenje

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$f(x) = \sqrt[5]{x^2} \qquad f(x) = x^{\frac{2}{5}}$

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

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$$\boxed{(x^n)' = nx^{n-1}}$$

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$f(x)=\sqrt[5]{x^2} \qquad f(x)=x^{\frac{2}{5}}$

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drugi zadatak

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Odredite derivaciju funkcije $f(x) = \frac{3}{5}x^3 - \frac{7}{5}x^2 + \frac{9}{5}x + \frac{4}{5}$.

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$$f'(x) = \left(\frac{3}{5}x^3 - \frac{7}{5}x^2 + \frac{9}{5}x + \frac{4}{5}\right)'$$

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$$= \frac{3}{5} \cdot 3x^2$$

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$$= \frac{3}{5} \cdot \left(x^3\right)' - \frac{7}{5} \cdot \left(x^2\right)' + \frac{9}{5} \cdot (x)' + 0 =$$

$$= \frac{3}{5} \cdot 3x^2 - \frac{7}{5} \cdot 2x$$

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$$= \frac{3}{5} \cdot \left(x^3\right)' - \frac{7}{5} \cdot \left(x^2\right)' + \frac{9}{5} \cdot (x)' + 0 =$$

$$= \frac{3}{5} \cdot 3x^2 - \frac{7}{5} \cdot 2x + \frac{9}{5} \cdot 1$$

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$$= \frac{3}{5} \cdot \left(x^3\right)' - \frac{7}{5} \cdot \left(x^2\right)' + \frac{9}{5} \cdot (x)' + 0 =$$

$$= \frac{3}{5} \cdot 3x^2 - \frac{7}{5} \cdot 2x + \frac{9}{5} \cdot 1 = \frac{9}{5}x^2 - \frac{14}{5}x + \frac{9}{5}$$

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treći zadatak

Zadatak 3

Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

Zadatak 3

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

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Rješenje

$$y = \frac{4x^2}{3\sqrt[7]{x^4}}$$

Zadatak 3

$$\frac{x^n}{x^m} = x^{n-m}$$

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

Rješenje

$$y = \frac{4x^2}{3\sqrt[7]{x^4}} = \frac{4x^2}{3x^{\frac{4}{7}}}$$

Zadatak 3

$$\frac{x^n}{x^m} = x^{n-m}$$

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Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

Rješenje

$$y = \frac{4x^2}{3\sqrt[7]{x^4}} = \frac{4x^2}{3x^{\frac{4}{7}}} = \frac{4}{3}x^{2-\frac{4}{7}}$$

Zadatak 3

$$\boxed{\frac{x^n}{x^m} = x^{n-m}} \quad \boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

Rješenje

$$y = \frac{4x^2}{3\sqrt[7]{x^4}} = \frac{4x^2}{3x^{\frac{4}{7}}} = \frac{4}{3}x^{2-\frac{4}{7}}$$

$$y = \frac{4}{3}x^{\frac{10}{7}}$$

Zadatak 3

$$\frac{x^n}{x^m} = x^{n-m}$$

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

$$(cu)'(x) = c \cdot u'(x)$$

Rješenje

$$y = \frac{4x^2}{3\sqrt[7]{x^4}} = \frac{4x^2}{3x^{\frac{4}{7}}} = \frac{4}{3}x^{2-\frac{4}{7}}$$

$$y = \frac{4}{3}x^{\frac{10}{7}}$$

$$y' =$$

Zadatak 3

$$\frac{x^n}{x^m} = x^{n-m}$$ $$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

$$(cu)'(x) = c \cdot u'(x)$$

Rješenje

$$y = \frac{4x^2}{3\sqrt[7]{x^4}} = \frac{4x^2}{3x^{\frac{4}{7}}} = \frac{4}{3}x^{2-\frac{4}{7}}$$

$$y = \frac{4}{3}x^{\frac{10}{7}}$$

$$y' = \frac{4}{3} \cdot$$

Zadatak 3

$$\frac{x^n}{x^m} = x^{n-m}$$

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

$$(cu)'(x) = c \cdot u'(x)$$

$$(x^n)' = nx^{n-1}$$

Rješenje

$$y = \frac{4x^2}{3\sqrt[7]{x^4}} = \frac{4x^2}{3x^{\frac{4}{7}}} = \frac{4}{3}x^{2-\frac{4}{7}}$$

$$y = \frac{4}{3}x^{\frac{10}{7}}$$

$$y' = \frac{4}{3} \cdot \left(x^{\frac{10}{7}}\right)'$$

Zadatak 3

$$\frac{x^n}{x^m} = x^{n-m}$$

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

$$(cu)'(x) = c \cdot u'(x)$$

Rješenje

$$(x^n)' = nx^{n-1}$$

$$y = \frac{4x^2}{3\sqrt[7]{x^4}} = \frac{4x^2}{3x^{\frac{4}{7}}} = \frac{4}{3}x^{2-\frac{4}{7}}$$

$$y = \frac{4}{3}x^{\frac{10}{7}}$$

$$y' = \frac{4}{3} \cdot \left(x^{\frac{10}{7}}\right)' = \frac{4}{3} \cdot$$

Zadatak 3

$$\frac{x^n}{x^m} = x^{n-m}$$

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

$$\boxed{(cu)'(x) = c \cdot u'(x)}$$

Rješenje

$$\boxed{(x^n)' = nx^{n-1}}$$

$$y = \frac{4x^2}{3\sqrt[7]{x^4}} = \frac{4x^2}{3x^{\frac{4}{7}}} = \frac{4}{3}x^{2-\frac{4}{7}}$$

$$y = \frac{4}{3}x^{\frac{10}{7}}$$

$$y' = \frac{4}{3} \cdot \left(x^{\frac{10}{7}}\right)' = \frac{4}{3} \cdot \frac{10}{7}x^{\frac{10}{7}-1}$$

Zadatak 3

$$\boxed{\frac{x^n}{x^m} = x^{n-m}} \quad \boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

$$\boxed{(cu)'(x) = c \cdot u'(x)}$$

Rješenje

$$\boxed{(x^n)' = nx^{n-1}}$$

$$y = \frac{4x^2}{3\sqrt[7]{x^4}} = \frac{4x^2}{3x^{\frac{4}{7}}} = \frac{4}{3}x^{2-\frac{4}{7}}$$

$$y = \frac{4}{3}x^{\frac{10}{7}}$$

$$y' = \frac{4}{3} \cdot \left(x^{\frac{10}{7}}\right)' = \frac{4}{3} \cdot \frac{10}{7}x^{\frac{10}{7}-1}$$

$$y' = \frac{40}{21}x^{\frac{3}{7}}$$

Zadatak 3

$$\frac{x^n}{x^m} = x^{n-m}$$

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \dfrac{4x^2}{3\sqrt[7]{x^4}}$.

$$(cu)'(x) = c \cdot u'(x)$$

Rješenje

$$(x^n)' = nx^{n-1}$$

$$y = \frac{4x^2}{3\sqrt[7]{x^4}} = \frac{4x^2}{3x^{\frac{4}{7}}} = \frac{4}{3}x^{2-\frac{4}{7}}$$

$$y = \frac{4}{3}x^{\frac{10}{7}}$$

$$y' = \frac{4}{3} \cdot \left(x^{\frac{10}{7}}\right)' = \frac{4}{3} \cdot \frac{10}{7}x^{\frac{10}{7}-1}$$

$$y' = \frac{40}{21}x^{\frac{3}{7}} = \frac{40}{21}\sqrt[7]{x^3}$$

četvrti zadatak

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ *u točki* 0.

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ *u točki* 0.

Rješenje

$$y' =$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ *u točki* 0.

Rješenje

$$y' = \big(x\big)'$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \big(x\big)' \cdot$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ *u točki* 0.

Rješenje

$$y' = \big(x\big)' \cdot e^x$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \left(x\right)' \cdot e^x +$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \big(x\big)' \cdot e^x + x$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \big(x\big)' \cdot e^x + x \cdot$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \big(x\big)' \cdot e^x + x \cdot \big(e^x\big)'$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)} \qquad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \left(x\right)' \cdot e^x + x \cdot \left(e^x\right)'$$

$$y' = 1$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)} \quad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \left(x\right)' \cdot e^x + x \cdot \left(e^x\right)'$$

$$y' = 1 \cdot e^x$$

$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$ $\boxed{(x^n)' = nx^{n-1}}$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \big(x\big)' \cdot e^x + x \cdot \big(e^x\big)'$$

$$y' = 1 \cdot e^x +$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)} \quad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \left(x\right)' \cdot e^x + x \cdot \left(e^x\right)'$$

$$y' = 1 \cdot e^x + x$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)} \quad \boxed{(x^n)' = nx^{n-1}} \quad \boxed{(e^x)' = e^x}$$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ *u točki* 0.

Rješenje

$$y' = \big(x\big)' \cdot e^x + x \cdot \big(e^x\big)'$$

$$y' = 1 \cdot e^x + x \cdot e^x$$

$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$ $\boxed{(x^n)' = nx^{n-1}}$ $\boxed{(e^x)' = e^x}$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ *u točki* 0.

Rješenje

$$y' = \big(x\big)' \cdot e^x + x \cdot \big(e^x\big)'$$

$$y' = 1 \cdot e^x + x \cdot e^x$$

$$y' = (1 + x)e^x$$

$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$ $\boxed{(x^n)' = nx^{n-1}}$ $\boxed{(e^x)' = e^x}$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \left(x\right)' \cdot e^x + x \cdot \left(e^x\right)'$$

$$y' = 1 \cdot e^x + x \cdot e^x$$

$$y' = (1 + x)e^x$$

$$y'(0) = (1 + 0) \cdot e^0$$

$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$ $\boxed{(x^n)' = nx^{n-1}}$ $\boxed{(e^x)' = e^x}$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ *u točki* 0.

Rješenje

$$y' = \left(x\right)' \cdot e^x + x \cdot \left(e^x\right)'$$

$$y' = 1 \cdot e^x + x \cdot e^x$$

$$y' = (1 + x)e^x$$

$$y'(0) = (1 + 0) \cdot e^0$$

$$y'(0) = 1 \cdot 1$$

$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$ $\boxed{(x^n)' = nx^{n-1}}$ $\boxed{(e^x)' = e^x}$

Zadatak 4

Odredite derivaciju funkcije $y = xe^x$ u točki 0.

Rješenje

$$y' = \big(x\big)' \cdot e^x + x \cdot \big(e^x\big)'$$

$$y' = 1 \cdot e^x + x \cdot e^x$$

$$y' = (1 + x)e^x$$

$$y'(0) = (1 + 0) \cdot e^0$$

$$y'(0) = 1 \cdot 1$$

$$y'(0) = 1$$

peti zadatak

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \underline{\hspace{10cm}}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{}{(x^3 + 5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)'}{(x^3 + 5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)' \cdot}{(x^3 + 5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)' \cdot (x^3 + 5)}{(x^3 + 5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)' \cdot (x^3 + 5) -}{(x^3 + 5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)' \cdot (x^3 + 5) - (x^3 - 5)}{(x^3 + 5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)' \cdot (x^3 + 5) - (x^3 - 5) \cdot}{(x^3 + 5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)' \cdot (x^3 + 5) - (x^3 - 5) \cdot (x^3 + 5)'}{(x^3 + 5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)' \cdot (x^3 + 5) - (x^3 - 5) \cdot (x^3 + 5)'}{(x^3 + 5)^2} =$$

$$= \frac{\qquad\qquad}{}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

$$\boxed{(u-v)'(x) = u'(x) - v'(x)}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3-5}{x^3+5}$.

Rješenje

$$y' = \frac{(x^3-5)' \cdot (x^3+5) - (x^3-5) \cdot (x^3+5)'}{(x^3+5)^2} =$$

$$= \frac{\qquad}{(x^3+5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

$$\boxed{(u-v)'(x) = u'(x) - v'(x)}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3-5)' \cdot (x^3+5) - (x^3-5) \cdot (x^3+5)'}{(x^3+5)^2} =$$

$$= \frac{3x^2}{(x^3+5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(c)' = 0}$$

$$\boxed{(u-v)'(x) = u'(x) - v'(x)}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3-5}{x^3+5}$.

Rješenje

$$y' = \frac{(x^3-5)' \cdot (x^3+5) - (x^3-5) \cdot (x^3+5)'}{(x^3+5)^2} =$$

$$= \frac{3x^2 \cdot (x^3+5)}{(x^3+5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(c)' = 0}$$

$$(u - v)'(x) = u'(x) - v'(x)$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)' \cdot (x^3 + 5) - (x^3 - 5) \cdot (x^3 + 5)'}{(x^3 + 5)^2} =$$

$$= \frac{3x^2 \cdot (x^3 + 5) - \qquad\qquad}{(x^3 + 5)^2}$$

$$\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}$$

$$(x^n)' = nx^{n-1}$$

$$(c)' = 0$$

$$\boxed{(u - v)'(x) = u'(x) - v'(x)}$$

Zadatak 5

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)' \cdot (x^3 + 5) - (x^3 - 5) \cdot (x^3 + 5)'}{(x^3 + 5)^2} =$$

$$= \frac{3x^2 \cdot (x^3 + 5) - (x^3 - 5)}{(x^3 + 5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(c)' = 0}$$

$$(u - v)'(x) = u'(x) - v'(x)$$

Zadatak 5

$$(u + v)'(x) = u'(x) + v'(x)$$

Odredite derivaciju funkcije $y = \dfrac{x^3 - 5}{x^3 + 5}$.

Rješenje

$$y' = \frac{(x^3 - 5)' \cdot (x^3 + 5) - (x^3 - 5) \cdot (x^3 + 5)'}{(x^3 + 5)^2} =$$

$$= \frac{3x^2 \cdot (x^3 + 5) - (x^3 - 5) \cdot}{(x^3 + 5)^2}$$

$$\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}$$

$$(x^n)' = nx^{n-1}$$

$$(c)' = 0$$

$$(u-v)'(x)=u'(x)-v'(x)$$

Zadatak 5

$$(u+v)'(x)=u'(x)+v'(x)$$

Odredite derivaciju funkcije $y=\dfrac{x^3-5}{x^3+5}$.

Rješenje

$$y'=\frac{(x^3-5)'\cdot(x^3+5)-(x^3-5)\cdot(x^3+5)'}{(x^3+5)^2}=$$

$$=\frac{3x^2\cdot(x^3+5)-(x^3-5)\cdot 3x^2}{(x^3+5)^2}$$

$$\left(\frac{u}{v}\right)'(x)=\frac{u'(x)\cdot v(x)-u(x)\cdot v'(x)}{v(x)^2}$$

$$(x^n)'=nx^{n-1}$$

$$(c)'=0$$

$$\boxed{(u-v)'(x) = u'(x) - v'(x)}$$

Zadatak 5

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \dfrac{x^3-5}{x^3+5}$.

Rješenje

$$y' = \frac{(x^3-5)' \cdot (x^3+5) - (x^3-5) \cdot (x^3+5)'}{(x^3+5)^2} =$$

$$= \frac{3x^2 \cdot (x^3+5) - (x^3-5) \cdot 3x^2}{(x^3+5)^2} =$$

$$= \frac{\qquad\qquad}{}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(c)' = 0}$$

$$(u-v)'(x) = u'(x) - v'(x)$$

Zadatak 5

$$(u+v)'(x) = u'(x) + v'(x)$$

Odredite derivaciju funkcije $y = \dfrac{x^3-5}{x^3+5}$.

Rješenje

$$y' = \frac{(x^3-5)' \cdot (x^3+5) - (x^3-5) \cdot (x^3+5)'}{(x^3+5)^2} =$$

$$= \frac{3x^2 \cdot (x^3+5) - (x^3-5) \cdot 3x^2}{(x^3+5)^2} =$$

$$= \frac{\qquad\qquad}{(x^3+5)^2}$$

$$\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}$$

$$(x^n)' = nx^{n-1}$$

$$(c)' = 0$$

$$\boxed{(u-v)'(x)=u'(x)-v'(x)}$$

Zadatak 5

Odredite derivaciju funkcije $y=\dfrac{x^3-5}{x^3+5}$.

$$\boxed{(u+v)'(x)=u'(x)+v'(x)}$$

Rješenje

$$y'=\frac{(x^3-5)'\cdot(x^3+5)-(x^3-5)\cdot(x^3+5)'}{(x^3+5)^2}=$$

$$=\frac{3x^2\cdot(x^3+5)-(x^3-5)\cdot 3x^2}{(x^3+5)^2}=$$

$$=\frac{3x^5}{(x^3+5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x)=\frac{u'(x)\cdot v(x)-u(x)\cdot v'(x)}{v(x)^2}}$$

$$\boxed{(x^n)'=nx^{n-1}}$$

$$\boxed{(c)'=0}$$

$$(u-v)'(x) = u'(x) - v'(x)$$

Zadatak 5

$$(u+v)'(x) = u'(x) + v'(x)$$

Odredite derivaciju funkcije $y = \dfrac{x^3-5}{x^3+5}$.

Rješenje

$$y' = \frac{(x^3-5)' \cdot (x^3+5) - (x^3-5) \cdot (x^3+5)'}{(x^3+5)^2} =$$

$$= \frac{3x^2 \cdot (x^3+5) - (x^3-5) \cdot 3x^2}{(x^3+5)^2} =$$

$$= \frac{3x^5 + 15x^2}{(x^3+5)^2}$$

$$\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}$$

$$(x^n)' = nx^{n-1}$$

$$(c)' = 0$$

$$\boxed{(u-v)'(x) = u'(x) - v'(x)}$$

Zadatak 5

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \dfrac{x^3-5}{x^3+5}$.

Rješenje

$$y' = \frac{(x^3-5)'\cdot(x^3+5) - (x^3-5)\cdot(x^3+5)'}{(x^3+5)^2} =$$

$$= \frac{3x^2\cdot(x^3+5) - (x^3-5)\cdot 3x^2}{(x^3+5)^2} =$$

$$= \frac{3x^5 + 15x^2 - 3x^5}{(x^3+5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x)\cdot v(x) - u(x)\cdot v'(x)}{v(x)^2}}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(c)' = 0}$$

$$(u-v)'(x) = u'(x) - v'(x)$$

Zadatak 5

$$(u+v)'(x) = u'(x) + v'(x)$$

Odredite derivaciju funkcije $y = \dfrac{x^3-5}{x^3+5}$.

Rješenje

$$y' = \frac{(x^3-5)' \cdot (x^3+5) - (x^3-5) \cdot (x^3+5)'}{(x^3+5)^2} =$$

$$= \frac{3x^2 \cdot (x^3+5) - (x^3-5) \cdot 3x^2}{(x^3+5)^2} =$$

$$= \frac{3x^5 + 15x^2 - 3x^5 + 15x^2}{(x^3+5)^2}$$

$$\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}$$

$$(x^n)' = nx^{n-1}$$

$$(c)' = 0$$

$$\boxed{(u-v)'(x) = u'(x) - v'(x)}$$

Zadatak 5

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \dfrac{x^3-5}{x^3+5}$.

Rješenje

$$y' = \frac{(x^3-5)' \cdot (x^3+5) - (x^3-5) \cdot (x^3+5)'}{(x^3+5)^2} =$$

$$= \frac{3x^2 \cdot (x^3+5) - (x^3-5) \cdot 3x^2}{(x^3+5)^2} =$$

$$= \frac{3x^5 + 15x^2 - 3x^5 + 15x^2}{(x^3+5)^2} = \frac{30x^2}{(x^3+5)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(c)' = 0}$$

šesti zadatak

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)'$$

Zadatak 6

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)'$$

$$(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)'$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x +$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}}$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

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Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)'$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

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

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 6

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x$$

$$(x^n)' = nx^{n-1}$$

$$(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

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Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x +$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + x^{\frac{1}{3}}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

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Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

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$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + x^{\frac{1}{3}} \cdot$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + x^{\frac{1}{3}} \cdot \frac{1}{x\ln 2}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(\log_a x)' = \frac{1}{x\ln a}}$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + x^{\frac{1}{3}} \cdot \frac{1}{x\ln 2} =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x +$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(\log_a x)' = \frac{1}{x\ln a}}$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x.$

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$\boxed{\frac{x^m}{x^n} = x^{m-n}}$$

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + x^{\frac{1}{3}} \cdot \frac{1}{x\ln 2} =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + \frac{x^{-\frac{2}{3}}}{\ln 2}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(\log_a x)' = \frac{1}{x\ln a}}$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$\boxed{\frac{x^m}{x^n} = x^{m-n}}$$

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + x^{\frac{1}{3}} \cdot \frac{1}{x\ln 2} =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + \frac{x^{-\frac{2}{3}}}{\ln 2} =$$

$$= \left(\qquad\qquad\qquad\right)x^{-\frac{2}{3}}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(\log_a x)' = \frac{1}{x\ln a}}$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

Rješenje

$$\boxed{\frac{x^m}{x^n} = x^{m-n}}$$

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + x^{\frac{1}{3}} \cdot \frac{1}{x\ln 2} =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + \frac{x^{-\frac{2}{3}}}{\ln 2} =$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$= \left(\frac{1}{3}\log_2 x \qquad\qquad\right)x^{-\frac{2}{3}}$$

$$\boxed{(\log_a x)' = \frac{1}{x\ln a}}$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

$$\boxed{\frac{x^m}{x^n} = x^{m-n}}$$

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + x^{\frac{1}{3}} \cdot \frac{1}{x\ln 2} =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + \frac{x^{-\frac{2}{3}}}{\ln 2} =$$

$$= \left(\frac{1}{3}\log_2 x + \qquad\right)x^{-\frac{2}{3}}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(\log_a x)' = \frac{1}{x\ln a}}$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

Zadatak 6

Odredite derivaciju funkcije $y = \sqrt[3]{x}\log_2 x$.

$$\boxed{\sqrt[n]{x^m} = x^{\frac{m}{n}}}$$

$$\boxed{\frac{x^m}{x^n} = x^{m-n}}$$

Rješenje

$$y' = \left(\sqrt[3]{x}\log_2 x\right)' = \left(x^{\frac{1}{3}}\log_2 x\right)' =$$

$$= \left(x^{\frac{1}{3}}\right)' \cdot \log_2 x + x^{\frac{1}{3}} \cdot (\log_2 x)' =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + x^{\frac{1}{3}} \cdot \frac{1}{x\ln 2} =$$

$$= \frac{1}{3}x^{-\frac{2}{3}}\log_2 x + \frac{x^{-\frac{2}{3}}}{\ln 2} =$$

$$= \left(\frac{1}{3}\log_2 x + \frac{1}{\ln 2}\right)x^{-\frac{2}{3}}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{(\log_a x)' = \frac{1}{x\ln a}}$$

$$\boxed{(uv)'(x) = u'(x)\cdot v(x) + u(x)\cdot v'(x)}$$

sedmi zadatak

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Rješenje

$$y' = \underline{\hspace{10cm}}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x)\cdot v(x) - u(x)\cdot v'(x)}{v(x)^2}}$$

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Rješenje

$$y' = \frac{(\ln x + 1)'}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot \qquad\qquad\qquad\qquad\qquad\qquad}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1)}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) \; - \qquad\qquad\qquad\qquad}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1)}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot \qquad\qquad}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Rješenje

$$y' = \frac{(\ln x+1)' \cdot (\ln x-1) - (\ln x+1) \cdot (\ln x-1)'}{(\ln x-1)^2} =$$

$$= \frac{\qquad\qquad}{}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x)\cdot v(x) - u(x)\cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$(u+v)'(x) = u'(x) + v'(x)$$

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Rješenje

$$y' = \frac{(\ln x+1)' \cdot (\ln x-1) - (\ln x+1) \cdot (\ln x-1)'}{(\ln x-1)^2} =$$

$$= \frac{\qquad}{(\ln x-1)^2}$$

$$\left(\frac{u}{v}\right)'(x) = \frac{u'(x)\cdot v(x) - u(x)\cdot v'(x)}{v(x)^2}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x}}{(\ln x - 1)^2}$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot}{(\ln x - 1)^2}$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1)}{(\ln x - 1)^2}$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1) -}{(\ln x - 1)^2}$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1) - (\ln x + 1)}{(\ln x - 1)^2}$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1) - (\ln x + 1) \cdot}{(\ln x - 1)^2}$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1) - (\ln x + 1) \cdot \frac{1}{x}}{(\ln x - 1)^2}$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1) - (\ln x + 1) \cdot \frac{1}{x}}{(\ln x - 1)^2} =$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$= \frac{\qquad}{\qquad}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1) - (\ln x + 1) \cdot \frac{1}{x}}{(\ln x - 1)^2} =$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$= \frac{}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1) - (\ln x + 1) \cdot \frac{1}{x}}{(\ln x - 1)^2} =$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$= \frac{\frac{1}{x} \ln x}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Rješenje

$$y' = \frac{(\ln x+1)' \cdot (\ln x-1) - (\ln x+1) \cdot (\ln x-1)'}{(\ln x-1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x-1) - (\ln x+1) \cdot \frac{1}{x}}{(\ln x-1)^2} =$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$= \frac{\frac{1}{x}\ln x - \frac{1}{x}}{(\ln x-1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x)\cdot v(x) - u(x)\cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1) - (\ln x + 1) \cdot \frac{1}{x}}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x}\ln x - \frac{1}{x} - \frac{1}{x}\ln x}{(\ln x - 1)^2}$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1) - (\ln x + 1) \cdot \frac{1}{x}}{(\ln x - 1)^2} =$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$= \frac{\frac{1}{x}\ln x - \frac{1}{x} - \frac{1}{x}\ln x - \frac{1}{x}}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x + 1}{\ln x - 1}$.

Rješenje

$$y' = \frac{(\ln x + 1)' \cdot (\ln x - 1) - (\ln x + 1) \cdot (\ln x - 1)'}{(\ln x - 1)^2} =$$

$$= \frac{\frac{1}{x} \cdot (\ln x - 1) - (\ln x + 1) \cdot \frac{1}{x}}{(\ln x - 1)^2} =$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$= \frac{\frac{1}{x} \ln x - \frac{1}{x} - \frac{1}{x} \ln x - \frac{1}{x}}{(\ln x - 1)^2} = \frac{-\frac{2}{x}}{(\ln x - 1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 7

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Odredite derivaciju funkcije $y = \frac{\ln x+1}{\ln x-1}$.

Rješenje

$$y' = \frac{(\ln x+1)' \cdot (\ln x-1) - (\ln x+1)\cdot(\ln x-1)'}{(\ln x-1)^2} =$$

$$= \frac{\frac{1}{x}\cdot(\ln x-1) - (\ln x+1)\cdot\frac{1}{x}}{(\ln x-1)^2} =$$

$$\boxed{(c)' = 0}$$

$$\boxed{(\ln x)' = \frac{1}{x}}$$

$$= \frac{\frac{1}{x}\ln x - \frac{1}{x} - \frac{1}{x}\ln x - \frac{1}{x}}{(\ln x-1)^2} = \frac{-\frac{2}{x}}{(\ln x-1)^2} =$$

$$= \frac{-2}{x(\ln x-1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x)\cdot v(x) - u(x)\cdot v'(x)}{v(x)^2}}$$

osmi zadatak

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = \left(10^x \log x + \ln 10\right)'$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)'$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10.$

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)'$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10.$

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10.$

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$*.*

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x +$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10.$

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)'$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)' + 0$$

$$\boxed{(c)' = 0}$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)' + 0 =$$

$$= 10^x \ln 10$$

$$\boxed{(c)' = 0}$$

$$\boxed{(a^x)' = a^x \ln a}$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10.$

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)' + 0 =$$

$$= 10^x \ln 10 \cdot \log x$$

$$\boxed{(c)' = 0}$$

$$\boxed{(a^x)' = a^x \ln a}$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)' + 0 =$$

$$= 10^x \ln 10 \cdot \log x +$$

$$\boxed{(c)' = 0}$$

$$\boxed{(a^x)' = a^x \ln a}$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10.$

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)' + 0 =$$

$$= 10^x \ln 10 \cdot \log x + 10^x$$

$$\boxed{(c)' = 0}$$

$$\boxed{(a^x)' = a^x \ln a}$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)' + 0 =$$

$$= 10^x \ln 10 \cdot \log x + 10^x \cdot$$

$$\boxed{(c)' = 0}$$

$$\boxed{(a^x)' = a^x \ln a}$$

$$\boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)' + 0 =$$

$$= 10^x \ln 10 \cdot \log x + 10^x \cdot \frac{1}{x \ln 10}$$

$$\boxed{(c)' = 0}$$

$$\boxed{(a^x)' = a^x \ln a}$$

$$\boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)' + 0 =$$

$$= 10^x \ln 10 \cdot \log x + 10^x \cdot \frac{1}{x \ln 10} =$$

$$= \left(\qquad\qquad\qquad \right) 10^x$$

$$\boxed{(c)' = 0}$$

$$\boxed{(a^x)' = a^x \ln a}$$

$$\boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10.$

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)' + 0 =$$

$$= 10^x \ln 10 \cdot \log x + 10^x \cdot \frac{1}{x \ln 10} =$$

$$= \left(\ln 10 \log x \qquad\qquad \right) 10^x$$

$$\boxed{(c)' = 0}$$

$$\boxed{(a^x)' = a^x \ln a}$$

$$\boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = \left(10^x \log x + \ln 10\right)' = \left(10^x \log x\right)' + \left(\ln 10\right)' =$$

$$= \left(10^x\right)' \cdot \log x + 10^x \cdot \left(\log x\right)' + 0 =$$

$$= 10^x \ln 10 \cdot \log x + 10^x \cdot \frac{1}{x \ln 10} =$$

$$= \left(\ln 10 \log x + \qquad \right) 10^x$$

$\boxed{(c)' = 0}$

$\boxed{(a^x)' = a^x \ln a}$

$\boxed{(\log_a x)' = \frac{1}{x \ln a}}$

$\boxed{(u+v)'(x) = u'(x) + v'(x)}$

$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$

Zadatak 8

Odredite derivaciju funkcije $y = 10^x \log x + \ln 10$.

Rješenje

$$y' = (10^x \log x + \ln 10)' = (10^x \log x)' + (\ln 10)' =$$

$$= (10^x)' \cdot \log x + 10^x \cdot (\log x)' + 0 =$$

$$= 10^x \ln 10 \cdot \log x + 10^x \cdot \frac{1}{x \ln 10} =$$

$$= \left(\ln 10 \log x + \frac{1}{x \ln 10} \right) 10^x$$

$$\boxed{(c)' = 0}$$

$$\boxed{(a^x)' = a^x \ln a}$$

$$\boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

$$\boxed{(u+v)'(x) = u'(x) + v'(x)}$$

$$\boxed{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}$$

deveti zadatak

Zadatak 9

Odredite derivaciju funkcije $y = e^{\sqrt{x}}$.

Zadatak 9

Odredite derivaciju funkcije $y = e^{\sqrt{x}}$.

Rješenje

$$y' =$$

$$\boxed{\left(e^{\text{nešto}}\right)' = e^{\text{nešto}} \cdot \left(\text{nešto}\right)'}$$

$$\boxed{\left(e^{x}\right)' = e^{x}}$$

Zadatak 9

Odredite derivaciju funkcije $y = e^{\sqrt{x}}$.

Rješenje

$$y' = e^{\sqrt{x}}$$

$$\boxed{\left(e^{\text{nešto}}\right)' = e^{\text{nešto}} \cdot \left(\text{nešto}\right)'}$$

$$\boxed{(e^x)' = e^x}$$

Zadatak 9

Odredite derivaciju funkcije $y = e^{\sqrt{x}}$.

Rješenje

$$y' = e^{\sqrt{x}} \cdot$$

$$\boxed{\left(e^{\text{nešto}}\right)' = e^{\text{nešto}} \cdot \left(\text{nešto}\right)'}$$

$$\boxed{(e^x)' = e^x}$$

Zadatak 9

Odredite derivaciju funkcije $y = e^{\sqrt{x}}$.

Rješenje

$$y' = e^{\sqrt{x}} \cdot \left(\sqrt{x}\right)'$$

$$\boxed{\left(e^{\text{nešto}}\right)' = e^{\text{nešto}} \cdot \left(\text{nešto}\right)'}$$

$$\boxed{(e^x)' = e^x}$$

Zadatak 9

Odredite derivaciju funkcije $y = e^{\sqrt{x}}$.

Rješenje

$$y' = e^{\sqrt{x}} \cdot \left(\sqrt{x}\right)' = e^{\sqrt{x}}$$

$$\boxed{\left(e^{\text{nešto}}\right)' = e^{\text{nešto}} \cdot \left(\text{nešto}\right)'}$$

$$\boxed{(e^x)' = e^x}$$

$$\left(\sqrt{x}\right)' = \frac{1}{2\sqrt{x}}$$

Zadatak 9

Odredite derivaciju funkcije $y = e^{\sqrt{x}}$.

Rješenje

$$y' = e^{\sqrt{x}} \cdot \left(\sqrt{x}\right)' = e^{\sqrt{x}} \cdot \frac{1}{2\sqrt{x}}$$

$$\left(e^{\text{nešto}}\right)' = e^{\text{nešto}} \cdot \left(\text{nešto}\right)'$$

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

$$\boxed{\left(\sqrt{x}\right)' = \frac{1}{2\sqrt{x}}}$$

Zadatak 9

Odredite derivaciju funkcije $y = e^{\sqrt{x}}$.

Rješenje

$$y' = e^{\sqrt{x}} \cdot \left(\sqrt{x}\right)' = e^{\sqrt{x}} \cdot \frac{1}{2\sqrt{x}}$$

$$y' = \frac{e^{\sqrt{x}}}{2\sqrt{x}}$$

$$\boxed{\left(e^{\text{nešto}}\right)' = e^{\text{nešto}} \cdot (\text{nešto})'}$$

$$\boxed{(e^x)' = e^x}$$

deseti zadatak

Zadatak 10

Odredite derivaciju funkcije $y = (x^2 + 3x - 5)^{20}$.

Zadatak 10

Odredite derivaciju funkcije $y = (x^2 + 3x - 5)^{20}$.

Rješenje

$$y' =$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

Zadatak 10

Odredite derivaciju funkcije $y = (x^2 + 3x - 5)^{20}$.

Rješenje

$$y' = 20\left(x^2 + 3x - 5\right)^{19}$$

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

Zadatak 10

Odredite derivaciju funkcije $y = \left(x^2 + 3x - 5\right)^{20}$.

Rješenje

$$y' = 20\left(x^2 + 3x - 5\right)^{19} \cdot$$

$$\boxed{\Big(\big(\text{nešto}\big)^n\Big)' = n\big(\text{nešto}\big)^{n-1} \cdot \big(\text{nešto}\big)'}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

Zadatak 10

Odredite derivaciju funkcije $y = (x^2 + 3x - 5)^{20}$.

Rješenje

$$y' = 20\left(x^2 + 3x - 5\right)^{19} \cdot \left(x^2 + 3x - 5\right)'$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

Zadatak 10

Odredite derivaciju funkcije $y = \left(x^2 + 3x - 5\right)^{20}$.

Rješenje

$$y' = 20\left(x^2 + 3x - 5\right)^{19} \cdot \left(x^2 + 3x - 5\right)' =$$

$$= 20\left(x^2 + 3x - 5\right)^{19}$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

Zadatak 10

Odredite derivaciju funkcije $y = (x^2 + 3x - 5)^{20}$.

Rješenje

$$y' = 20\left(x^2 + 3x - 5\right)^{19} \cdot \left(x^2 + 3x - 5\right)' =$$

$$= 20\left(x^2 + 3x - 5\right)^{19} (2x$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$

$$\boxed{(x^n)' = nx^{n-1}}$$

Zadatak 10

Odredite derivaciju funkcije $y = \left(x^2 + 3x - 5\right)^{20}$.

Rješenje

$$y' = 20\left(x^2 + 3x - 5\right)^{19} \cdot \left(x^2 + 3x - 5\right)' =$$

$$= 20\left(x^2 + 3x - 5\right)^{19}(2x + 3)$$

$$\boxed{\Big(\big(\text{nešto}\big)^n\Big)' = n\big(\text{nešto}\big)^{n-1} \cdot \big(\text{nešto}\big)'}$$

$$\boxed{\left(x^n\right)' = nx^{n-1}}$$

jedanaesti zadatak

Zadatak 11

Odredite derivaciju funkcije $y = \log_5(5^x - x^5)$.

Zadatak 11

Odredite derivaciju funkcije $y = \log_5 (5^x - x^5)$.

Rješenje

$$y' =$$

$$\boxed{\left(\log_a (\text{nešto})\right)' = \frac{1}{\text{nešto} \cdot \ln a} \cdot (\text{nešto})'} \qquad \boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

Zadatak 11

Odredite derivaciju funkcije $y = \log_5 (5^x - x^5)$.

Rješenje

$$y' = \frac{1}{(5^x - x^5)\ln 5}$$

$$\boxed{\big(\log_a (\text{nešto})\big)' = \frac{1}{\text{nešto} \cdot \ln a} \cdot (\text{nešto})'} \qquad \boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

Zadatak 11

Odredite derivaciju funkcije $y = \log_5(5^x - x^5)$.

Rješenje

$$y' = \frac{1}{(5^x - x^5)\ln 5} \cdot$$

$$\boxed{\left(\log_a(\text{nešto})\right)' = \frac{1}{\text{nešto} \cdot \ln a} \cdot (\text{nešto})'} \qquad \boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

Zadatak 11

Odredite derivaciju funkcije $y = \log_5\left(5^x - x^5\right)$.

Rješenje

$$y' = \frac{1}{\left(5^x - x^5\right)\ln 5} \cdot \left(5^x - x^5\right)'$$

$$\boxed{\left(\log_a(\text{nešto})\right)' = \frac{1}{\text{nešto} \cdot \ln a} \cdot (\text{nešto})'} \qquad \boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

Zadatak 11

Odredite derivaciju funkcije $y = \log_5 (5^x - x^5)$.

Rješenje

$$y' = \frac{1}{(5^x - x^5)\ln 5} \cdot \left(5^x - x^5\right)' = \underline{\hspace{5cm}}$$

$$\boxed{\left(\log_a(\text{nešto})\right)' = \frac{1}{\text{nešto} \cdot \ln a} \cdot (\text{nešto})'} \qquad \boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

$$\boxed{(a^x)' = a^x \ln a} \qquad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 11

Odredite derivaciju funkcije $y = \log_5 \left(5^x - x^5\right)$.

Rješenje

$$y' = \frac{1}{\left(5^x - x^5\right) \ln 5} \cdot \left(5^x - x^5\right)' = \frac{}{\left(5^x - x^5\right) \ln 5}$$

$$\boxed{\left(\log_a (\text{nešto})\right)' = \frac{1}{\text{nešto} \cdot \ln a} \cdot (\text{nešto})'} \qquad \boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

$$\boxed{(a^x)' = a^x \ln a} \qquad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 11

Odredite derivaciju funkcije $y = \log_5 (5^x - x^5)$.

Rješenje

$$y' = \frac{1}{(5^x - x^5)\ln 5} \cdot \left(5^x - x^5\right)' = \frac{5^x \ln 5}{(5^x - x^5)\ln 5}$$

$$\boxed{\left(\log_a (\text{nešto})\right)' = \frac{1}{\text{nešto} \cdot \ln a} \cdot (\text{nešto})'} \qquad \boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

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Zadatak 11

Odredite derivaciju funkcije $y = \log_5 \left(5^x - x^5\right)$.

Rješenje

$$y' = \frac{1}{\left(5^x - x^5\right)\ln 5} \cdot \left(5^x - x^5\right)' = \frac{5^x \ln 5 -}{\left(5^x - x^5\right)\ln 5}$$

$$\boxed{\left(\log_a (\text{nešto})\right)' = \frac{1}{\text{nešto} \cdot \ln a} \cdot (\text{nešto})'} \qquad \boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

$\boxed{(a^x)' = a^x \ln a}$ $\boxed{(x^n)' = nx^{n-1}}$

Zadatak 11

Odredite derivaciju funkcije $y = \log_5 (5^x - x^5)$.

Rješenje

$$y' = \frac{1}{(5^x - x^5)\ln 5} \cdot \left(5^x - x^5\right)' = \frac{5^x \ln 5 - 5x^4}{(5^x - x^5)\ln 5}$$

$$\boxed{\left(\log_a(\text{nešto})\right)' = \frac{1}{\text{nešto} \cdot \ln a} \cdot (\text{nešto})'} \qquad \boxed{(\log_a x)' = \frac{1}{x \ln a}}$$

dvanaesti zadatak

Zadatak 12

Odredite derivacije funkcija $f(x) = \ln 5x$, $g(x) = \ln x^5$ *i* $h(x) = \ln^5 x$.

Zadatak 12

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Odredite derivacije funkcija $f(x) = \ln 5x$, $g(x) = \ln x^5$ *i* $h(x) = \ln^5 x$.

Rješenje

$f(x) = \ln 5x$

$f'(x) =$

$$\boxed{\left(\ln(\text{nešto})\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

Zadatak 12

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$ $$\boxed{(x^n)' = nx^{n-1}}$$

Odredite derivacije funkcija $f(x) = \ln 5x$, $g(x) = \ln x^5$ *i* $h(x) = \ln^5 x$.

Rješenje

$$f(x) = \ln 5x$$

$$f'(x) = \frac{1}{5x}$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$ $$\boxed{(\ln x)' = \frac{1}{x}}$$

Zadatak 12

$$\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'$$

$$(x^n)' = nx^{n-1}$$

Odredite derivacije funkcija $f(x) = \ln 5x$, $g(x) = \ln x^5$ *i* $h(x) = \ln^5 x$.

Rješenje

$$f(x) = \ln 5x$$

$$f'(x) = \frac{1}{5x} \cdot$$

$$\left(\ln(\text{nešto})\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$(\ln x)' = \frac{1}{x}$$

Zadatak 12

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1}\cdot(\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Odredite derivacije funkcija $f(x) = \ln 5x$, $g(x) = \ln x^5$ *i* $h(x) = \ln^5 x$.

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$$f(x) = \ln 5x$$

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Rješenje

$$f(x) = \ln 5x$$

$$f'(x) = \frac{1}{5x} \cdot (5x)'$$

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Rješenje

$$f(x) = \ln 5x$$

$$f'(x) = \frac{1}{5x} \cdot (5x)'$$

$$f'(x) = \frac{1}{5x} \cdot 5$$

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Zadatak 12

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$$f'(x) = \frac{1}{5x} \cdot 5$$

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$$g(x) = \ln x^5$$

$$g'(x) =$$

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Zadatak 12

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$$g(x) = \ln x^5$$

$$g'(x) = \frac{1}{x^5} \cdot$$

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$$g'(x) = \frac{1}{x^5}$$

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Zadatak 12

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$$g'(x) = \frac{1}{x^5} \cdot \left(x^5\right)'$$

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Zadatak 12

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Zadatak 12

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Odredite derivacije funkcija $f(x) = \ln 5x$, $g(x) = \ln x^5$ *i* $h(x) = \ln^5 x$.

Rješenje

$f(x) = \ln 5x$	$g(x) = \ln x^5$	$h(x) = \ln^5 x$
$f'(x) = \frac{1}{5x} \cdot (5x)'$	$g'(x) = \frac{1}{x^5} \cdot \left(x^5\right)'$	
$f'(x) = \frac{1}{5x} \cdot 5$	$g'(x) = \frac{1}{x^5} \cdot 5x^4$	
$f'(x) = \frac{1}{x}$	$g'(x) = \frac{5}{x}$	

$$\boxed{\left(\ln(\text{nešto})\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}} \quad \boxed{\ln^k x = (\ln x)^k}$$

Zadatak 12

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$ $$\boxed{(x^n)' = nx^{n-1}}$$

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Rješenje

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$$g'(x) = \frac{1}{x^5} \cdot \left(x^5\right)'$$

$$g'(x) = \frac{1}{x^5} \cdot 5x^4$$

$$g'(x) = \frac{5}{x}$$

$$h(x) = \ln^5 x$$

$$h(x) = (\ln x)^5$$

$$\boxed{\left(\ln(\text{nešto})\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$ $$\boxed{(\ln x)' = \frac{1}{x}}$$ $$\boxed{\ln^k x = (\ln x)^k}$$

Zadatak 12

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1}\cdot(\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Odredite derivacije funkcija $f(x) = \ln 5x$, $g(x) = \ln x^5$ *i* $h(x) = \ln^5 x$.

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$$g'(x) = \frac{1}{x^5}\cdot 5x^4$$

$$g'(x) = \frac{5}{x}$$

$$h(x) = \ln^5 x$$

$$h(x) = (\ln x)^5$$

$$h'(x) =$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}}\cdot(\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}} \quad \boxed{\ln^k x = (\ln x)^k}$$

Zadatak 12

$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$ $\boxed{(x^n)' = nx^{n-1}}$

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$$h'(x) = 5\,(\ln x)^4$$

$\boxed{\left(\ln(\text{nešto})\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$ $\boxed{(\ln x)' = \frac{1}{x}}$ $\boxed{\ln^k x = (\ln x)^k}$

Zadatak 12

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

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$$h'(x) = 5\,(\ln x)^4 \;\cdot$$

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Rješenje

$$f(x) = \ln 5x$$

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$$h(x) = (\ln x)^5$$

$$h'(x) = 5\,(\ln x)^4 \cdot (\ln x)'$$

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$$f'(x) = \frac{1}{5x} \cdot (5x)'$$

$$f'(x) = \frac{1}{5x} \cdot 5$$

$$f'(x) = \frac{1}{x}$$

$$g(x) = \ln x^5$$

$$g'(x) = \frac{1}{x^5} \cdot \left(x^5\right)'$$

$$g'(x) = \frac{1}{x^5} \cdot 5x^4$$

$$g'(x) = \frac{5}{x}$$

$$h(x) = \ln^5 x$$

$$h(x) = (\ln x)^5$$

$$h'(x) = 5\,(\ln x)^4 \cdot (\ln x)'$$

$$h'(x) = 5\,(\ln x)^4$$

$$\boxed{\left(\ln(\text{nešto})\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}} \quad \boxed{\ln^k x = (\ln x)^k}$$

Zadatak 12

$$\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'$$

$$(x^n)' = nx^{n-1}$$

Odredite derivacije funkcija $f(x) = \ln 5x$, $g(x) = \ln x^5$ *i* $h(x) = \ln^5 x$.

Rješenje

$$f(x) = \ln 5x$$

$$f'(x) = \frac{1}{5x} \cdot (5x)'$$

$$f'(x) = \frac{1}{5x} \cdot 5$$

$$f'(x) = \frac{1}{x}$$

$$g(x) = \ln x^5$$

$$g'(x) = \frac{1}{x^5} \cdot \left(x^5\right)'$$

$$g'(x) = \frac{1}{x^5} \cdot 5x^4$$

$$g'(x) = \frac{5}{x}$$

$$h(x) = \ln^5 x$$

$$h(x) = (\ln x)^5$$

$$h'(x) = 5\,(\ln x)^4 \cdot (\ln x)'$$

$$h'(x) = 5\,(\ln x)^4 \cdot \frac{1}{x}$$

$$\left(\ln(\text{nešto})\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$(\ln x)' = \frac{1}{x}$$

$$\ln^k x = (\ln x)^k$$

Zadatak 12

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1}\cdot(\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Odredite derivacije funkcija $f(x) = \ln 5x$, $g(x) = \ln x^5$ *i* $h(x) = \ln^5 x$.

Rješenje

$$f(x) = \ln 5x$$

$$f'(x) = \frac{1}{5x}\cdot(5x)'$$

$$f'(x) = \frac{1}{5x}\cdot 5$$

$$f'(x) = \frac{1}{x}$$

$$g(x) = \ln x^5$$

$$g'(x) = \frac{1}{x^5}\cdot\left(x^5\right)'$$

$$g'(x) = \frac{1}{x^5}\cdot 5x^4$$

$$g'(x) = \frac{5}{x}$$

$$h(x) = \ln^5 x$$

$$h(x) = (\ln x)^5$$

$$h'(x) = 5(\ln x)^4 \cdot (\ln x)'$$

$$h'(x) = 5(\ln x)^4 \cdot \frac{1}{x}$$

$$h'(x) = \frac{5}{x}\ln^4 x$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}}\cdot(\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}} \quad \boxed{\ln^k x = (\ln x)^k}$$

trinaesti zadatak

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

$$\boxed{(\ln x)' = \frac{1}{x}}$$

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' =$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

$$\boxed{(\ln x)' = \frac{1}{x}}$$

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' = \frac{1}{\dfrac{x-1}{x+1}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

$$\boxed{(\ln x)' = \frac{1}{x}}$$

Rješenje

$$\boxed{\left(\ln(\text{nešto})\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' = \frac{1}{\frac{x-1}{x+1}} \cdot$$

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Rješenje

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Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

$$\boxed{(\ln x)' = \frac{1}{x}}$$

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' = \frac{1}{\frac{x-1}{x+1}} \cdot \left(\frac{x-1}{x+1}\right)' =$$

$$= \frac{x+1}{x-1}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

$$\boxed{(\ln x)' = \frac{1}{x}}$$

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' = \frac{1}{\frac{x-1}{x+1}} \cdot \left(\frac{x-1}{x+1}\right)' =$$

$$= \frac{x+1}{x-1} \cdot$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x)\cdot v(x) - u(x)\cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

$$\boxed{(\ln x)' = \frac{1}{x}}$$

Rješenje

$$\boxed{\Big(\ln(\text{nešto})\Big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' = \frac{1}{\frac{x-1}{x+1}} \cdot \left(\frac{x-1}{x+1}\right)' =$$

$$= \frac{x+1}{x-1} \cdot \rule{10cm}{0.4pt}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

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Rješenje

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$$= \frac{x+1}{x-1} \cdot \frac{\qquad\qquad}{(x+1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x)\cdot v(x) - u(x)\cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

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Rješenje

$$\boxed{\Big(\ln\left(\text{nešto}\right)\Big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' = \frac{1}{\frac{x-1}{x+1}} \cdot \left(\frac{x-1}{x+1}\right)' =$$

$$= \frac{x+1}{x-1} \cdot \frac{(x-1)'\qquad\qquad\qquad\qquad\qquad\qquad}{(x+1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

$$\boxed{(\ln x)' = \frac{1}{x}}$$

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

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$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot \qquad\qquad\qquad\qquad}{(x+1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

$$\boxed{(\ln x)' = \frac{1}{x}}$$

Rješenje

$$y' = \frac{1}{\frac{x-1}{x+1}} \cdot \left(\frac{x-1}{x+1}\right)' =$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1)}{(x+1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

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Rješenje

$$y' = \frac{1}{\frac{x-1}{x+1}} \cdot \left(\frac{x-1}{x+1}\right)' =$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) -}{(x+1)^2}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

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Rješenje

$$\boxed{\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' = \frac{1}{\dfrac{x-1}{x+1}} \cdot \left(\frac{x-1}{x+1}\right)' =$$

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Zadatak 13

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Rješenje

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$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot }{(x+1)^2}$$

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Rješenje

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$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2}$$

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$$= \frac{x+1}{x-1}$$

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$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2} =$$

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

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

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Rješenje

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$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2} =$$

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

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

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$$= \frac{x+1}{x-1} \cdot \frac{1 \cdot (x+1) \qquad\qquad\qquad}{(x+1)^2}$$

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$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2} =$$

$$= \frac{x+1}{x-1} \cdot \frac{1 \cdot (x+1) - \qquad\qquad}{(x+1)^2}$$

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$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2} =$$

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$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2} =$$

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

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

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$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2} =$$

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

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

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$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2} =$$

$$= \frac{x+1}{x-1} \cdot \frac{1 \cdot (x+1) - (x-1) \cdot 1}{(x+1)^2} = \underline{\qquad\qquad}$$

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

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Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' = \frac{1}{\frac{x-1}{x+1}} \cdot \left(\frac{x-1}{x+1}\right)' =$$

$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2} =$$

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

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

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Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' = \frac{1}{\frac{x-1}{x+1}} \cdot \left(\frac{x-1}{x+1}\right)' =$$

$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2} =$$

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

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

Zadatak 13

Odredite derivaciju funkcije $y = \ln \dfrac{x-1}{x+1}$.

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$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'}$$

$$y' = \frac{1}{\frac{x-1}{x+1}} \cdot \left(\frac{x-1}{x+1}\right)' =$$

$$= \frac{x+1}{x-1} \cdot \frac{(x-1)' \cdot (x+1) - (x-1) \cdot (x+1)'}{(x+1)^2} =$$

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

$$\boxed{\left(\frac{u}{v}\right)'(x) = \frac{u'(x) \cdot v(x) - u(x) \cdot v'(x)}{v(x)^2}}$$

četrnaesti zadatak

Zadatak 14

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

Zadatak 14

$$(\sqrt{x})' = \frac{1}{2\sqrt{x}}$$

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

Rješenje

$$y' =$$

$$\left(\sqrt{\text{nešto}}\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

Zadatak 14

$$\left(\sqrt{x}\,\right)' = \frac{1}{2\sqrt{x}}$$

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}}$$

$$\left(\sqrt{\text{nešto}}\,\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

$$(\sqrt{x})' = \frac{1}{2\sqrt{x}}$$

Zadatak 14

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot$$

$$\left(\sqrt{\text{nešto}}\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

Zadatak 14

$$\left(\sqrt{x}\,\right)' = \frac{1}{2\sqrt{x}}$$

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \Big(\sin\left(x^2 - 1\right) \Big)'$$

$$\left(\sqrt{\text{nešto}}\,\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

Zadatak 14

$$\boxed{(\sqrt{x})' = \frac{1}{2\sqrt{x}}}$$

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \Big(\sin\left(x^2-1\right)\Big)' =$$

$$= \frac{1}{2\sqrt{\sin\left(x^2-1\right)}}$$

$$\boxed{\left(\sqrt{\text{nešto}}\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'}$$

Zadatak 14

$$\left(\sqrt{x}\,\right)' = \frac{1}{2\sqrt{x}}$$

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

$$(\sin x)' = \cos x$$

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \Big(\sin\left(x^2-1\right)\Big)' =$$

$$= \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot$$

$$\left(\sqrt{\text{nešto}}\,\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

$$\Big(\sin\left(\text{nešto}\right)\Big)' = \cos\left(\text{nešto}\right) \cdot (\text{nešto})'$$

Zadatak 14

$$(\sqrt{x}\,)' = \frac{1}{2\sqrt{x}}$$

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

$$(\sin x)' = \cos x$$

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \Big(\sin\left(x^2-1\right)\Big)' =$$

$$= \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \cos\left(x^2-1\right)$$

$$\left(\sqrt{\text{nešto}}\,\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

$$\big(\sin(\text{nešto})\big)' = \cos(\text{nešto}) \cdot (\text{nešto})'$$

Zadatak 14

$$(\sqrt{x}\,)' = \frac{1}{2\sqrt{x}}$$

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

$$(\sin x)' = \cos x$$

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \Big(\sin\left(x^2-1\right)\Big)' =$$

$$= \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \cos\left(x^2-1\right) \cdot$$

$$\left(\sqrt{\text{nešto}}\,\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

$$\Big(\sin(\text{nešto})\Big)' = \cos(\text{nešto}) \cdot (\text{nešto})'$$

Zadatak 14

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

$$\boxed{\left(\sqrt{x}\,\right)' = \frac{1}{2\sqrt{x}}}$$

$$\boxed{(\sin x)' = \cos x}$$

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2 - 1\right)}} \cdot \Big(\sin\left(x^2 - 1\right)\Big)' =$$

$$= \frac{1}{2\sqrt{\sin\left(x^2 - 1\right)}} \cdot \cos\left(x^2 - 1\right) \cdot \left(x^2 - 1\right)'$$

$$\boxed{\left(\sqrt{\text{nešto}}\,\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'}$$

$$\boxed{\big(\sin(\text{nešto})\big)' = \cos(\text{nešto}) \cdot (\text{nešto})'}$$

Zadatak 14

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

$$\boxed{\left(\sqrt{x}\,\right)' = \frac{1}{2\sqrt{x}}}$$

$$\boxed{(\sin x)' = \cos x}$$

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \Big(\sin\left(x^2-1\right)\Big)' =$$

$$= \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \cos\left(x^2-1\right) \cdot \left(x^2-1\right)' =$$

$$= \frac{\qquad}{\qquad}$$

$$\boxed{\left(\sqrt{\text{nešto}}\,\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'}$$

$$\boxed{\big(\sin(\text{nešto})\big)' = \cos(\text{nešto}) \cdot (\text{nešto})'}$$

$$(\sqrt{x})' = \frac{1}{2\sqrt{x}}$$

$$(\sin x)' = \cos x$$

Zadatak 14

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2-1\right)}$.

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \Big(\sin\left(x^2-1\right)\Big)' =$$

$$= \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \cos\left(x^2-1\right) \cdot \left(x^2-1\right)' =$$

$$= \frac{}{2\sqrt{\sin\left(x^2-1\right)}}$$

$$\left(\sqrt{\text{nešto}}\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

$$\Big(\sin(\text{nešto})\Big)' = \cos(\text{nešto}) \cdot (\text{nešto})'$$

Zadatak 14

$$\left(\sqrt{x}\,\right)' = \frac{1}{2\sqrt{x}}$$

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

$$(\sin x)' = \cos x$$

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \Big(\sin\left(x^2-1\right)\Big)' =$$

$$= \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \cos\left(x^2-1\right) \cdot \left(x^2-1\right)' =$$

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

$$\left(\sqrt{\text{nešto}}\,\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

$$\Big(\sin(\text{nešto})\Big)' = \cos(\text{nešto}) \cdot (\text{nešto})'$$

Zadatak 14

Odredite derivaciju funkcije $y = \sqrt{\sin\left(x^2 - 1\right)}$.

$$\boxed{\left(\sqrt{x}\,\right)' = \frac{1}{2\sqrt{x}}}$$

$$\boxed{(\sin x)' = \cos x}$$

Rješenje

$$y' = \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \Big(\sin\left(x^2-1\right)\Big)' =$$

$$= \frac{1}{2\sqrt{\sin\left(x^2-1\right)}} \cdot \cos\left(x^2-1\right) \cdot \left(x^2-1\right)' =$$

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

$$\boxed{\left(\sqrt{\text{nešto}}\,\right)' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'}$$

$$\boxed{\Big(\sin(\text{nešto})\Big)' = \cos(\text{nešto}) \cdot (\text{nešto})'}$$

petnaesti zadatak

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) =$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1}$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\left(\ln(\text{nešto})\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)'$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1}$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\Big(\ln(\text{nešto})\Big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

- Druga derivacija

$$f''(x) =$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\Big(\ln(\text{nešto})\Big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

- Druga derivacija

$$f''(x) = 3 \cdot$$

$$\boxed{\Big((\text{nešto})^n\Big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

- Druga derivacija

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2}$$

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

- Druga derivacija

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2} \cdot$$

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

- Druga derivacija

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2} \cdot (3x+1)'$$

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

- Druga derivacija

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2} \cdot (3x+1)' = -3 \cdot (3x+1)^{-2}$$

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\left(\ln(\text{nešto})\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

- Druga derivacija

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2} \cdot (3x+1)' = -3 \cdot (3x+1)^{-2} \cdot 3$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

Zadatak 15

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x+1)$.

Rješenje

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Prva derivacija

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

- Druga derivacija

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2} \cdot (3x+1)' = -3 \cdot (3x+1)^{-2} \cdot 3$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$f'''(x) =$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$f'''(x) = -9 \cdot$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3}$$

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot$$

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)'$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3}$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$

$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$

$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

- Četvrta derivacija

$$f^{(4)}(x) =$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$

$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

- Četvrta derivacija

$$f^{(4)}(x) = 54 \cdot$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$

$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

- Četvrta derivacija

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4}$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$

$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

- Četvrta derivacija

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4} \cdot$$

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

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- Četvrta derivacija

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4} \cdot (3x+1)'$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

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- Četvrta derivacija

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4} \cdot (3x+1)' = -162 \cdot (3x+1)^{-4}$$

$$\boxed{\big((\text{nešto})^n\big)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$

$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

- Četvrta derivacija

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$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$

$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

- Četvrta derivacija

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4} \cdot (3x+1)' = -162 \cdot (3x+1)^{-4} \cdot 3$$

$$f^{(4)}(x) = -486 \cdot (3x+1)^{-4}$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

$$\boxed{f''(x) = -9 \cdot (3x+1)^{-2}}$$

- Treća derivacija

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$

$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

- Četvrta derivacija

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4} \cdot (3x+1)' = -162 \cdot (3x+1)^{-4} \cdot 3$$

$$f^{(4)}(x) = -486 \cdot (3x+1)^{-4}$$

$$\boxed{f^{(n)}(x) = \left(f^{(n-1)}(x)\right)'}$$

$$\boxed{\left((\text{nešto})^n\right)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \quad \boxed{(x^n)' = nx^{n-1}}$$

šesnaesti zadatak

Zadatak 16

Odredite jednadžbu tangente na graf funkcije $y = \ln(5 - 4x)$ *u točki s apscisom* 1. *Odredite duljinu odsječka dobivene tangente između koordinatnih osi.*

Zadatak 16

Odredite jednadžbu tangente na graf funkcije $y = \ln(5 - 4x)$ *u točki s apscisom* 1. *Odredite duljinu odsječka dobivene tangente između koordinatnih osi.*

Rješenje

- Jednadžba tangente na graf funkcije $y = f(x)$ u točki $T_0(x_0, y_0)$

$$t \ldots \ y - y_0 = k_t \cdot (x - x_0)$$

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Rješenje

- Jednadžba tangente na graf funkcije $y = f(x)$ u točki $T_0(x_0, y_0)$

$$t \ldots\ y - y_0 = k_t \cdot (x - x_0)$$

- Pritom je $y_0 = f(x_0)$ i $k_t = f'(x_0)$.

- Znamo da je $x_0 = 1$.

$$\boxed{y = \ln(5 - 4x)}$$

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$$\boxed{y = \ln(5 - 4x)}$$

$$y_0 = \ln(5 - 4 \cdot 1)$$

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$\boxed{y = \ln(5 - 4x)}$

$$y_0 = \ln(5 - 4 \cdot 1) = \ln 1 = 0$$

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Točka: $T_0(1, 0)$

$$\boxed{y = \ln(5-4x)}$$

- Znamo da je $x_0 = 1$.

$$y_0 = \ln(5 - 4 \cdot 1) = \ln 1 = 0$$

Točka: $T_0(1, 0)$

- Derivacija funkcije

$$y' =$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Znamo da je $x_0 = 1$.

$$\boxed{y = \ln(5-4x)}$$

$$y_0 = \ln(5 - 4 \cdot 1) = \ln 1 = 0$$

Točka: $T_0(1, 0)$

- Derivacija funkcije

$$y' = \frac{1}{5-4x}$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

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$$\boxed{y = \ln(5-4x)}$$

$$y_0 = \ln(5 - 4 \cdot 1) = \ln 1 = 0$$

Točka: $T_0(1, 0)$

- Derivacija funkcije

$$y' = \frac{1}{5-4x} \cdot (5-4x)'$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Znamo da je $x_0 = 1$.

$$\boxed{y = \ln(5-4x)}$$

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Točka: $T_0(1, 0)$

- Derivacija funkcije

$$y' = \frac{1}{5-4x} \cdot (5-4x)' = \frac{1}{5-4x}$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Znamo da je $x_0 = 1$.

$$\boxed{y = \ln(5-4x)}$$

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Točka: $T_0(1, 0)$

- Derivacija funkcije

$$y' = \frac{1}{5-4x} \cdot (5-4x)' = \frac{1}{5-4x} \cdot (-4)$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Znamo da je $x_0 = 1$.

$$\boxed{y = \ln(5-4x)}$$

$$y_0 = \ln(5 - 4 \cdot 1) = \ln 1 = 0$$

Točka: $T_0(1, 0)$

- Derivacija funkcije

$$y' = \frac{1}{5-4x} \cdot (5-4x)' = \frac{1}{5-4x} \cdot (-4) = \frac{-4}{5-4x}$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Znamo da je $x_0 = 1$.

$$\boxed{y = \ln(5-4x)}$$

$$y_0 = \ln(5 - 4\cdot 1) = \ln 1 = 0$$

Točka: $T_0(1, 0)$

- Derivacija funkcije

$$y' = \frac{1}{5-4x}\cdot(5-4x)' = \frac{1}{5-4x}\cdot(-4) = \frac{-4}{5-4x}$$

- Koeficijent smjera tangente

$$k_t = y'(1)$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}}\cdot(\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

- Znamo da je $x_0 = 1$.

$$\boxed{y = \ln(5-4x)}$$

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Točka: $T_0(1, 0)$

- Derivacija funkcije

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- Koeficijent smjera tangente

$$k_t = y'(1) = \frac{-4}{5 - 4 \cdot 1}$$

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- Znamo da je $x_0 = 1$.

$\boxed{y = \ln(5-4x)}$

$$y_0 = \ln(5 - 4 \cdot 1) = \ln 1 = 0$$

Točka: $T_0(1, 0)$

- Derivacija funkcije

$$y' = \frac{1}{5-4x} \cdot (5-4x)' = \frac{1}{5-4x} \cdot (-4) = \frac{-4}{5-4x}$$

- Koeficijent smjera tangente

$$k_t = y'(1) = \frac{-4}{5 - 4 \cdot 1} = -4$$

$$\boxed{\big(\ln(\text{nešto})\big)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'} \quad \boxed{(\ln x)' = \frac{1}{x}}$$

$$\boxed{x_0 = 1} \qquad \boxed{y_0 = 0} \qquad \boxed{k_t = -4}$$

- Jednadžba tangente

$$y - y_0 = k_t \cdot (x - x_0)$$

$\boxed{x_0 = 1}$ $\boxed{y_0 = 0}$ $\boxed{k_t = -4}$

- Jednadžba tangente

$$y - y_0 = k_t \cdot (x - x_0)$$
$$y - 0 = -4 \cdot (x - 1)$$

$$\boxed{x_0 = 1} \qquad \boxed{y_0 = 0} \qquad \boxed{k_t = -4}$$

- Jednadžba tangente

$$y - y_0 = k_t \cdot (x - x_0)$$

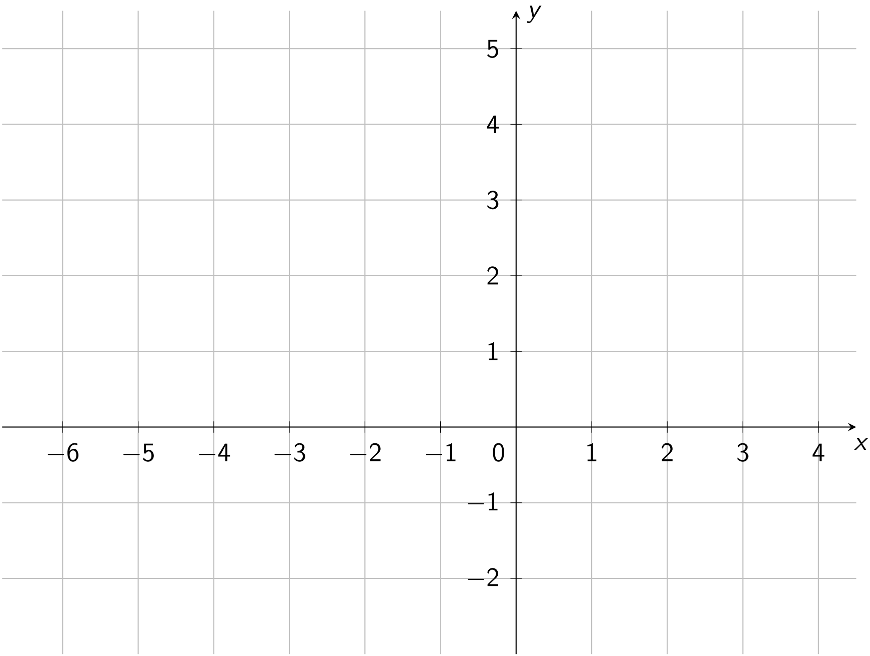
$$y - 0 = -4 \cdot (x - 1)$$

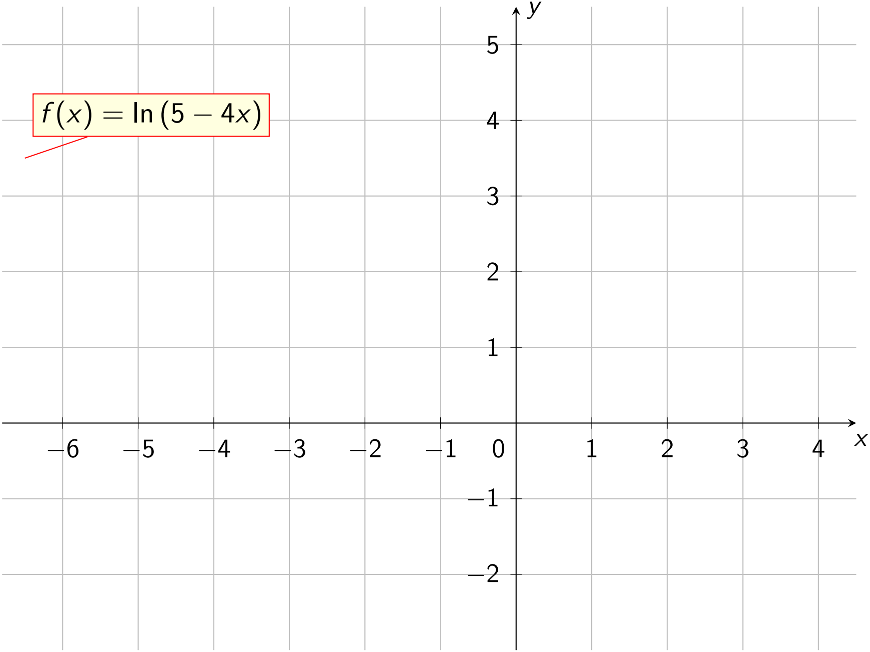
$$y = -4x + 4$$

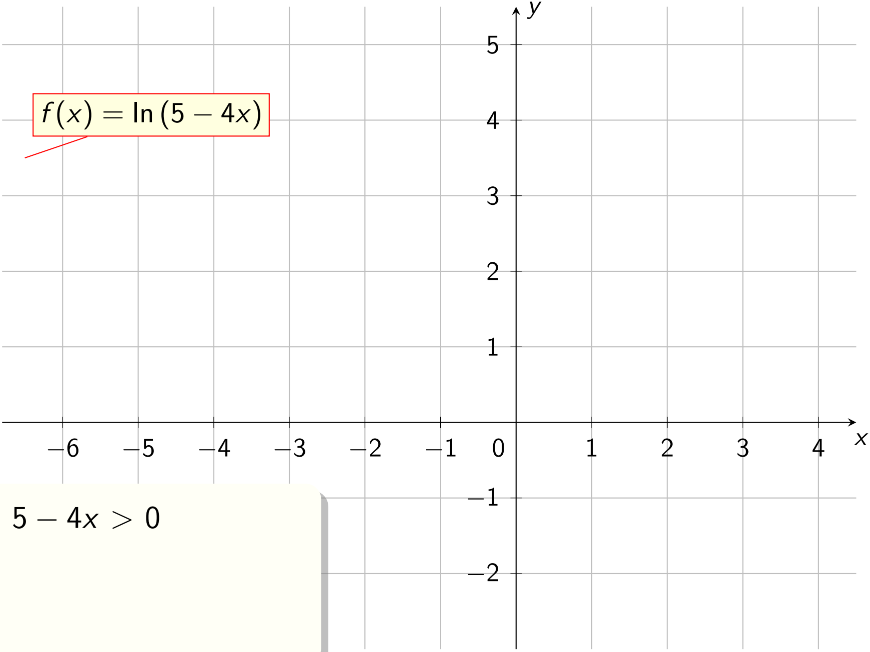
$\boxed{x_0 = 1}$ $\boxed{y_0 = 0}$ $\boxed{k_t = -4}$

- Jednadžba tangente

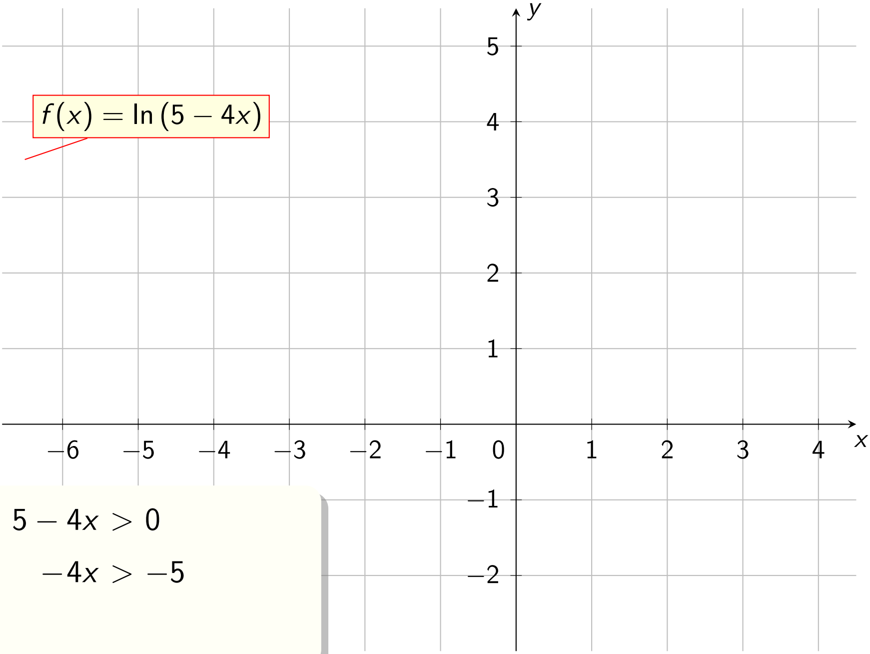
$$y - y_0 = k_t \cdot (x - x_0)$$
$$y - 0 = -4 \cdot (x - 1)$$
$$\boxed{y = -4x + 4}$$


y
5
4
3
2
1
−6
−5
−4
−3
−2
−1
0
1
2
3
4
x
−1
−2


$f(x) = \ln(5 - 4x)$
y
x
5
4
3
2
1
0
−1
−2
−6
−5
−4
−3
−2
−1
1
2
3
4

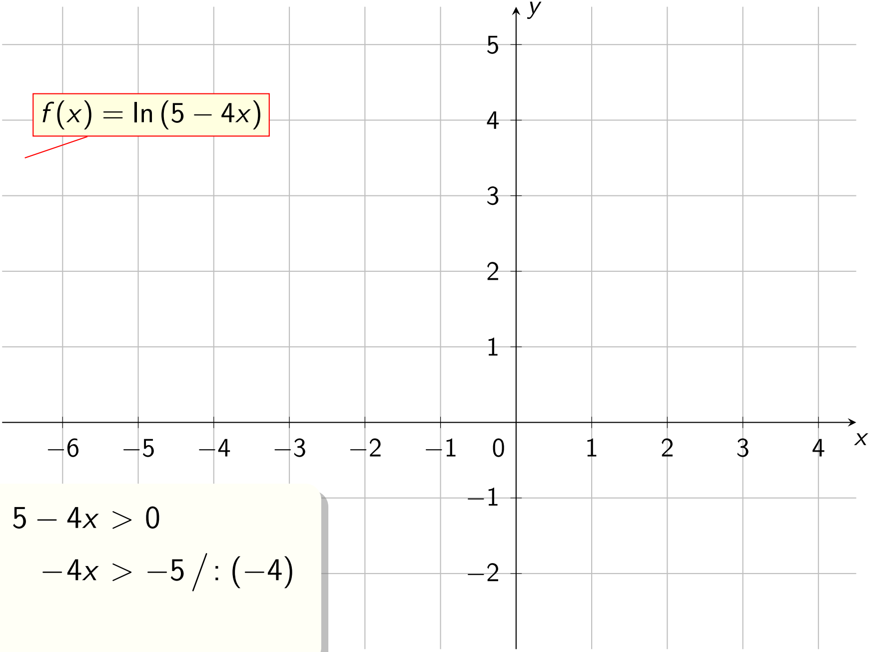


$5 - 4x > 0$



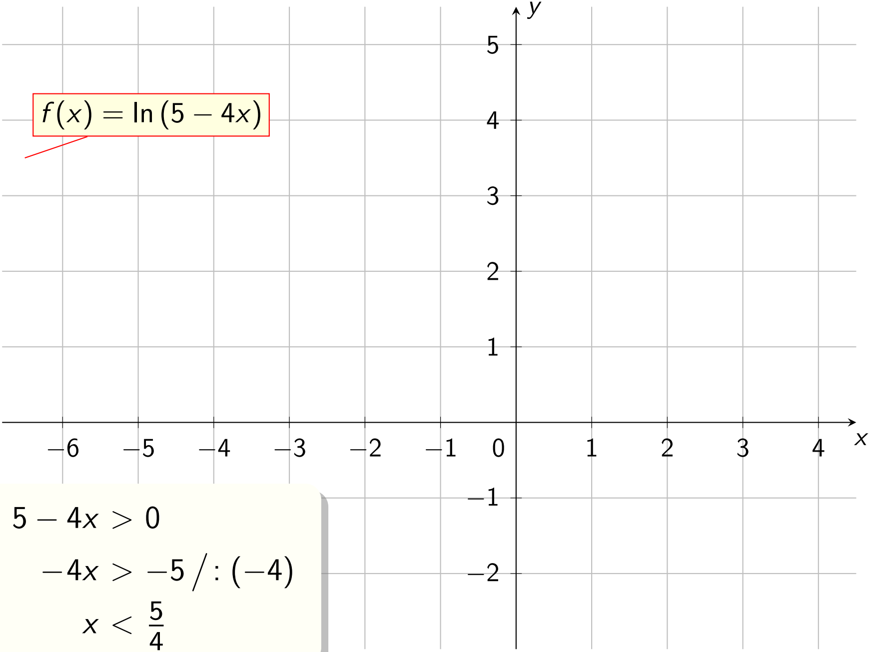
$$5 - 4x > 0$$

$$-4x > -5$$



$$5 - 4x > 0$$

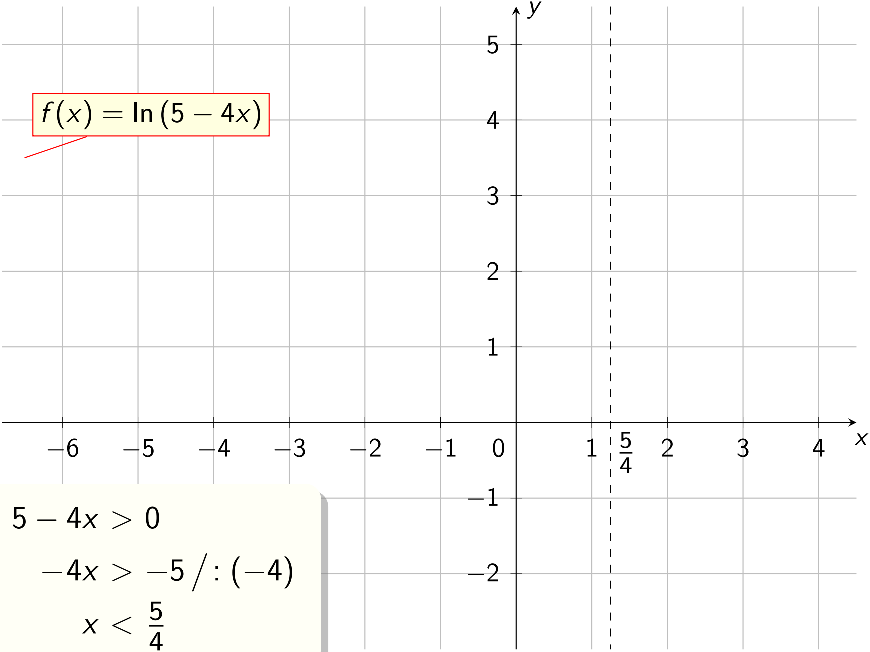
$$-4x > -5 \,/ : (-4)$$



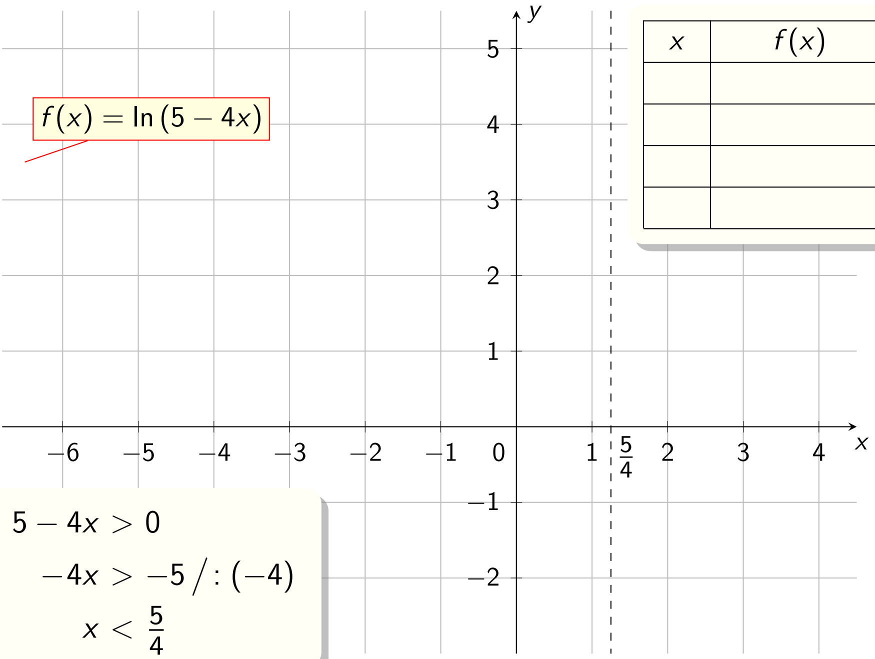
$$5 - 4x > 0$$

$$-4x > -5 \;/ : (-4)$$

$$x < \frac{5}{4}$$



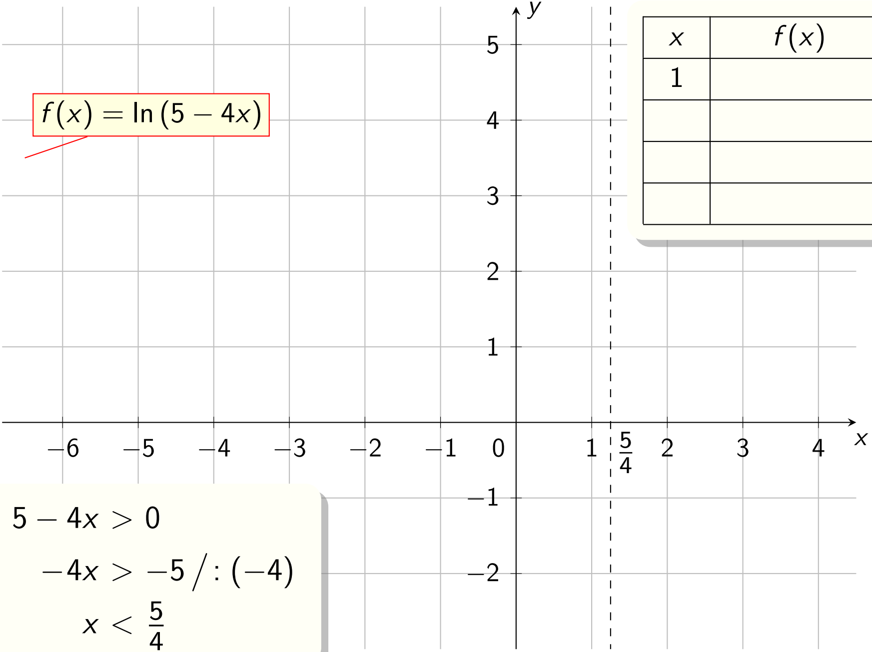
$$
\begin{aligned}
5 - 4x &> 0 \\
-4x &> -5 \;/ : (-4) \\
x &< \frac{5}{4}
\end{aligned}
$$



x	$f(x)$

$$5-4x > 0$$
$$-4x > -5 \,\big/ : (-4)$$
$$x < \frac{5}{4}$$

$f(x) = \ln(5 - 4x)$

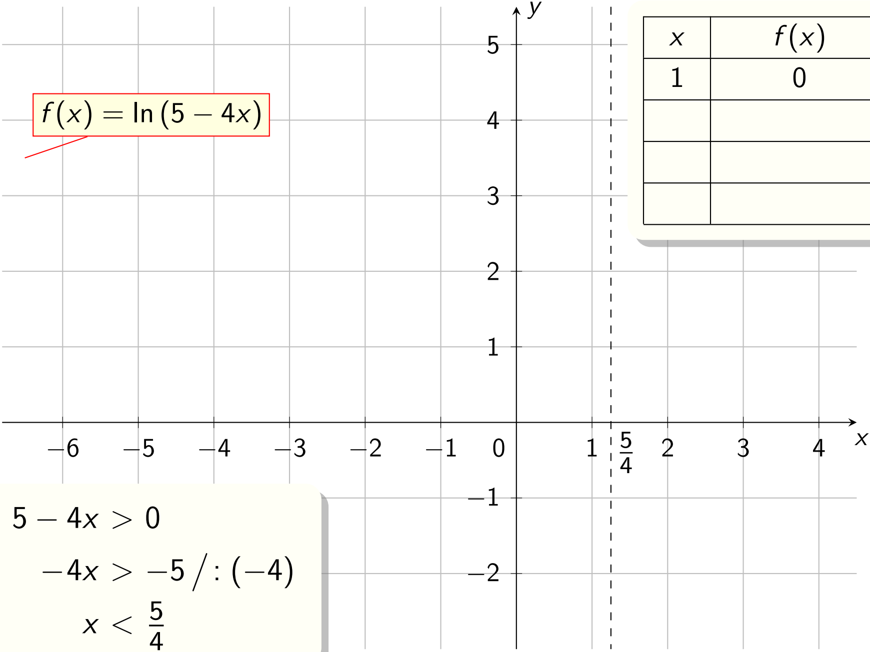


x	$f(x)$
1	

$$5 - 4x > 0$$

$$-4x > -5 \;/ : (-4)$$

$$x < \frac{5}{4}$$

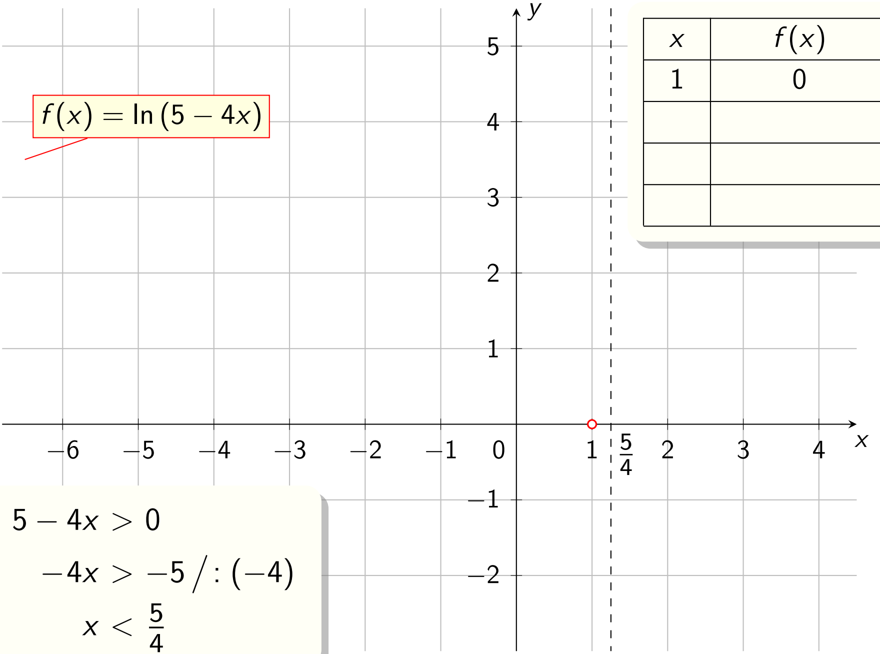


x	$f(x)$
1	0

$$5 - 4x > 0$$

$$-4x > -5 \; / : (-4)$$

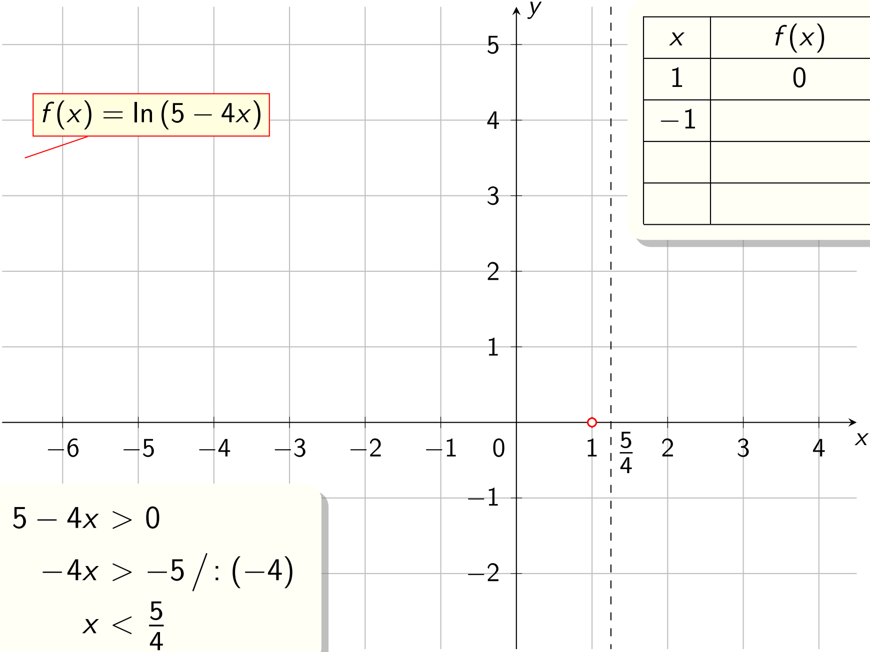
$$x < \frac{5}{4}$$



x	$f(x)$
1	0

$$5 - 4x > 0$$
$$-4x > -5 \,/ : (-4)$$
$$x < \frac{5}{4}$$

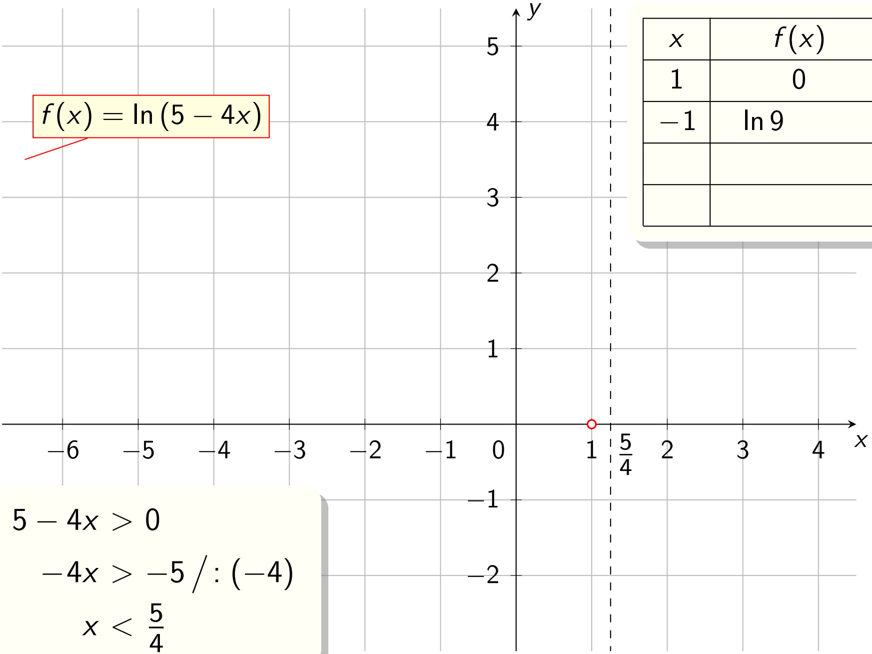
$f(x) = \ln(5 - 4x)$



x	$f(x)$
1	0
-1	

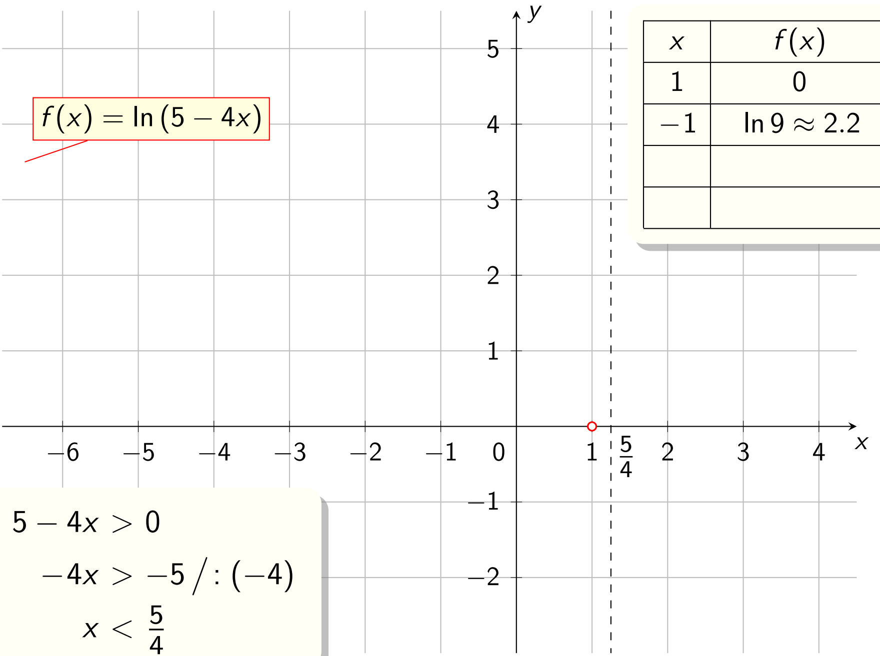
$$5 - 4x > 0$$
$$-4x > -5 \;/ : (-4)$$
$$x < \frac{5}{4}$$

$f(x) = \ln(5 - 4x)$



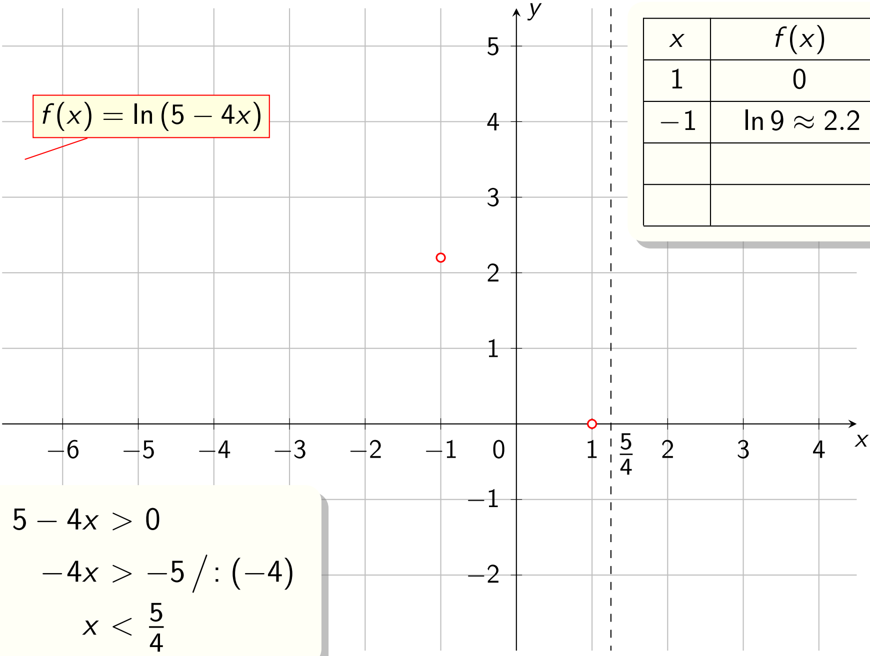
x	$f(x)$
1	0
-1	$\ln 9$

$$5 - 4x > 0$$
$$-4x > -5 \;/ : (-4)$$
$$x < \frac{5}{4}$$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$

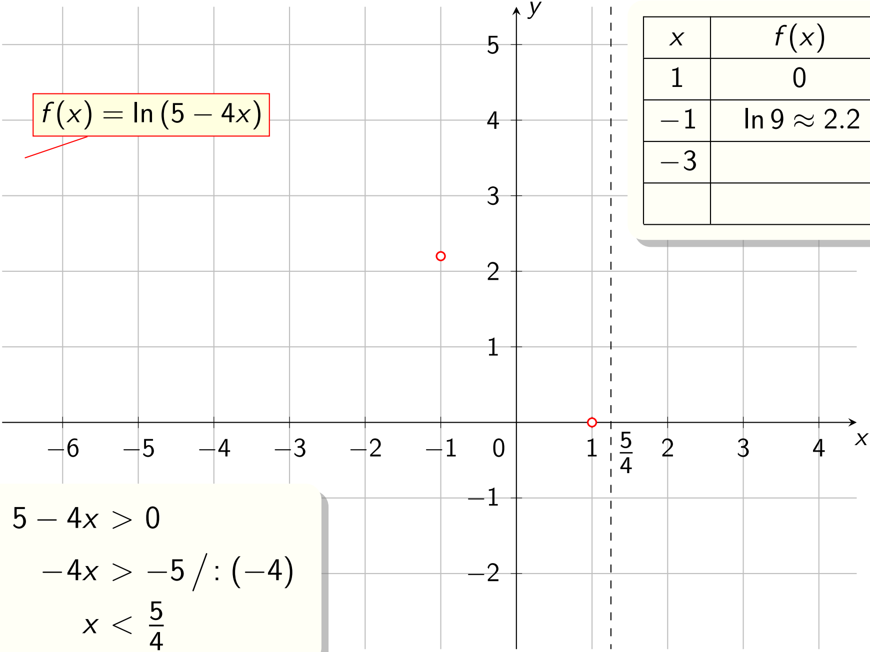
$$
\begin{aligned}
5 - 4x &> 0 \\
-4x &> -5 \;/ : (-4) \\
x &< \frac{5}{4}
\end{aligned}
$$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$

$$\begin{aligned} 5-4x &> 0 \\ -4x &> -5 \;/ : (-4) \\ x &< \frac{5}{4} \end{aligned}$$

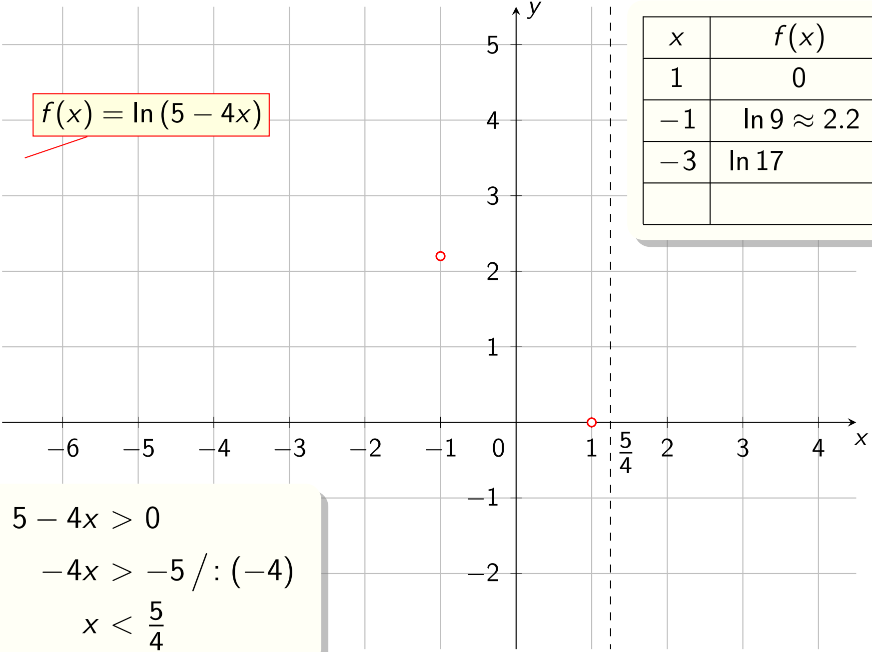
$f(x) = \ln(5 - 4x)$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	

$$5 - 4x > 0$$
$$-4x > -5 \,/ : (-4)$$
$$x < \frac{5}{4}$$

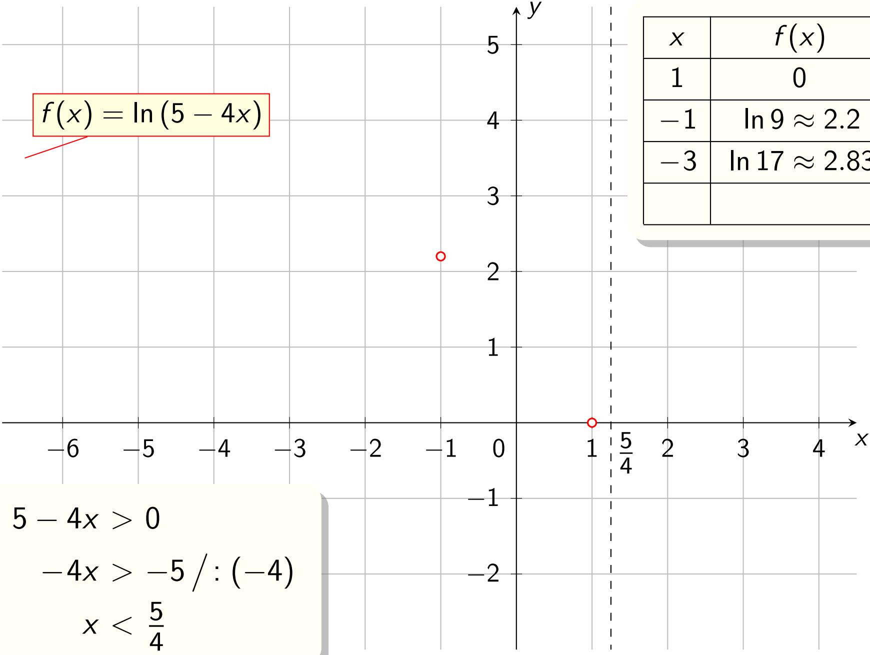
$f(x) = \ln(5 - 4x)$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17$

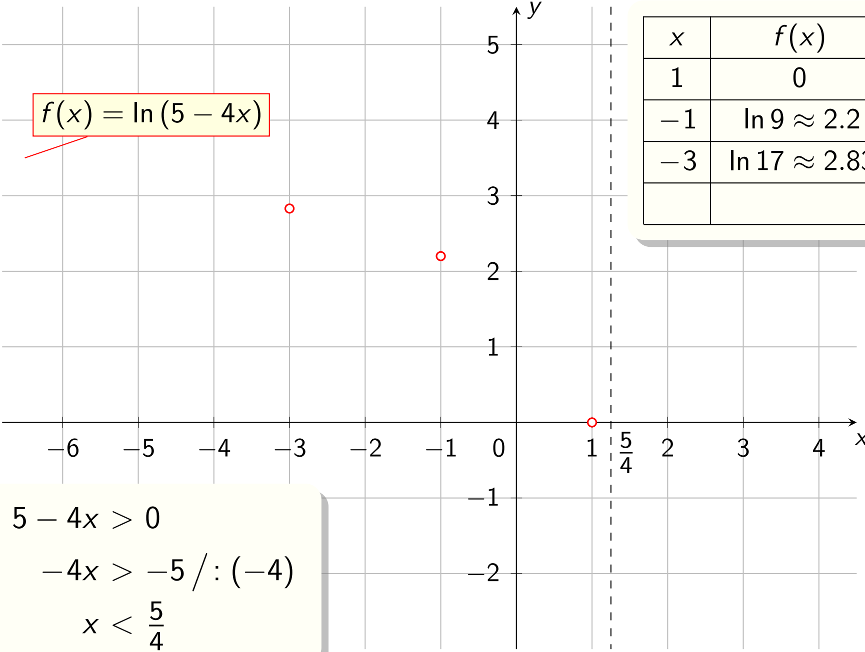
$$5 - 4x > 0$$
$$-4x > -5 \;/ : (-4)$$
$$x < \frac{5}{4}$$

$f(x) = \ln(5 - 4x)$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$

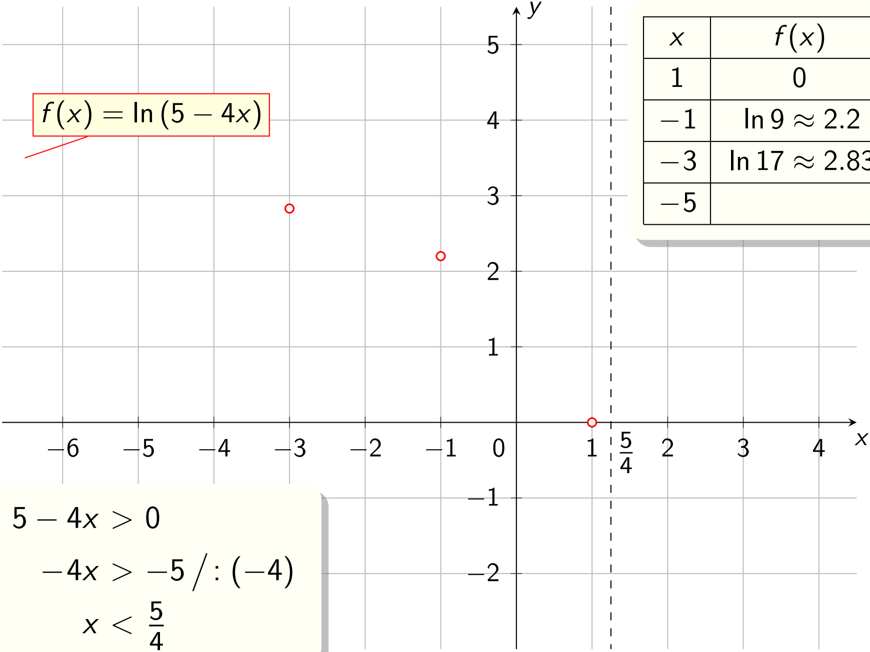
$$5 - 4x > 0$$
$$-4x > -5 \;/ : (-4)$$
$$x < \frac{5}{4}$$



$f(x) = \ln(5-4x)$

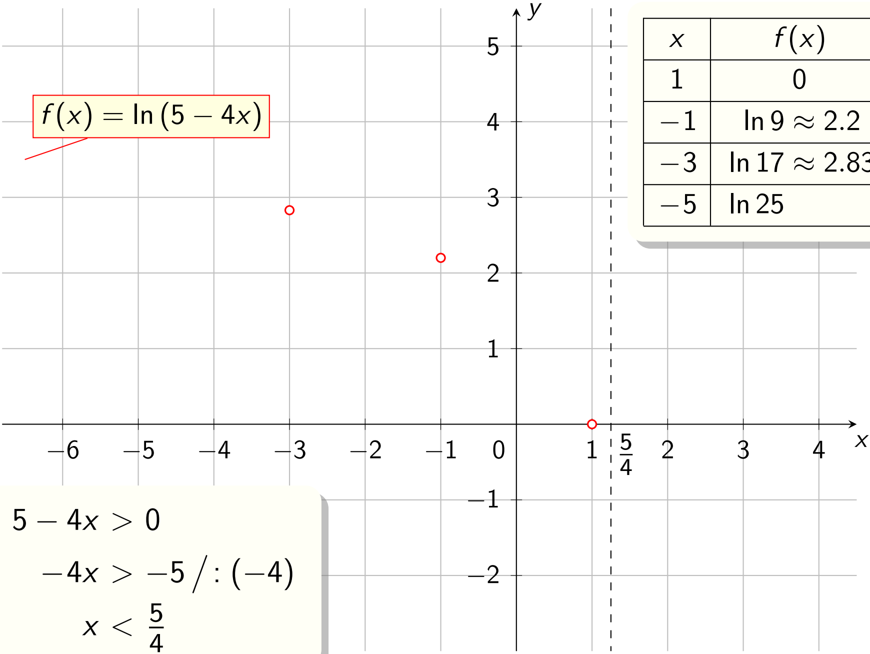
x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$

$$
\begin{aligned}
5-4x &> 0 \\
-4x &> -5 \,/ : (-4) \\
x &< \frac{5}{4}
\end{aligned}
$$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	

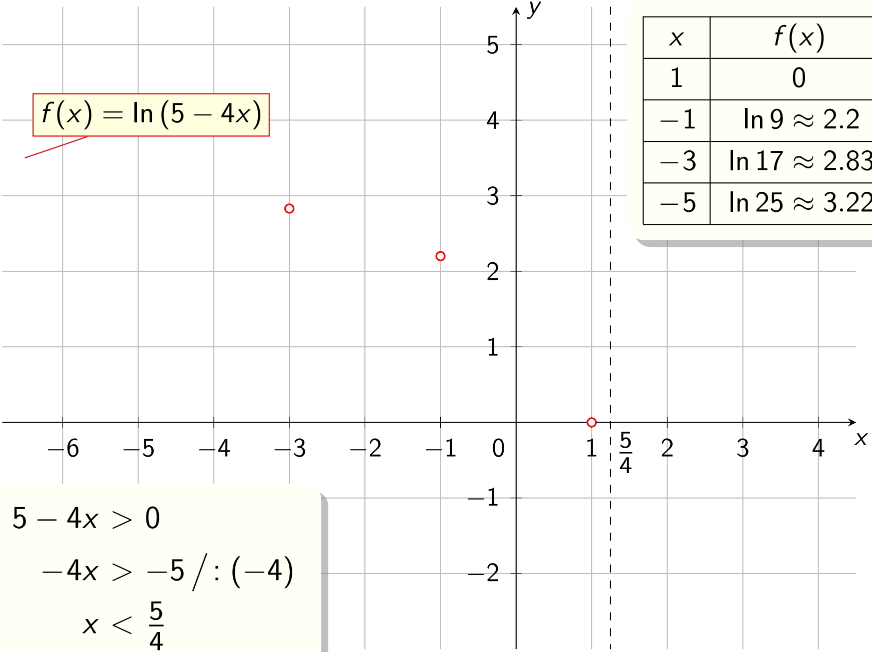
$$5 - 4x > 0$$
$$-4x > -5 \,/ : (-4)$$
$$x < \frac{5}{4}$$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25$

$$5 - 4x > 0$$
$$-4x > -5 \,/ : (-4)$$
$$x < \frac{5}{4}$$

$f(x) = \ln(5 - 4x)$

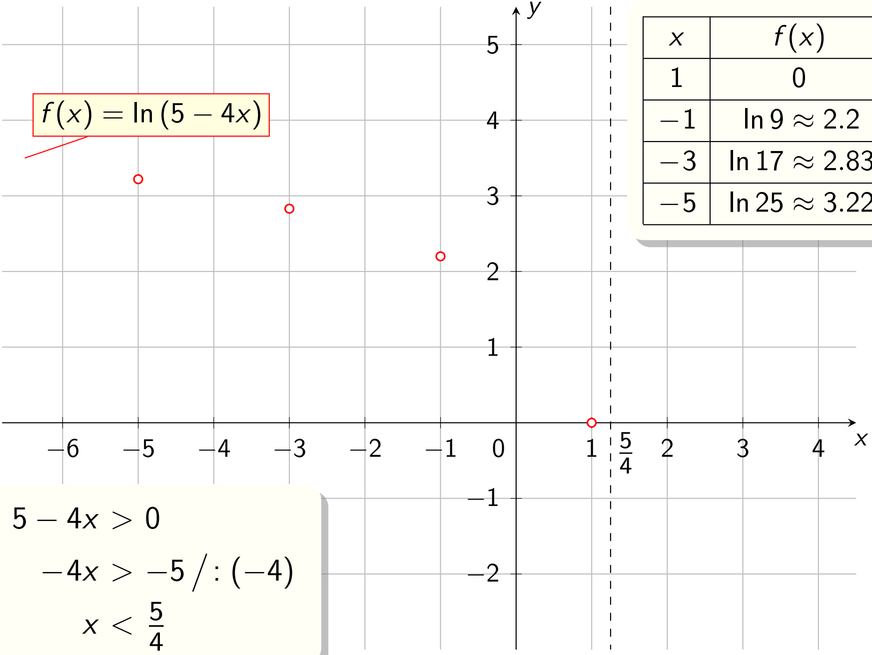


x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

$$5 - 4x > 0$$

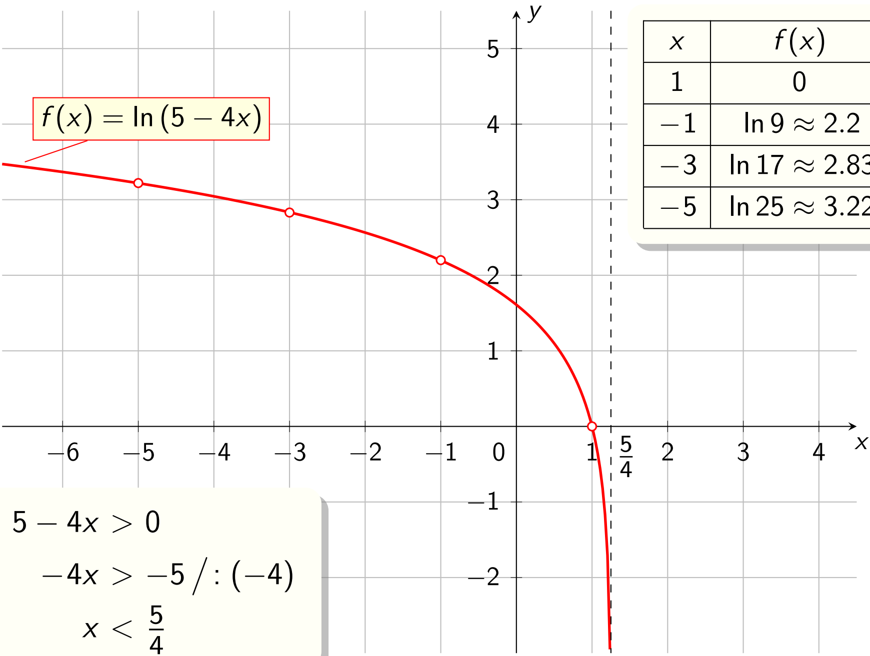
$$-4x > -5 \,/ : (-4)$$

$$x < \frac{5}{4}$$



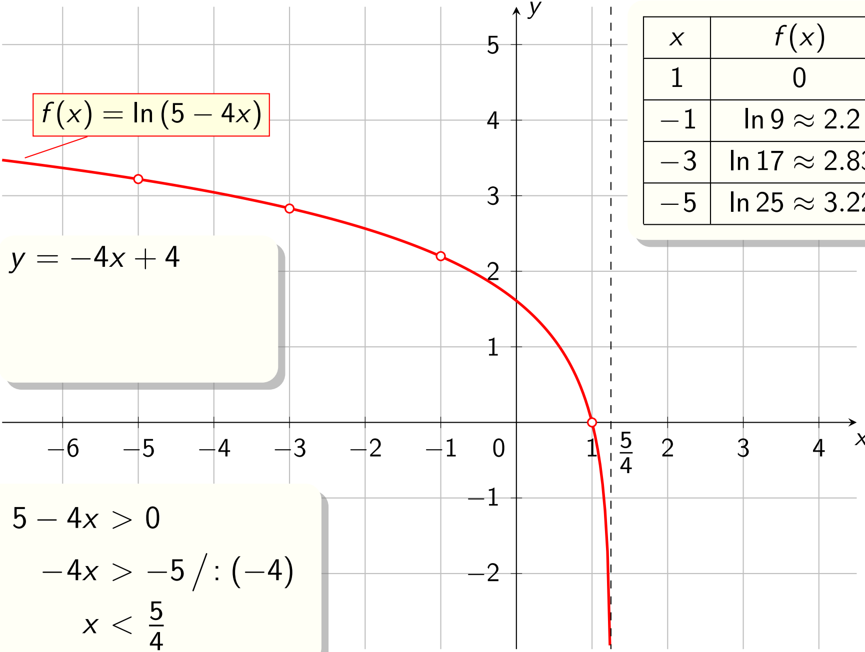
x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

$$5 - 4x > 0$$
$$-4x > -5 \;/ : (-4)$$
$$x < \frac{5}{4}$$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

$$5 - 4x > 0$$
$$-4x > -5 \;/ : (-4)$$
$$x < \frac{5}{4}$$

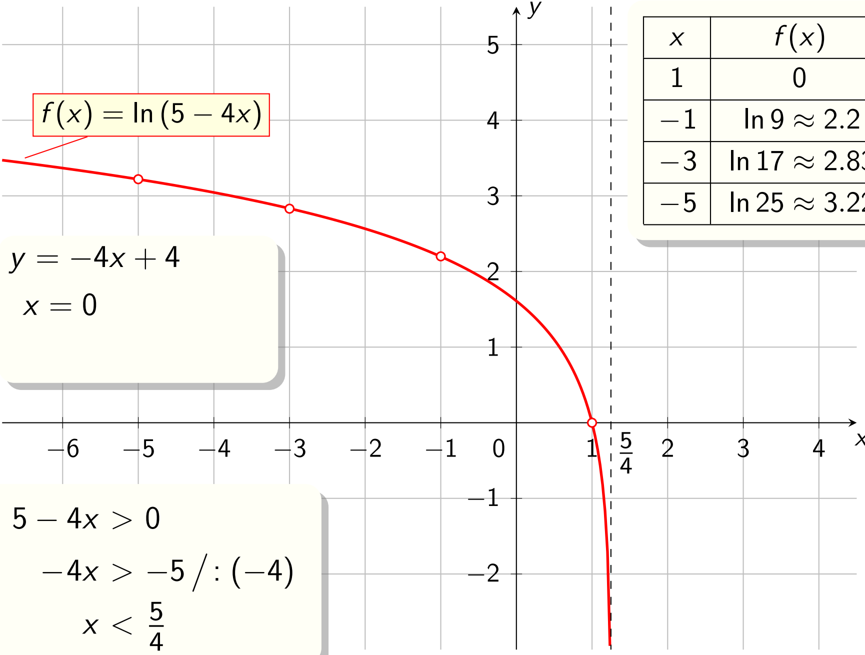


$f(x) = \ln(5-4x)$

x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

$y = -4x + 4$

$$5 - 4x > 0$$
$$-4x > -5 \, / : (-4)$$
$$x < \frac{5}{4}$$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

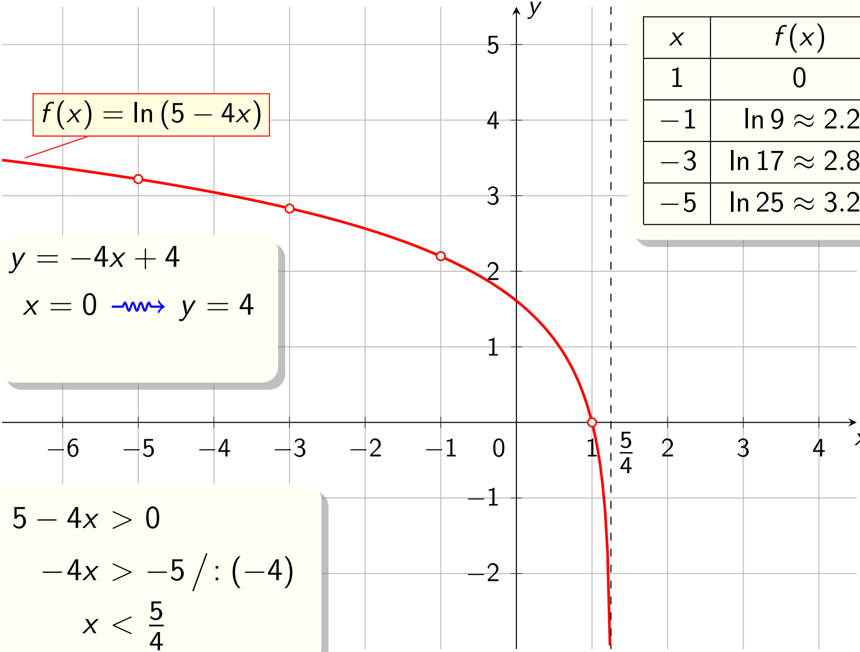
$$y = -4x + 4$$

$$x = 0$$

$$5 - 4x > 0$$

$$-4x > -5 \,/ : (-4)$$

$$x < \frac{5}{4}$$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

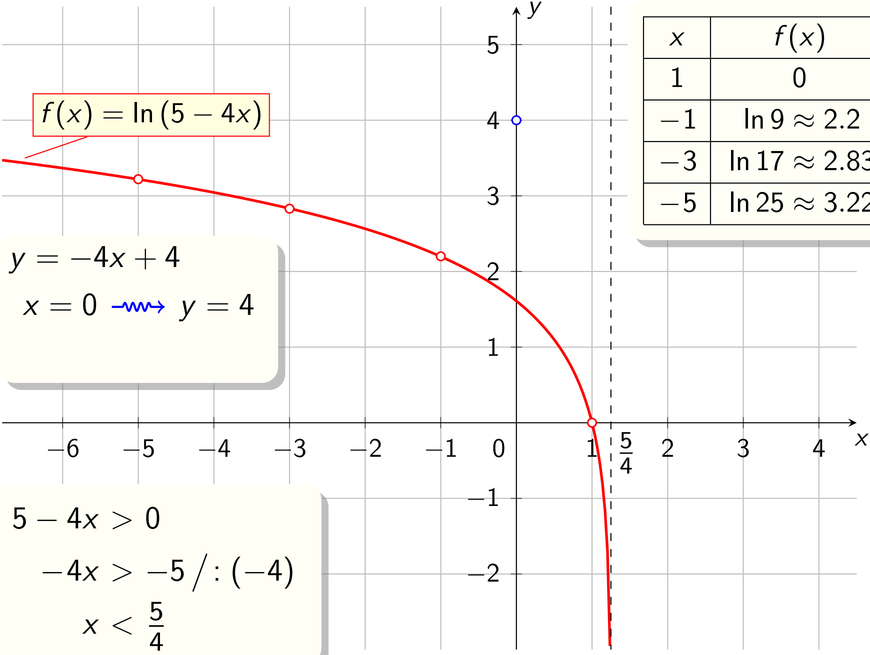
$y = -4x + 4$

$x = 0 \rightsquigarrow y = 4$

$$5 - 4x > 0$$

$$-4x > -5 \,/ : (-4)$$

$$x < \frac{5}{4}$$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
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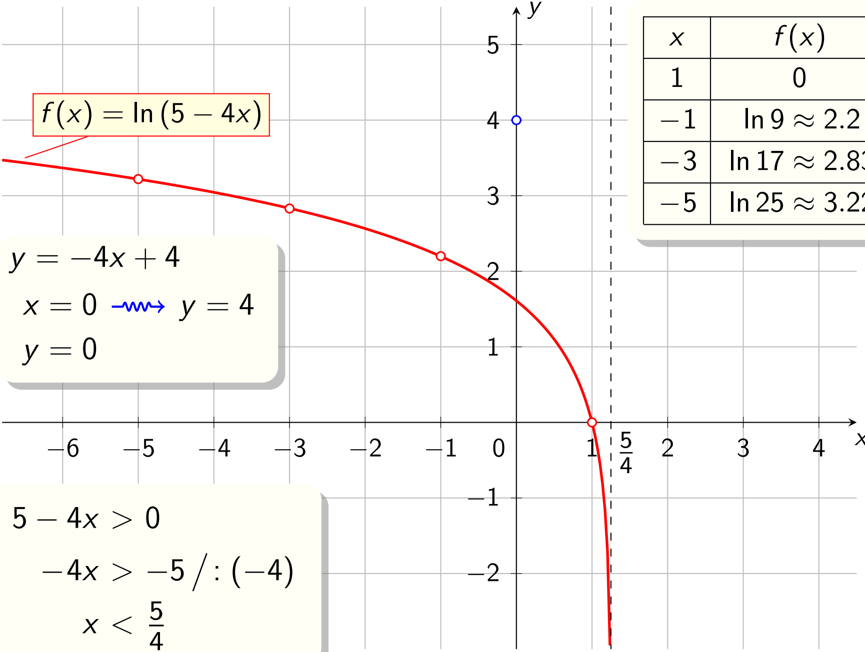

x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
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$y = -4x + 4$

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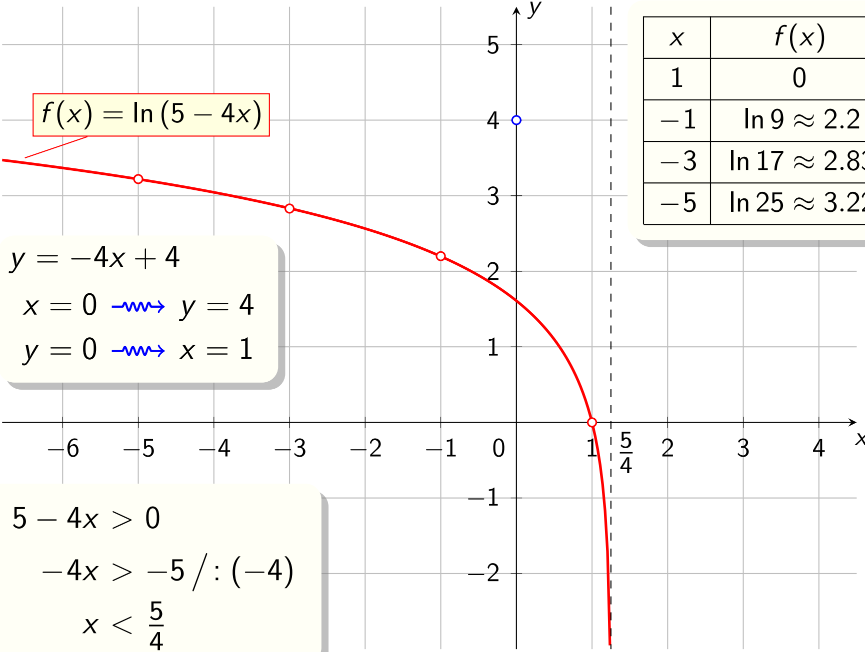

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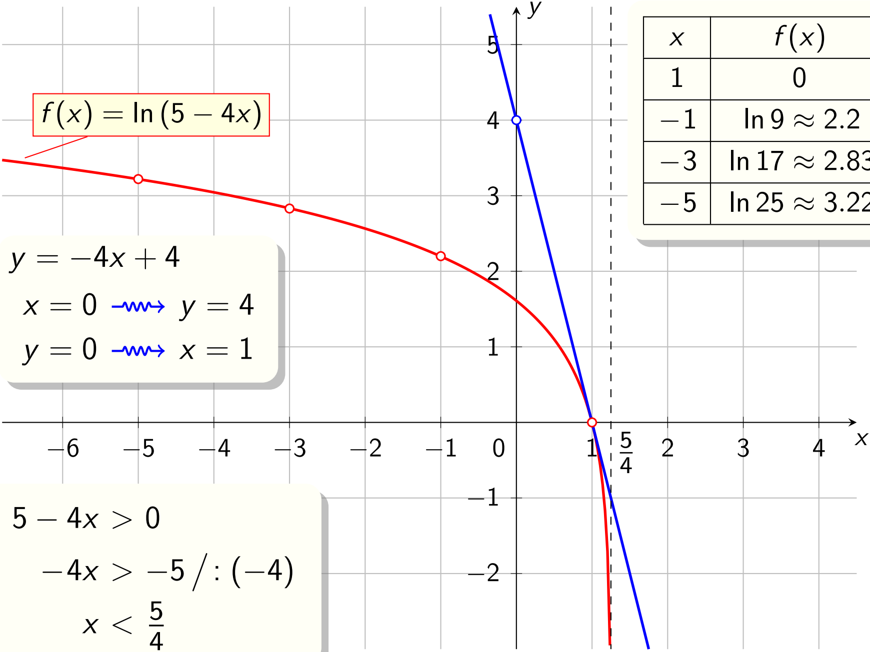

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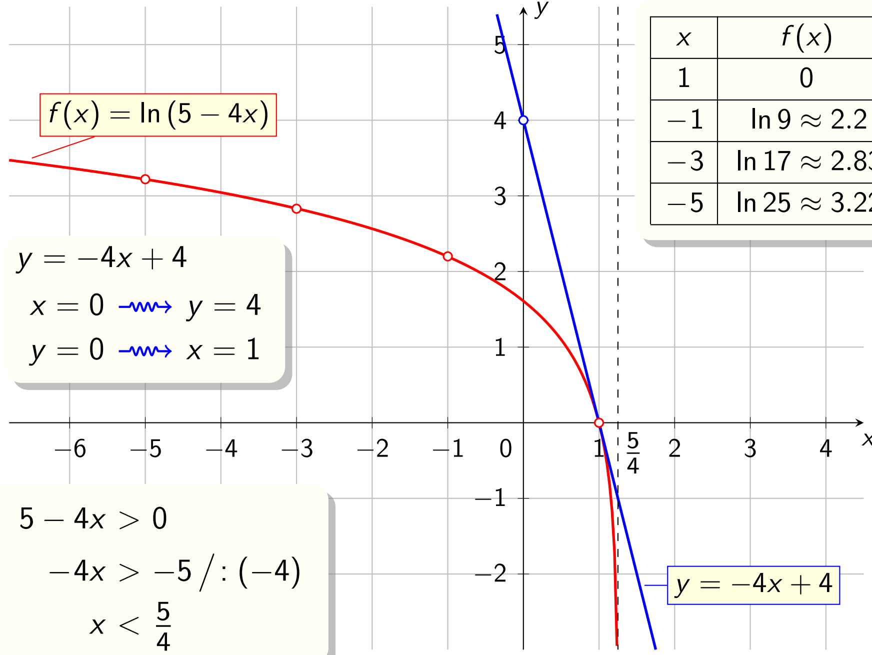

x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

$y = -4x + 4$

$x = 0 \rightsquigarrow y = 4$

$y = 0 \rightsquigarrow x = 1$

$5 - 4x > 0$

$-4x > -5 \,/ : (-4)$

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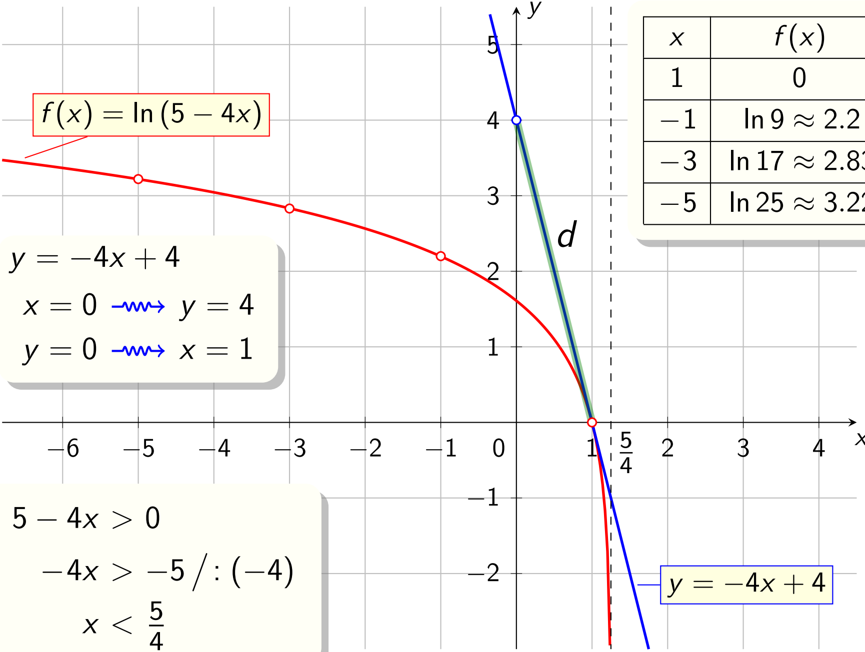


x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

$$y = -4x + 4$$

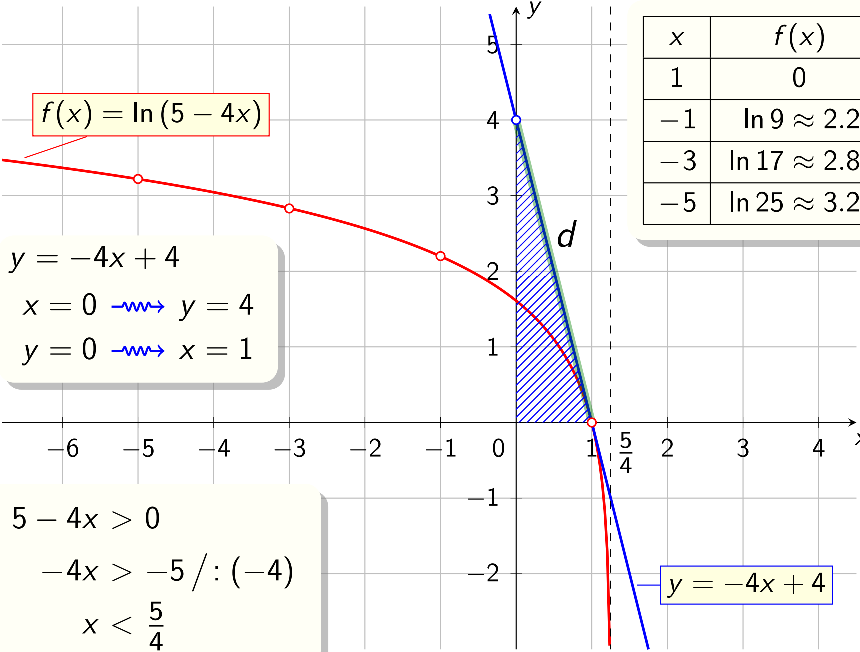
$$x = 0 \rightsquigarrow y = 4$$

$$y = 0 \rightsquigarrow x = 1$$

$$5 - 4x > 0$$

$$-4x > -5 \, / : (-4)$$

$$x < \frac{5}{4}$$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

$y = -4x + 4$

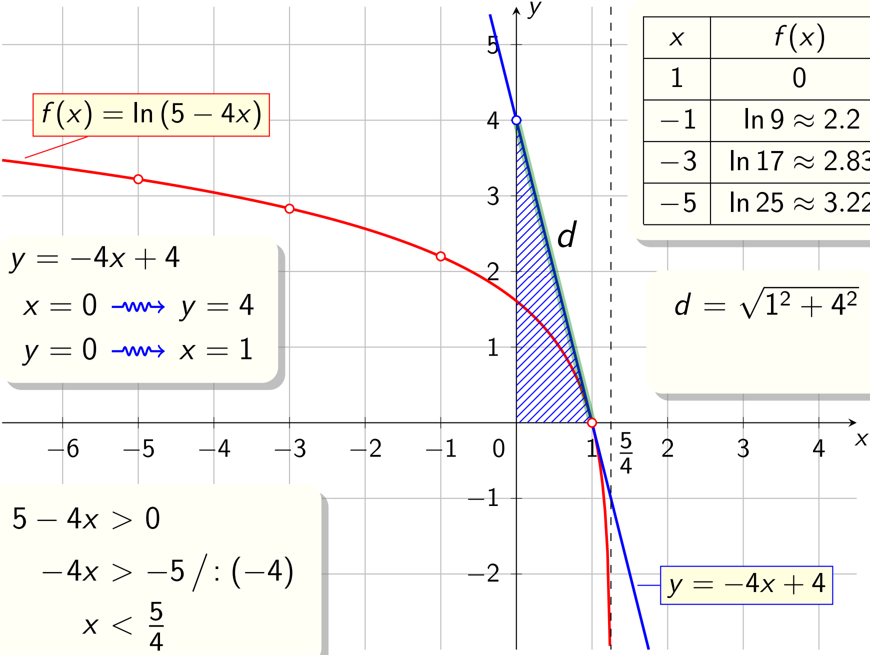
$x = 0 \rightsquigarrow y = 4$

$y = 0 \rightsquigarrow x = 1$

$5 - 4x > 0$

$-4x > -5 \,/ : (-4)$

$x < \frac{5}{4}$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

$$y = -4x + 4$$

$$x = 0 \rightsquigarrow y = 4$$

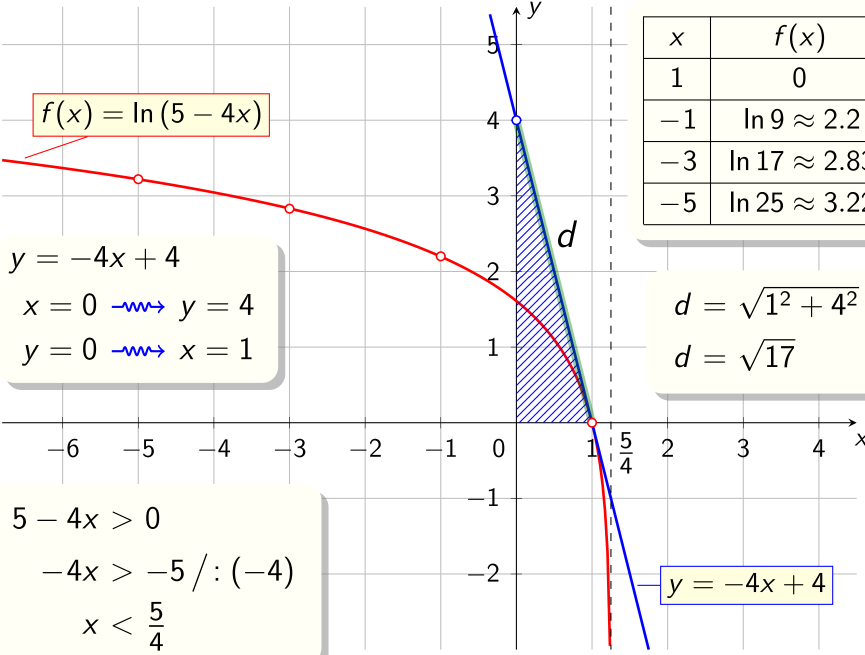
$$y = 0 \rightsquigarrow x = 1$$

$$d = \sqrt{1^2 + 4^2}$$

$$5 - 4x > 0$$

$$-4x > -5 \,/ : (-4)$$

$$x < \frac{5}{4}$$



x	$f(x)$
1	0
-1	$\ln 9 \approx 2.2$
-3	$\ln 17 \approx 2.83$
-5	$\ln 25 \approx 3.22$

$$y = -4x + 4$$

$$x = 0 \rightsquigarrow y = 4$$

$$y = 0 \rightsquigarrow x = 1$$

$$d = \sqrt{1^2 + 4^2}$$

$$d = \sqrt{17}$$

$$5 - 4x > 0$$

$$-4x > -5 \,/ : (-4)$$

$$x < \frac{5}{4}$$