Derivacija funkcije - 2. dio

Matematika 2

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Sadržaj

prvi zadatak

drugi zadatak

treći zadatak

četvrti zadatak

peti zadatak

šesti zadatak

sedmi zadatak

osmi zadatak

prvi zadatak

Zadatak 1

Odredite jednadžbu normale na graf funkcije $y = \sqrt{8x^2 + 4}$ u točki T na grafu s apscisom 2. Odredite površinu trokuta kojeg normala u točki T zatvara s koordinatnim osima.

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Rješenje

ullet Jednadžba normale na graf funkcije y=f(x) u točki $T(x_0,y_0)$

$$n\ldots y-y_0=k_n\cdot (x-x_0)$$

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ullet Jednadžba normale na graf funkcije y=f(x) u točki $T(x_0,y_0)$

$$n\ldots y-y_0=k_n\cdot (x-x_0)$$

• Pritom je $y_0 = f(x_0)$, $k_n = -\frac{1}{k_t}$, $k_t = f'(x_0)$.

$$y=\sqrt{8x^2+4}$$

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$$y_0 = \sqrt{8 \cdot 2^2 + 4}$$

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$$y_0 = \sqrt{8 \cdot 2^2 + 4} = \sqrt{36} = 6$$

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Točka: T(2,6)

$$y = \sqrt{8x^2 + 4}$$

 $v_0 = \sqrt{8 \cdot 2^2 + 4} = \sqrt{36} = 6$

Derivacija funkcije

$$\left(\sqrt{\mathsf{ne iny sto}}\,\right)' = rac{1}{2\sqrt{\mathsf{ne iny sto}}} \cdot (\mathsf{ne iny sto})'$$
 $\left(\sqrt{x}\,\right)' = rac{1}{2\sqrt{x}}$

$$y = \sqrt{8x^2 + 4}$$

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Točka: T(2,6)

• Derivacija funkcije

$$y' = \frac{1}{2\sqrt{8x^2 + 4}}$$

$$\left(\sqrt{\mathsf{ne ilde{s}to}}\,
ight)' = rac{1}{2\sqrt{\mathsf{ne ilde{s}to}}} \cdot \left(\mathsf{ne ilde{s}to}
ight)' \qquad \left(\sqrt{x}\,
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$$y_0 = \sqrt{8 \cdot 2^2 + 4} = \sqrt{36} = 6$$

 $y = \sqrt{8x^2 + 4}$

Točka:
$$T(2,6)$$

Derivacija funkcije

$$y' = \frac{1}{2\sqrt{8x^2+4}} \cdot (8x^2+4)'$$

$$\left(\sqrt{\mathsf{ne imesto}}\,\right)' = rac{1}{2\sqrt{\mathsf{ne imesto}}} \cdot \left(\mathsf{ne imesto}
ight)' \qquad \left(\sqrt{x}\,\right)' = rac{1}{2\sqrt{x}}$$

/ 20

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 $y = \sqrt{8x^2 + 4}$

Točka:
$$T(2,6)$$

• Derivacija funkcije

$$y' = \frac{1}{2\sqrt{8x^2 + 4}} \cdot \left(8x^2 + 4\right)' = \frac{1}{2\sqrt{8x^2 + 4}}$$

$$\left(\sqrt{\mathsf{ne ilde{s}to}}\,\right)' = rac{1}{2\sqrt{\mathsf{ne ilde{s}to}}} \cdot (\mathsf{ne ilde{s}to})'$$
 $\left(\sqrt{x}\,\right)' = rac{1}{2\sqrt{x}}$

$$y = \sqrt{8x^2 + 4}$$

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Točka: T(2,6)

Derivacija funkcije

$$y' = \frac{1}{2\sqrt{8x^2 + 4}} \cdot (8x^2 + 4)' = \frac{1}{2\sqrt{8x^2 + 4}} \cdot 16x$$

$$\left(\sqrt{\mathsf{ne ilde{s}to}}\,
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Točka: T(2,6)

Derivacija funkcije

$$y' = \frac{1}{2\sqrt{8x^2 + 4}} \cdot (8x^2 + 4)' = \frac{1}{2\sqrt{8x^2 + 4}} \cdot 16x = \frac{8x}{\sqrt{8x^2 + 4}}$$

$$\left(\sqrt{\mathsf{ne iny sto}}\,\right)' = rac{1}{2\sqrt{\mathsf{ne iny sto}}} \cdot (\mathsf{ne iny sto})' \qquad (\sqrt{x}\,)' = rac{1}{2\sqrt{x}}$$

$$y = \sqrt{8x^2 + 4}$$

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Točka: T(2,6)

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Koeficijent smjera tangente

$$k_t = v'(2)$$

$$\kappa_t = y (z)$$

$$\left(\sqrt{\mathsf{ne ilde{s}to}}\,\right)' = rac{1}{2\sqrt{\mathsf{ne ilde{s}to}}} \cdot (\mathsf{ne ilde{s}to})'$$
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 $y = \sqrt{8x^2 + 4}$

Točka:
$$T(2,6)$$

Derivacija funkcije

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 $v_0 = \sqrt{8 \cdot 2^2 + 4} = \sqrt{36} = 6$

Koeficijent smjera tangente

$$k_t = y'(2) = \frac{8 \cdot 2}{\sqrt{8 \cdot 2^2 + 4}}$$

$$(\sqrt{\text{nešto}})' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

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

$$y = \sqrt{8x^2 + 4}$$

Točka:
$$T(2,6)$$

Derivacija funkcije

$$y' = \frac{1}{2\sqrt{8x^2 + 4}} \cdot (8x^2 + 4)' = \frac{1}{2\sqrt{8x^2 + 4}} \cdot 16x = \frac{8x}{\sqrt{8x^2 + 4}}$$

 $v_0 = \sqrt{8 \cdot 2^2 + 4} = \sqrt{36} = 6$

Koeficijent smjera tangente

$$k_t = y'(2) = \frac{8 \cdot 2}{\sqrt{8 \cdot 2^2 + 4}} = \frac{16}{6}$$

$$(\sqrt{\text{nešto}})' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

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

$$y_0 = \sqrt{8 \cdot 2^2 + 4} = \sqrt{36} = 6$$

 $v = \sqrt{8x^2 + 4}$

Točka: T(2,6)

• Derivacija funkcije
$$y' = \frac{1}{2\sqrt{8x^2 + 4}} \cdot \left(8x^2 + 4\right)' = \frac{1}{2\sqrt{8x^2 + 4}} \cdot 16x = \frac{8x}{\sqrt{8x^2 + 4}}$$

$$k_t = y'(2) = \frac{8 \cdot 2}{\sqrt{8 \cdot 2^2 + 4}} = \frac{16}{6} = \frac{8}{3}$$

$$(\sqrt{\text{nešto}})' = \frac{1}{2\sqrt{\text{nešto}}} \cdot (\text{nešto})'$$

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

$$\frac{1}{2\sqrt{x}}$$

$$x_n = -\frac{1}{k_i}$$

$$k_n = -\frac{1}{k_t} = -\frac{1}{\frac{8}{3}}$$

$$k_n = -\frac{1}{k_t} = -\frac{1}{\frac{8}{3}} = -\frac{3}{8}$$

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Jednadžba normale

$$y-y_0=k_n\cdot(x-x_0)$$

$$x_0 = 2$$

$$y_0 = 6$$

$$k_n=-\frac{3}{8}$$

$$k_n = -\frac{1}{k_t} = -\frac{1}{\frac{8}{3}} = -\frac{3}{8}$$

Jednadžba normale

$$x_0 = 2$$

$$y_0 = 6$$

$$k_n=-\frac{3}{8}$$

$$y-y_0=k_n\cdot(x-x_0)$$

$$y-6=-\frac{3}{8}\cdot(x-2)$$

$$k_n = -\frac{1}{k_t} = -\frac{1}{\frac{8}{3}} = -\frac{3}{8}$$

• Jednadžba normale

$$y - y_0 = k_n \cdot (x - x_0)$$

$$y - 6 = -\frac{3}{8} \cdot (x - 2)$$

$$y - 6 = -\frac{3}{8}x + \frac{3}{4}$$

$$k_n=-\frac{3}{8}$$

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Jednadžba normale

$$x_0 = 2$$

$$y_0 = 6$$

$$k_n=-\frac{3}{8}$$

$$y-y_0=k_n\cdot(x-x_0)$$

$$y-6=-\frac{3}{8}\cdot(x-2)$$

$$y - 6 = -\frac{3}{8}x + \frac{3}{4}$$

$$y = -\frac{3}{8}x + \frac{3}{4} + 6$$

$$k_n = -\frac{1}{k_t} = -\frac{1}{\frac{8}{3}} = -\frac{3}{8}$$

• Jednadžba normale

$$x_0 = 2$$
$$y_0 = 6$$

$$k_n = -\frac{3}{8}$$

$$y - y_0 = k_n \cdot (x - x_0)$$

$$y - 6 = -\frac{3}{8} \cdot (x - 2)$$

$$y - 6 = -\frac{3}{8}x + \frac{3}{4}$$

$$y = -\frac{3}{8}x + \frac{3}{4} + 6$$

$$y = -\frac{3}{8}x + \frac{27}{4}$$

Koeficijent smjera normale

$$\kappa_t = \frac{8}{3}$$

$$k_n = -\frac{1}{k_t} = -\frac{1}{\frac{8}{3}} = -\frac{3}{8}$$

Jednadžba normale

$$y - y_0 = k_n \cdot (x - x_0)$$

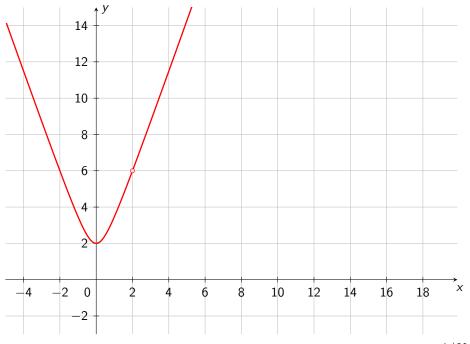
$$y - 6 = -\frac{3}{8} \cdot (x - 2)$$

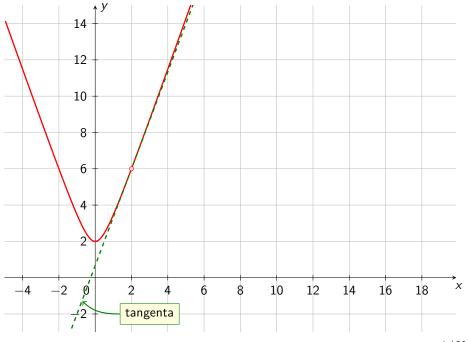
$$y - 6 = -\frac{3}{8}x + \frac{3}{4}$$

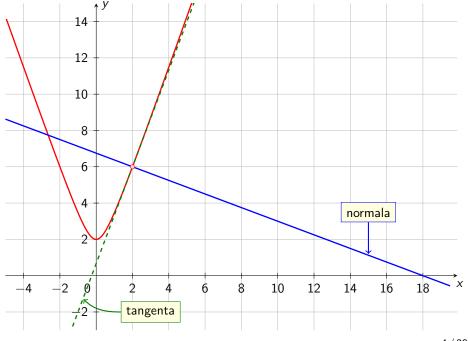
$$y = -\frac{3}{8}x + \frac{3}{4} + 6$$

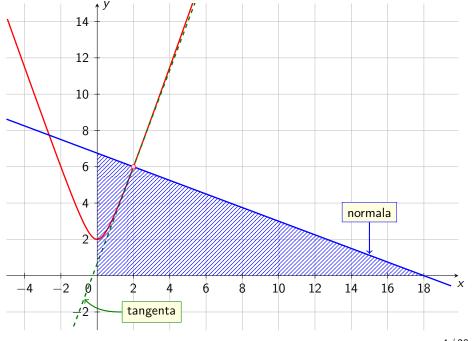
$$y = -\frac{3}{8}x + \frac{27}{4}$$

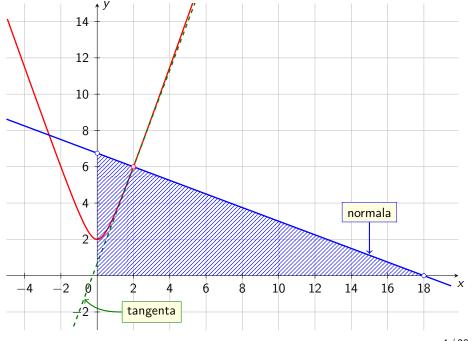
$$k_n = -\frac{3}{8}$$

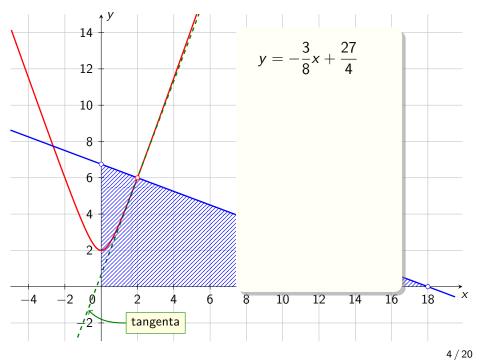


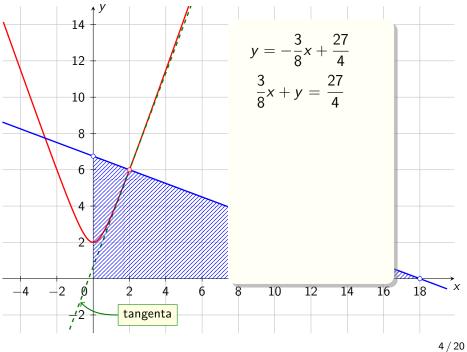


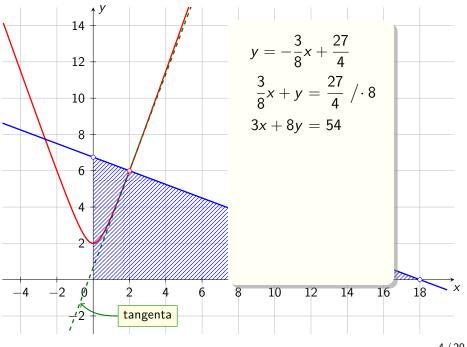


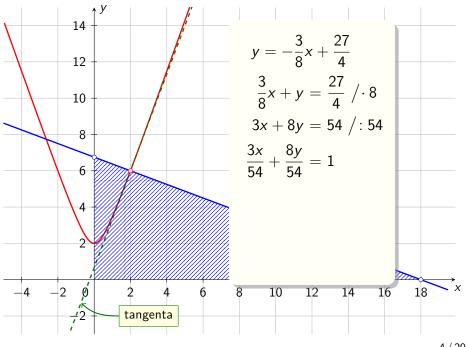


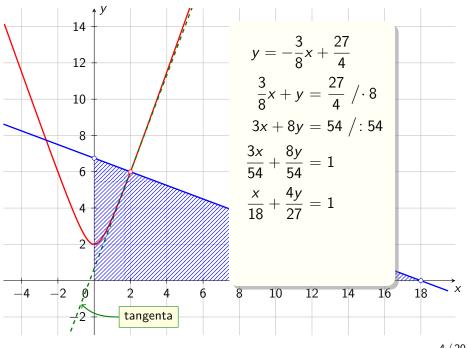


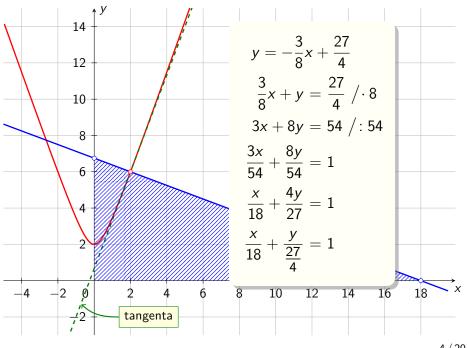


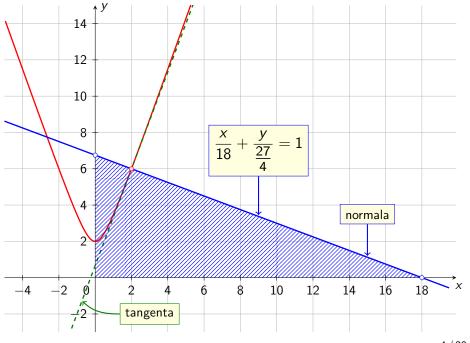


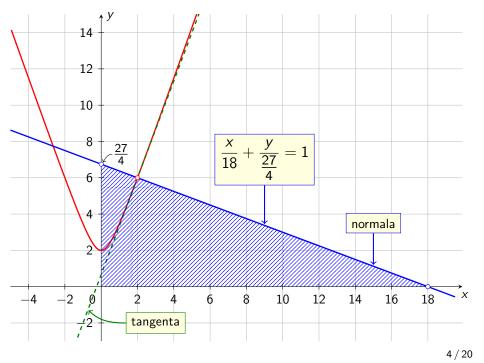


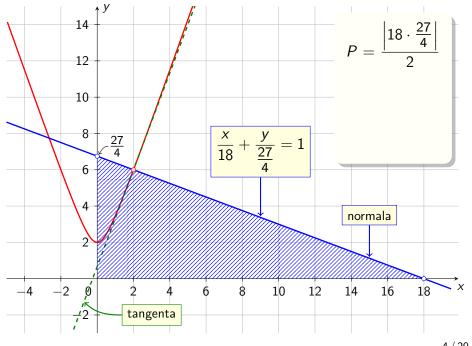


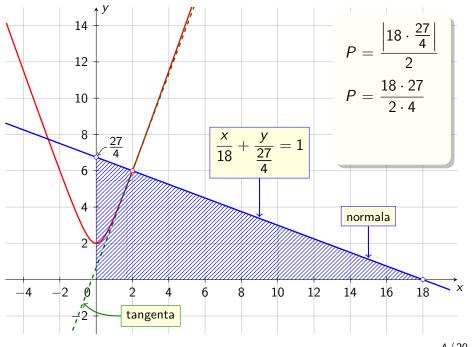


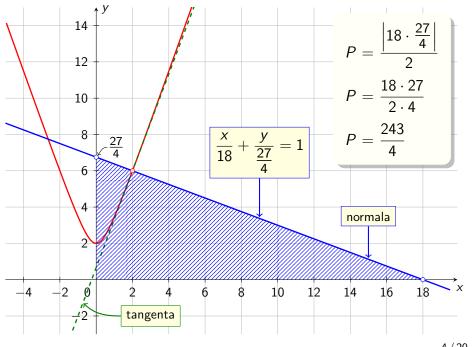












drugi zadatak

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

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Rješenje

• Prva derivacija

$$f'(x) =$$

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

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

• Prva derivacija

 $f'(x) = \frac{1}{3x+1}$

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

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Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

• Prva derivacija

 $f'(x) = \frac{1}{3x+1} \cdot$

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

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

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

 $f'(x) = \frac{1}{3x+1} \cdot (3x+1)'$

Rješenje

Prva derivacija

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})' \quad \left(\ln x\right)' = \frac{1}{x}$$

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Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

Prva derivacija

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \quad \left(\ln x\right)' = \frac{1}{x}$$

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1}$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

Prva derivacija

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})' \quad (\ln x)' = \frac{1}{x}$$

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

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

• Prva derivacija

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

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

• Prva derivacija

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

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$
$$f'(x) = 3 \cdot (3x+1)^{-1}$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

• Prva derivacija

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$
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$$f'(x) = 3 \cdot (3x+1)^{-1}$$

$$f''(x) =$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

Prva derivacija

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

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$
$$f'(x) = 3 \cdot (3x+1)^{-1}$$

$$f''(x) = 3$$

$$\left((\mathsf{ne imesto})^n\right)' = n(\mathsf{ne imesto})^{n-1} \cdot (\mathsf{ne imesto})' \quad \left| \ (x^n)' = nx^{n-1} \right|$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

Prva derivacija

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

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$
$$f'(x) = 3 \cdot (3x+1)^{-1}$$

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2}$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \mid (x^n)' = nx^{n-1}$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

• Prva derivacija

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$
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$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2}$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \mid (x^n)' = nx^{n-1}$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

 $f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2} \cdot (3x+1)^{x}$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \mid (x^n)' = nx^{n-1}$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$
$$f'(x) = 3 \cdot (3x+1)^{-1}$$

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2} \cdot (3x+1)' = -3 \cdot (3x+1)^{-2}$$

$$\left((\mathsf{ne imesto})^n
ight)' = n(\mathsf{ne imesto})^{n-1} \cdot (\mathsf{ne imesto})' \quad \left| \ (x^n)' = nx^{n-1} \right|$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

Rješenje
• Prva derivacija
$$\left(\ln \left(\text{nešto} \right) \right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto} \right)'$$

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

$$f'(x) = \frac{1}{3x+1} \cdot (3x+1)' = \frac{1}{3x+1} \cdot 3 = \frac{3}{3x+1}$$

$$f'(x) = 3 \cdot (3x+1)^{-1}$$

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2} \cdot (3x+1)' = -3 \cdot (3x+1)^{-2} \cdot 3$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \mid (x^n)' = nx^{n-1}$$

Odredite četvrtu derivaciju funkcije $f(x) = \ln(3x + 1)$.

Rješenje

Druga derivacija

$$f''(x) = 3 \cdot (-1) \cdot (3x+1)^{-2} \cdot (3x+1)' = -3 \cdot (3x+1)^{-2} \cdot 3$$
$$f''(x) = -9 \cdot (3x+1)^{-2}$$

 $((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \qquad (x^n)' = nx^{n-1}$

 $f''(x) = -9 \cdot (3x+1)^{-2}$

$$f'''(x) =$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot$$

$$\left((\mathsf{ne imesto})^n\right)' = n(\mathsf{ne imesto})^{n-1} \cdot (\mathsf{ne imesto})'$$
 $(x^n)' = nx^{n-1}$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3}$$

$$\left((\mathsf{ne imesto})^n\right)' = n(\mathsf{ne imesto})^{n-1} \cdot (\mathsf{ne imesto})'$$
 $(x^n)' = nx^{n-1}$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3}$$

$$\left((\mathsf{ne ext{sto}})^n\right)' = n(\mathsf{ne ext{sto}})^{n-1} \cdot (\mathsf{ne ext{sto}})' \quad \left| \ (x^n)' = nx^{n-1} \right|$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)^{-3}$$

$$\left((\mathsf{ne ext{sto}})^n\right)' = n(\mathsf{ne ext{sto}})^{n-1} \cdot (\mathsf{ne ext{sto}})' \quad \left| (x^n)' = nx^{n-1} \right|$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3}$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \mid (x^n)' = nx^{n-1}$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$

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

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$
$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

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

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$
$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

• Četvrta derivacija

$$f^{(4)}(x) =$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \quad (x^n)' = nx^{n-1}$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$
$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

$$f^{(4)}(x) = 54$$
.

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \quad (x^n)' = nx^{n-1}$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$
$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

Četvrta derivacija

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4}$$

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

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$
$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4}$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \mid (x^n)' = nx^{n-1}$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$
$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4} \cdot (3x+1)^{4}$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \mid (x^n)' = nx^{n-1}$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$
$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4} \cdot (3x+1)' = -162 \cdot (3x+1)^{-4}$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \mid (x^n)' = nx^{n-1}$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$
$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4} \cdot (3x+1)' = -162 \cdot (3x+1)^{-4} \cdot 3$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})' \mid (x^n)' = nx^{n-1}$$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$
$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4} \cdot (3x+1)' = -162 \cdot (3x+1)^{-4} \cdot 3$$

$$f^{(4)}(x) = -486 \cdot (3x+1)^{-4}$$

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'$$
 $(x^n)' = nx^{n-1}$

$$f''(x) = -9 \cdot (3x+1)^{-2}$$

$$f'''(x) = -9 \cdot (-2) \cdot (3x+1)^{-3} \cdot (3x+1)' = 18 \cdot (3x+1)^{-3} \cdot 3$$
$$f'''(x) = 54 \cdot (3x+1)^{-3}$$

$$f^{(4)}(x) = 54 \cdot (-3) \cdot (3x+1)^{-4} \cdot (3x+1)' = -162 \cdot (3x+1)^{-4} \cdot 3$$
$$f^{(4)}(x) = -486 \cdot (3x+1)^{-4}$$

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

$$((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'$$
 $(x^n)' = nx^{n-1}$

treći zadatak

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

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$$ye^y = e^{x+1}/\frac{\mathrm{d}}{\mathrm{d}x}$$

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^y = e^{x+1}/\frac{d}{dx}$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^y = e^{x+1} / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^y = e^{x+1} / \frac{d}{dx}$$
$$y' \cdot e^y +$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$
$$y' \cdot e^{y} + y \cdot (e^{y})'$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^y = e^{x+1}/\frac{d}{dx}$$

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

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$
$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$
$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

$$y'e^{y}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = \frac{e^{x+1}}{\frac{d}{dx}}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

$$y'e^{y} + \frac{1}{2}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

$$y'e^{y} + y \cdot$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

$$y'e^{y} + y \cdot e^{y}y'$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

$$y'e^{y} + y \cdot e^{y}y' =$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'()$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$
 $y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$
 $y'e^{y} + y \cdot e^{y}y' = e^{x+1} \cdot 1$
 $y'(e^{y})$

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$
 $y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$
 $y'e^{y} + y \cdot e^{y}y' = e^{x+1} \cdot 1$
 $y'(e^{y} + y)$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y})$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) =$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) = e^{x+1}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) = e^{x+1}$$

$$y' = ----$$

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) = e^{x+1}$$

$$y' = \frac{e^{x+1}}{e^{x+1}}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) = e^{x+1}$$

$$y' = \frac{e^{x+1}}{e^{y} + ye^{y}}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) = e^{x+1}$$

$$y' = \frac{e^{x+1}}{e^{y} + ye^{y}}$$

$$y' = ----$$

 $y' = \frac{\mathrm{d}y}{\mathrm{d}x}$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) = e^{x+1}$$

$$y' = \frac{e^{x+1}}{e^{y} + ye^{y}}$$

$$y' = \frac{e^{x+1}}{e^{x+1}}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) = e^{x+1}$$

$$y' = \frac{e^{x+1}}{e^{y} + ye^{y}}$$

$$y' = \frac{e^{x+1}}{(e^{x+1})e^{y}}$$

 $y' = \frac{\mathrm{d}y}{\mathrm{d}x}$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) = e^{x+1}$$

$$y' = \frac{e^{x+1}}{e^{y} + ye^{y}}$$

$$y' = \frac{e^{x+1}}{(1+y)e^{y}}$$

 $y' = \frac{\mathrm{d}y}{\mathrm{d}x}$

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

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) = e^{x+1}$$

$$y' = \frac{e^{x+1}}{e^{y} + ye^{y}}$$

$$y' = \frac{e^{x+1}}{(1+y)e^{y}}$$

 $y' = \frac{\mathrm{d}y}{\mathrm{d}x}$

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

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^{y} + ye^{y}) = e^{x+1}$$

$$y' = \frac{e^{x+1}}{e^{y} + ye^{y}}$$

$$y' = \frac{e^{x+1}}{(1+y)e^y}$$

$$y' = \frac{1}{1+y}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

$$y'(e^y + ye^y) = e^{x+1}$$

$$y' = \frac{e^{x+1}}{e^y + ye^y}$$

$$y' = \frac{e^{x+1}}{(1+y)e^y}$$

$$y' = \frac{1}{1+v}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s ye $^y = e^{x+1}$.

Rješenje

$$ye^y = e^{x+1} / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$$

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

 $y'(e^{y} + ye^{y}) = e^{x+1}$

$$y' = \frac{e^{x+1}}{e^y + ye^y}$$

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

$$y' = \frac{e^{x+1}}{(1+y)e^y}$$

$$y' = \frac{e^{x-y+1}}{1+y}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

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

$$(e^x)'=e^x$$

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

Odredite derivaciju funkcije y = y(x) zadane implicitno s $ye^y = e^{x+1}$.

Rješenje

$$ye^{y} = e^{x+1} / \frac{d}{dx}$$

 $y' \cdot e^{y} + y \cdot (e^{y})' = e^{x+1} \cdot (x+1)'$
 $y'e^{y} + y \cdot e^{y}y' = e^{x+1} \cdot 1$

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

 $y'(e^{y} + ye^{y}) = e^{x+1}$

$$y' = \frac{e^{x+1}}{e^y + ye^y}$$

$$y' = \frac{e^{x+1}}{(1+y)e^y}$$

$$y' = \frac{e^{x - y + 1}}{1 + y}$$

 $y' = \frac{\mathrm{d}y}{\mathrm{d}x}$

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

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

$$(e^x)'=e^x$$

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

7/20

četvrti zadatak

Odredite derivaciju funkcije y = y(x) zadane implicitno s

$$y^2 = \cos 3x + \ln \frac{y}{x}.$$

$$y^2 = \cos 3x + \ln \frac{y}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{\mathrm{d}}{\mathrm{d}x}$$

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

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

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{\mathrm{d}}{\mathrm{d}x}$$

2yy'

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

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

$$ig((\mathsf{ne imesto})^nig)'=\mathit{n}(\mathsf{ne imesto})^{n-1}\cdot(\mathsf{ne imesto})'$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$2yy' =$$

$$\frac{(\cos x)' = -\sin x}{(x^n)' = nx^{n-1}}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

$$\left((\mathsf{ne imesto})^n\right)' = n(\mathsf{ne imesto})^{n-1} \cdot (\mathsf{ne imesto})'$$

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$2yy' = -\sin 3x$$

$$(\cos x)' = -\sin x$$

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

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

$$ig((\mathsf{ne ext{sto}})^nig)'=n(\mathsf{ne ext{sto}})^{n-1}\cdot(\mathsf{ne ext{sto}})'$$

$$ig(\cos (\mathsf{ne ext{ iny sto}})ig)' = -\sin (\mathsf{ne ext{ iny sto}}) \cdot (\mathsf{ne ext{ iny sto}})'$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$2yy' = -\sin 3x \cdot (3x)'$$

$$\frac{(\cos x)' = -\sin x}{(x^n)' = nx^{n-1}}$$

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

$$ig((\mathsf{ne ext{ iny to}})^nig)'=n(\mathsf{ne iny to})^{n-1}\cdot(\mathsf{ne iny to})'$$

$$ig(\cos(\mathsf{ne imesto})ig)' = -\sin(\mathsf{ne imesto})\cdot(\mathsf{ne imesto})'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' +$$

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

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

$$ig(\cos (\mathsf{ne imes to})ig)' = -\sin (\mathsf{ne imes to}) \cdot (\mathsf{ne imes to})'$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^{2} = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$
$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y}$$

$$(\cos x)' = -\sin x$$
$$(x^n)' = nx^{n-1}$$
$$y' = -\sin x$$

$$((\mathsf{ne\check{s}to})^n)' = n(\mathsf{ne\check{s}to})^{n-1} \cdot (\mathsf{ne\check{s}to})'$$

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$ig(\operatorname{\mathsf{In}}ig(\operatorname{\mathsf{ne int}}ig)ig)'=rac{1}{\operatorname{\mathsf{ne int}}ig}\cdot(\operatorname{\mathsf{ne int}}ig)'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

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

$$((nešto)^n)' = nx^{n-1}$$

$$y' = \frac{1}{dx}$$

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

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$\Big(\ln ig(\mathsf{ne imesto} ig) \Big)' = rac{1}{\mathsf{ne imesto}} \cdot ig(\mathsf{ne imesto} ig)'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$= \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

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

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

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

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$\left(\ln\left(\mathsf{ne imesto}\right)\right)' = \frac{1}{\mathsf{ne imesto}} \cdot (\mathsf{ne imesto})'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

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

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

$$2yy' = -3\sin 3x$$

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$\left(\ln\left(\mathsf{ne imesto}
ight)\right)' = rac{1}{\mathsf{ne imesto}}\cdot\left(\mathsf{ne imesto}
ight)'$$

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

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$y' = \cos 3x + \sin \frac{\pi}{x} / \frac{1}{dx}$$
$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot \left(\frac{y}{x}\right)'$$

$$2yy = -\sin 3x \cdot (3x) + \frac{y}{x} \cdot (\frac{1}{x})$$

$$2vv' = -3\sin 3x +$$

$$(\cos x)' = -\sin x$$

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

$$y' = \frac{3}{dx}$$

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

$$ig(\cos (\mathsf{ne imes to})ig)' = -\sin (\mathsf{ne imes to}) \cdot (\mathsf{ne imes to})'$$

$$\left(\ln \left(\mathsf{ne imesto} \right) \right)' = rac{1}{\mathsf{ne imesto}} \cdot \left(\mathsf{ne imesto} \right)'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

$$2yy' = -3\sin 3x + \frac{x}{y}$$

 $(\cos x)' = -\sin x$

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

$$y' = \frac{3}{dx}$$

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

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

 $y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$

$$x + \ln \frac{y}{x} / \frac{d}{dx}$$

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

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

 $2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot \left(\frac{y}{x}\right)'$

 $2yy' = -3\sin 3x + \frac{x}{y}.$

 $(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$

ešto
$$)^{n-1}$$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

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

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

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

$$(\cos x)' = -\sin x$$

$$(2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

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

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

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

$$\frac{\left(\cos\left(\text{nešto}\right)\right)' = -\sin\left(\text{nešto}\right) \cdot \left(\text{nešto}\right)'}{\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)'}$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

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

$$(\cos x)' = -\sin x$$

$$y^{2} = \cos 3x + \ln \frac{y}{x} / \frac{1}{dx}$$

$$(\cos x)' = -\sin x$$

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

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{x^2}{(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'}$$

$$(\cos(\text{nesto})) = -\sin(\text{nesto}) \cdot (\text{nesto})'$$

$$(\ln(\text{nesto}))' = \frac{1}{\text{nesto}} \cdot (\text{nesto})'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$(2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

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

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\right.$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x}{x^2}$$

$$\left(\cos\left(\text{nešto}\right)\right)' = -\sin\left(\text{nešto}\right) \cdot \left(\text{nešto}\right)'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

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

$$(\cos x)' = -\sin x$$

$$y^{2} = \cos 3x + \ln \frac{y}{x} / \frac{1}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\underline{y}} \cdot \left(\frac{y}{x}\right)'$$

$$(\cos x)' = -\sin x$$

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

$$y' = \frac{dy}{dx}$$

$$\left(\frac{y}{x}\right)' \qquad \left(x^n\right)' = nx^{n-1} \qquad d.$$

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - \frac{((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}{(\cos (\text{nešto}))' = -\sin (\text{nešto}) \cdot (\text{nešto})'}$$

$$((\text{ln}(\text{nešto}))' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$(2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

$$(\cos x)' = -\sin x$$

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

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

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

$$(\cos (\text{nešto}))' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$

$$2yy = -3\sin 3x + \frac{1}{y} \cdot \frac{1}{x^2} \left(\cos \left(\text{nešto} \right) \right)' = -\sin \left(\text{nešto} \right) \cdot \left(\text{nešto} \right)'$$

$$\left(\ln \left(\text{nešto} \right) \right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto} \right)'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

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

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{1}{x}\right)' + \frac{1}{x}$$

$$((\text{nešto})^n)' = n(\text{nešto})$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

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

$$2yy' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$

$$\left(\operatorname{nešto}\right)^{\prime} = -\sin\left(\operatorname{nešto}\right) \cdot \left(\operatorname{nesto}\right)$$

$$y \qquad x^2$$
$$2vv' =$$

$$(\operatorname{ln}(\operatorname{nešto}))' = -\sin(\operatorname{nešto}) \cdot (\operatorname{nešto})'$$
 $(\operatorname{ln}(\operatorname{nešto}))' = \frac{1}{\operatorname{nešto}} \cdot (\operatorname{nešto})'$

$$2yy' =$$

esenje
$$(\ln x)' =$$

 $2vv' = -3\sin 3x$

$$+ \ln \frac{y}{x} /$$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)' \qquad (x^n)' = nx^{n-1}$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$2yy' = -3\sin 3x$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$(2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

$$(\cos x)' = -\sin x$$

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

$$(\cos x)' = -\sin x$$

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

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

$$(\cos x)' = -\sin x$$

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

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot (3x)' + \frac{1}{$$

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

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$(\mathsf{sto}))' = - \mathsf{sin} \, (\mathsf{ne ext{sto}}) \cdot (\mathsf{ne ext{sto}})$$

$$2yy' = -3\sin 3x + \frac{1}{y} \cdot \frac{3}{x^2}$$

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$2yy' = -3\sin 3x + ----$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

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

$$(\cos x)' = -\sin x$$

$$y'' = \cos 3x + \ln \frac{1}{x} / \frac{1}{dx}$$

$$(\cos x)' = -\sin x$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

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

$$((\operatorname{next}_0)^n)' = n(\operatorname{next}_0)^n$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

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

$$((\text{nešto})^n)' = n(\text{nešto})^n \cdot (\text{nešto})'$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y \times - y \cdot 1}{x^2}$$

$$\left(\cos\left(\text{nešto}\right)\right)' = -\sin\left(\text{nešto}\right) \cdot \left(\text{nešto}\right)$$

$$2yy' = -3\sin 3x + - \frac{\left(\cos\left(\text{nešto}\right)\right)' = -\sin\left(\text{nešto}\right) \cdot \left(\text{nešto}\right)'}{\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)'}$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

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

$$(\cos x)' = -\sin x$$

$$y'' = \cos 3x + \ln \frac{1}{x} / \frac{1}{dx}$$

$$(\cos x)' = -\sin x$$

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

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

$$2yy' = -3\sin 3x + \frac{y'x - y}{x^2}$$

$$((\text{nešto})^n)' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$

$$((\text{ln (nešto)})' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$2yy' = -3\sin 3x + \frac{y}{y} \cdot \frac{x^2}{x^2}$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{x^2}$$

$$\left(\cos (\text{nešto}) \right)' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$

$$\left(\ln (\text{nešto}) \right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{}$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot \left(\frac{y}{x}\right)'$$

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

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

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

 $2yy' = -3\sin 3x + \frac{y'x - y}{xy}$

$$ig((\mathsf{ne ext{sto}})^nig)'=\mathit{n}(\mathsf{ne ext{sto}})^{n-1}\cdot(\mathsf{ne ext{sto}})'$$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$\frac{1}{\left(\cos\left(\mathsf{ne iny sto}
ight)}' = -\sin\left(\mathsf{ne iny sto}
ight)\cdot\left(\mathsf{ne iny sto}
ight)'}$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$(2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

$$(\cos x)' = -\sin x$$

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

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}}.$$

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

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$(\mathsf{ne ext{sto}}))' = -\sin(\mathsf{ne ext{sto}}) \cdot (\mathsf{ne ext{sto}})$$

$$2yy' = 3\sin 3x + y \qquad x^2$$

$$y'x - y \qquad x^2$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\underline{y}} \cdot \left(\frac{y}{x}\right)'$$

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

$$(\cos x)' = -\sin x$$

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

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot (\frac{y}{x})$$

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y \times y \times y \cdot 1}{x^2}$$

$$(\mathsf{sto}))' = - \mathsf{sin} \, (\mathsf{nesto}) \cdot (\mathsf{nesto})$$

$$2yy' = -3\sin 3x + \frac{y}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

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

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$(\text{ln (nešto)})' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$2xy^2y' = \frac{1}{x^2} \cdot (\text{nešto})'$$

$$(\operatorname{nešto}))' = -\sin(\operatorname{nešto}) \cdot (\operatorname{nešto})$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy}$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} /$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$(\cos x)' = -\sin x$$

$$y^{2} = \cos 3x + \ln \frac{2}{x} / \frac{1}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

$$(\cos x)' = -\sin x$$

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

$$y' = \frac{dy}{dx}$$

$$\frac{1}{x}$$

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

$$2yy' = -3\sin 3x + \frac{y}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$(\operatorname{\mathsf{nešto}}))' = -\sin(\operatorname{\mathsf{nešto}}) \cdot (\operatorname{\mathsf{nešto}})$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \frac{1}{x}$$

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

 $2xv^2v' = -3xv \sin 3x$

$$(\ln (\text{nešto}))' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$

$$(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$(2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

$$(\cos x)' = -\sin x$$

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

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}}.$$

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

$$y' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$\frac{x^2}{x^2}$$

$$\left(\operatorname{nešto}
ight) = -\sin\left(\operatorname{nešto}
ight) \cdot \left(\operatorname{nešto}
ight)$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$(\ln (\text{nešto}))' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$

$$(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$(\cos x)' = -\sin x$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\underline{y}} \cdot \left(\frac{y}{x}\right)'$$

$$(\cos x)' = -\sin x$$

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

$$y' = \frac{\mathrm{d}y}{\mathrm{d}x}$$

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

$$2yy' = -3\sin 3x + \frac{\cancel{x}}{\cancel{x}} \cdot \frac{y'x - y \cdot 1}{\cancel{x}}$$

 $2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$ $2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$

$$2xy^2y' = -3\sin 3x + \frac{1}{xy} / xy$$
$$2xy^2y' = -3xy\sin 3x + y'x - y$$

 $(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$ $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

$$y' = \frac{dy}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

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

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$\frac{1}{\left(\cos\left(\text{nešto}\right)\right)' = -\sin\left(\text{nešto}\right) \cdot \left(\text{nešto}\right)'}$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \frac{xy}{xy}$$
$$2xy^2y' = -3xy\sin 3x + y'x - y$$

 $2xv^2v'$

$$(\operatorname{\mathsf{In}} (\operatorname{\mathsf{ne int}} to))' = -\sin(\operatorname{\mathsf{ne int}} to) \cdot (\operatorname{\mathsf{ne int}} to)'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

$$y' = \frac{dy}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

$$\frac{(x) - nx}{((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$(\ln(\text{nešto}))' = \frac{1}{(\text{nešto})'}$$

 $2xy^2y' = -3xy\sin 3x + y'x - y$ $2xv^2v'-xv'$

$$\frac{(\ln(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})}{(\ln(\text{nešto}))'} = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

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

$$(\cos x)' = -\sin x$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

$$y' = \frac{dy}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$2xy^{2}y' = -3xy \sin 3x + \frac{1}{xy} / x$$

$$2xy^{2}y' = -3xy \sin 3x + y'x - y$$

$$2xy^{2}y' - xy' =$$

$$\frac{(\ln(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})}{(\ln(\text{nešto}))'} = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{y} \cdot (\frac{y}{x})'$$

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

$$y' = \frac{dy}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

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

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$((\text{ln}(\text{nešto}))' = \frac{1}{x^2} \cdot (\text{nešto})'$$

$$(\mathsf{to}))' = -\sin(\mathsf{nešto}) \cdot (\mathsf{nesto})$$

$$2yy = -3\sin 3x + \frac{1}{xy} / xy$$
$$2xy^2y' = -3xy\sin 3x + y'x - y$$

 $2xy^2y' - xy' = -3xy\sin 3x - y$

$$(\ln (\text{nešto}))' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$
 $= \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot (\frac{y}{x})'$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

$$(\cos x)' = -\sin x$$

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

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

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$(\ln (\text{nešto}))' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$

$$((\text{nešto}))' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$

 $2xy^2y' = -3xy\sin 3x + y'x - y$

 $2xy^2y' - xy' = -3xy\sin 3x - y$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^{2} = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^{2}}$$

$$(\cos x)' = -\sin x$$

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

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

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

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

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$2xy^2y' = -3xy\sin 3x + y'x - y$$

$$(\cos(\text{nešto}))'' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$(\ln(\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

 $(2xy^2)$

 $2xy^2y' - xy' = -3xy\sin 3x - y$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^{2} = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

$$(\cos x)' = -\sin x$$

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

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^{2}}$$

$$(\cos (nešto))' = -\sin (nešto) \cdot (nešto)'$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$(\ln (nešto))' = \frac{1}{nešto} \cdot (nešto)'$$

 $2xy^2y' = -3xy\sin 3x + y'x - y$ $2xy^2y' - xy' = -3xy\sin 3x - y$

$$(2xy^2 -)y'$$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot (\frac{y}{x})'$$

$$(\cos x)' = -\sin x$$

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

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$$

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

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$(\text{ln (nešto)})' = -\sin (\text{nešto}) \cdot (\text{nešto})'$$

$$2xy^2y' = -3xy\sin 3x + y'x - y$$

 $2xy^2y' = -3xy\sin 3x + y'x - y$

 $2xy^2y' - xy' = -3xy\sin 3x - y$ $(2xy^2-x)y'$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^{2} = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right)'$$

$$(\cos x)' = -\sin x$$

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

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

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^{2}}$$

$$(\cos (nešto))' = -\sin (nešto) \cdot (nešto)'$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$(\ln (nešto))' = \frac{1}{nešto} \cdot (nešto)'$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$2xy^2y' = -3xy\sin 3x + y'x - y$$

$$\left(\ln \left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)'$$

 $2xy^2y' = -3xy\sin 3x + y'x - y$

 $2xy^2y' - xy' = -3xy\sin 3x - y$

 $(2xy^2 - x)y' =$ 9/20

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

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

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

$$2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot \left(\frac{y}{x}\right) \qquad (x^n)' = nx^{n-1}$$

$$2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2} \qquad ((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'$$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$2xy^2y' = -3xy\sin 3x + y'x - y$$

$$(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

 $2xy^{2}y' = -3xy \sin 3x + y'x - y$ $2xy^{2}y' - xy' = -3xy \sin 3x - y$

 $(2xy^2 - x)y' = -3xy\sin 3x - y$ 9/20

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$(y)' = -\sin x$$

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

$$(\cos x)' = -\sin x$$

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

$$(\cos x)' = -\sin x$$

$$(\cos x)'$$

$$2xy^{2}y' = -3\sin 3x + \frac{1}{xy} / xy$$

$$2xy^{2}y' = -3xy\sin 3x + y'x - y$$

$$2xy^{2}y' - xy' = -3xy\sin 3x - y$$

$$(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$y' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

 $(2xy^2 - x)y' = -3xy\sin 3x - y$

9 / 20

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^{2} = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$(\sin x)' = \frac{dy}{dx}$$

$$(\cos x)' = -\sin x$$

$$(\sin x)' = \frac{dy}{dx}$$

$$(\cos x)' = -\sin x$$

$$(\sin x)' = -\sin x$$

$$(\cos x)' = -\sin x$$

$$($$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

$$2xy^2y' = -3xy\sin 3x + y'x - y$$

$$(\cos(\text{nešto}))' = -\sin(\text{nešto}) \cdot (\text{nešto})'$$

$$(\ln(\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$2xy^{2}y' = -3xy \sin 3x + y'x - y$$

$$2xy^{2}y' = xy' - 3xy \sin 3x - y$$

$$y' = \frac{-3xy \sin 3x - y}{y'}$$

 $2xy^2y' - xy' = -3xy\sin 3x - y$ $(2xy^2 - x)y' = -3xy\sin 3x - y$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

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$$(\sin x)' = -\sin x$$

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$$($$

$$2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$$

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$$2xy^{2}y' = -3xy \sin 3x + y'x - y$$

$$2xy^{2}y' - xy' = -3xy \sin 3x - y$$

$$y' = \frac{-3xy \sin 3x - y}{2xy^{2} - x}$$

 $2xy^2y' - xy' = -3xy\sin 3x - y$ $(2xy^2 - x)y' = -3xy\sin 3x - y$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

$$y^{2} = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$$

$$(\cos x)' = -\sin x$$

$$(y') = \frac{dy}{dx}$$

$$(\cos x)' = -\sin x$$

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

$$(\cos x)' = -\sin x$$

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

$$(\cos x)' = -\sin x$$

$$(\cos x)' = -\cos x$$

$$(\cos x)' = -\cos x$$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$2xy^{2}y' = -3xy\sin 3x + y'x - y$$

$$2xy^{2}y' - xy' = -3xy\sin 3x - y$$

$$y' = \frac{-3xy\sin 3x - y}{2xy^{2} - x} \cdot \frac{-1}{-1}$$

 $y' = \frac{-3xy \sin 3x - y}{2xy^2 - x} \cdot \frac{-1}{-1}$ $2xy^2y' - xy' = -3xy\sin 3x - y$

 $(2xy^2 - x)y' = -3xy\sin 3x - y$ 9/20

Rješenje
$$(\ln x)' = \frac{1}{x}$$

 $y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$
 $2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot (\frac{y}{x})'$
 $2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$
 $2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$
 $2xy^2y' = -3xy\sin 3x + y'x - y$
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Rješenje
$$(\ln x)' = \frac{1}{x}$$

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/ 20

Rješenje
$$(\ln x)' = \frac{1}{x}$$

 $y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$
 $2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot (\frac{y}{x})'$
 $2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$
 $(\cos(nešto))' = n(nešto)^{n-1} \cdot (nešto)'$
 $2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$
 $2xy^2y' = -3xy\sin 3x + y'x - y$
 $2xy^2y' - xy' = -3xy\sin 3x - y$
 $(2xy^2 - x)y' = -3xy\sin 3x - y$

Rješenje
$$(\ln x)' = \frac{1}{x}$$

 $y^2 = \cos 3x + \ln \frac{y}{x} / \frac{d}{dx}$
 $2yy' = -\sin 3x \cdot (3x)' + \frac{1}{\frac{y}{x}} \cdot (\frac{y}{x})'$
 $2yy' = -3\sin 3x + \frac{x}{y} \cdot \frac{y'x - y \cdot 1}{x^2}$
 $2yy' = -3\sin 3x + \frac{y'x - y}{xy} / \cdot xy$
 $2xy^2y' = -3xy\sin 3x + y'x - y$
 $2xy^2y' - xy' = -3xy\sin 3x - y$

peti zadatak

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

Rješenje

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x}$$

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

Rješenje

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

Rješenje

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

ln y =

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

Rješenje

$$y = (x + tg^{2}x)^{ctg x} / \ln \ln y = \ln (x + tg^{2}x)^{ctg x}$$

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

Rješenje

$$y = (x + tg^{2}x)^{ctg x} / \ln \ln y = \ln (x + tg^{2}x)^{ctg x}$$

$$\ln y = \ln (x + tg^{2}x)^{ctg x}$$

$$Rješenje \left[\log_a x^k = k \log_a x \right]$$

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 \, x \right)^{\mathsf{ctg} \, x}$$

$$ln y =$$

Rješenje
$$\log_a x^k = k \log_a x$$

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right)$$

Rješenje
$$\log_a x^k = k \log_a x$$

$$y = \left(x + \operatorname{tg}^2 x\right)^{\operatorname{ctg} x} / \ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

Rješenje
$$\log_a x^k = k \log_a x$$

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

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$Rješenje \log_a x^k = k \log_a x$$

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

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{y}$$

$$\left(\ln \left(\mathsf{ne imesto} \right) \right)' = rac{1}{\mathsf{ne imesto}} \cdot \left(\mathsf{ne imesto} \right)'$$

$$Rješenje \log_a x^k = k \log_a x$$

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

$$y = (x + tg^2 x)^{ctg x} / \ln x$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{y} \cdot y'$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Zadatak 5

$$Rješenje \log_a x^k = k \log_a x$$

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

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{v} \cdot y' =$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

$$Rješenje \log_a x^k = k \log_a x$$

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

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 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

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

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

$$Rješenje \log_a x^k = k \log_a x$$

$$y = (x + tg^2 x)^{\operatorname{ctg} x} / \ln x$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{y} \cdot y' = (\operatorname{ctg} x)'$$

$$\frac{\mathrm{d}}{\mathrm{d}x}$$

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

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Rješenje
$$\log_a x^k = k \log_a x$$

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

$$y = (x + tg^2 x)^{ctg x} / ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{y} \cdot y' = (\operatorname{ctg} x)' \cdot$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

$$Rješenje \log_a x^k = k \log_a x$$

$$y = (x + tg^2 x)^{ctg x} / ln$$

$$\ln y = \ln \left(x + tg^2 x \right)^{\operatorname{ctg} x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{y} \cdot y' = (\operatorname{ctg} x)' \cdot \ln \left(x + \operatorname{tg}^2 x \right)$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

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

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

$$Rješenje \log_a x^k = k \log_a x$$

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$\ln y = \ln \left(x + tg^2 x \right)^{\operatorname{ctg} x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{v} \cdot y' = (\operatorname{ctg} x)' \cdot \ln (x + \operatorname{tg}^2 x) +$$

$$\left(\ln\left(\mathsf{ne\check{s}to}\right)\right)' = \frac{1}{\mathsf{ne\check{s}to}} \cdot (\mathsf{ne\check{s}to})'$$

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

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

Rješenje
$$\log_a x^k = k \log_a x$$

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 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

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$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{v} \cdot y' = (\operatorname{ctg} x)' \cdot \ln(x + \operatorname{tg}^2 x) + \operatorname{ctg} x$$

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

Rješenje
$$\log_a x^k = k \log_a x$$

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

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$y = (x + tg^2 x)^{ctg x} / ln$$

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$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{v} \cdot y' = (\operatorname{ctg} x)' \cdot \ln (x + \operatorname{tg}^2 x) + \operatorname{ctg} x \cdot$$

10 / 20

Rješenje
$$\log_a x^k = k \log_a x$$

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

$$y = (x + tg^2 x)^{ctg x} / ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \left. \mathsf{ctg} \, x \cdot \ln \left(x + \mathsf{tg}^2 \, x \right) \right/ \tfrac{\mathrm{d}}{\mathrm{d}x}}$$

$$\left(\ln\left(\mathsf{ne\check{s}to}\right)\right)' = \frac{1}{\mathsf{ne\check{s}to}} \cdot (\mathsf{ne\check{s}to})'$$

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

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

$$Rješenje \log_a x^k = k \log_a x$$

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$\ln y = \ln \left(x + tg^2 x \right)^{\operatorname{ctg} x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

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

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

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\frac{y'}{y} =$$

Rješenje
$$\log_a x^k = k \log_a x$$

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

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$\frac{y'}{y'} =$$

$$\frac{1}{y} \cdot y' = (\operatorname{ctg} x)' \cdot \ln \left(x + \operatorname{tg}^2 x \right) + \operatorname{ctg} x \cdot \left(\ln \left(x + \operatorname{tg}^2 x \right) \right)'$$

$$Rješenje \log_a x^k = k \log_a x$$

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

$$y = (x + tg^2 x)^{ctg x} / ln$$

$$\ln y = \ln \left(x + tg^2 x \right)^{\operatorname{ctg} x}$$

$$tg^2 x) / \frac{d}{d}$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

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

$$\frac{y'}{y} = \frac{-1}{\sin^2 x}$$

$$Rješenje \log_a x^k = k \log_a x$$

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$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

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

$$\frac{y'}{y} = \frac{-1}{\sin^2 x} \cdot$$

Rješenje
$$\log_a x^k = k \log_a x$$

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

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$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

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

$$\frac{y'}{v} = \frac{-1}{\sin^2 x} \cdot \ln \left(x + \operatorname{tg}^2 x \right)$$

$$Rješenje \log_a x^k = k \log_a x$$

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

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$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

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

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

$$Rješenje \log_a x^k = k \log_a x$$

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

$$y = (x + tg^2 x)^{ctg x} / ln$$

$$\ln y = \ln \left(x + \operatorname{tg}^2 x \right)^{\operatorname{ctg} x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln (x + \operatorname{tg}^2 x) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

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

$$\frac{y'}{v} = \frac{-1}{\sin^2 x} \cdot \ln \left(x + \operatorname{tg}^2 x \right) + \operatorname{ctg} x$$

$$Rješenje \log_a x^k = k \log_a x$$

$$(\ln x)^{i}$$

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

$$y = (x + tg^2 x)^{ctg x} / ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

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

$$\frac{y'}{v} = \frac{-1}{\sin^2 x} \cdot \ln (x + tg^2 x) + \operatorname{ctg} x \cdot$$

Rješenje
$$\log_a x^k = k \log_a x$$

$$(\ln x)' =$$

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

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

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

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Rješenje
$$\log_a x^k = k \log_a x$$

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$$\left(\ln \left(\mathsf{ne imesto} \right) \right)' = rac{1}{\mathsf{ne imesto}} \cdot \left(\mathsf{ne imesto} \right)'$$

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$$y'$$

$$\frac{y'}{y}$$

$$Rješenje \log_a x^k = k \log_a x$$

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$$(g^2 x)^{\text{ctg}}$$

$$(x^2 x)^{\operatorname{ctg}}$$

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$$\ln y = \operatorname{ctg} x \cdot \ln (x + tg^2 x) / \frac{d}{dx}$$

$$\frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot^2 x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2} \cdot \mathbf{v}' = (\cot x)' \cdot \ln (x + \cot x) + \frac{1}{2}$$

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

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

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

Zadatak 5
$$(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)$$

$$Rješenje \log_a x^k = k \log_a x$$

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$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$(x^2 x)^{\cot x}$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$\left(\ln \left(\mathsf{ne imesto} \right) \right)' = \frac{1}{\mathsf{ne imesto}} \cdot \left(\mathsf{ne imesto} \right)'$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$(x + tg^2 x)/\frac{d}{dx}$$

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

$$\frac{1}{y} \cdot y' = (\operatorname{ctg} x)' \cdot \ln \left(x + \operatorname{tg}^2 x \right) + \operatorname{ctg} x \cdot \left(\ln \left(x + \operatorname{tg}^2 x \right) \right)'$$

$$(g^2x) + ctg$$

$$x \cdot (\ln(x + \mathsf{tg}^2))$$

$$\frac{y'}{y} = \frac{-1}{\sin^2 x} \cdot \ln\left(x + \operatorname{tg}^2 x\right) + \operatorname{ctg} x \cdot \frac{1}{x + \operatorname{tg}^2 x} \cdot \left(x + \operatorname{tg}^2 x\right)'$$

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

$$+ tg^2 \lambda$$

Rješenje
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$$(x)^{\operatorname{cig} x}$$

$$(x^2 x) / (x^2 + x^2) = (x^2 + x^2) / (x^2 + x^2) / (x^2 + x^2) = (x^2 + x^2) / (x^2 + x^2) / (x^2 + x^2) = (x^2 + x^2) / (x^2 + x^2) / (x^2 + x^2) = (x^2 + x^2) / (x^2 + x^2) / (x^2 + x^2) = (x^2 + x^2) / (x^2 + x^2) / (x^2$$

$$\ln y = \operatorname{ctg} x \cdot \ln (x + \operatorname{tg}^2 x) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$(x + \lg x) / \frac{1}{d}$$

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

$$\frac{y'}{y} = \frac{-1}{\sin^2 x} \cdot \ln\left(x + \lg^2 x\right) + \operatorname{ctg} x \cdot \frac{1}{x + \lg^2 x} \cdot \left(x + \lg^2 x\right)'$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x}$$

$$+\frac{\operatorname{ctg} x}{x+\operatorname{tg}^2}$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

$$Rješenje \log_a x^k = k \log_a x$$

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$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg} \, x} / \ln$$

$$(2x)^{\text{ctg}}$$

$$\ln y = \ln \left(x + \mathsf{tg}^2 \, x \right)^{\mathsf{ctg} \, x}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{v} \cdot y' = (\operatorname{ctg} x)' \cdot \ln (x + \operatorname{tg}^2 x) + \operatorname{ctg} x \cdot (\ln (x + \operatorname{tg}^2 x))'$$

$$x) + \operatorname{cig} x \cdot ($$

$$\frac{y'}{y} = \frac{-1}{\sin^2 x} \cdot \ln\left(x + \operatorname{tg}^2 x\right) + \operatorname{ctg} x \cdot \frac{1}{x + \operatorname{tg}^2 x} \cdot \left(x + \operatorname{tg}^2 x\right)'$$

$$\frac{y'}{y} = -\frac{\ln(x + \lg^2 x)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x}.$$

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Rješenje
$$\log_a x^k = k \log_a x$$
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$$\ln y = \ln \left(x + tg^2 x \right)^{\operatorname{ctg} x}$$

$$\ln y = \ln \left(x + \operatorname{tg}^2 x \right)^{-3}$$

$$(x^2 x)^{\text{ctg}}$$

$$(x)^{\alpha}$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{y} \cdot y' = (\operatorname{ctg} x)' \cdot \ln \left(x + \operatorname{tg}^2 x \right) + \operatorname{ctg} x \cdot \left(\ln \left(x + \operatorname{tg}^2 x \right) \right)'$$

$$\ln\left(x+\mathsf{tg}^2\right)$$

 $\frac{y'}{y} = -\frac{\ln(x + \lg^2 x)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(\right.$

$$x + tg^2 x$$

$$\frac{y'}{y} = \frac{-1}{\sin^2 x} \cdot \ln\left(x + \operatorname{tg}^2 x\right) + \operatorname{ctg} x \cdot \frac{1}{x + \operatorname{tg}^2 x} \cdot \left(x + \operatorname{tg}^2 x\right)'$$

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$$(2x)^{\text{ctg}}$$

 $\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1\right)$

$$\ln y = \ln \left(x + \mathsf{tg}^2 \, x \right)^{\mathsf{ctg} \, x}$$

 $\ln y = \operatorname{ctg} x \cdot \ln (x + \operatorname{tg}^2 x) / \frac{\mathrm{d}}{\mathrm{d} x}$

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$$\big(\operatorname{\mathsf{In}}\big(\mathsf{ne imesto}\big)\big)' = rac{1}{\mathsf{ne imesto}}\cdot(\mathsf{ne imesto})'$$

Zadatak 5
$$(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)$$

Odredite derivaciju funkcije $y = (x + tg^2 x)^{ctg x}$.

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$$+ tg^2 x$$

$$y' \cdot \ln(x +$$

$$(\operatorname{ctg} x)' \cdot \ln (x +$$

$$\frac{1}{v} \cdot y' = (\operatorname{ctg} x)' \cdot \ln (x + \operatorname{tg}^2 x) + \operatorname{ctg} x \cdot (\ln (x + \operatorname{tg}^2 x))'$$

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$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$\mathsf{to))}' = \frac{1}{\mathsf{r}}$$

$$(x_{0})(x_{0})(x_{0}) = \frac{1}{x_{0}}$$

$$' = \frac{1}{\text{nešto}} \cdot ($$

 $tg^2 x = (tg x)^2$

$$-\sigma^2 x)'$$

$$\frac{y}{y} = \frac{\sin^2 x}{\sin^2 x} \cdot \frac{\sin(x + \lg^2 x) + \operatorname{ctg} x}{x + \lg^2 x} \cdot \frac{y'}{x + \lg^2 x} = -\frac{\ln(x + \lg^2 x)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{\lg^2 x}{x + \lg^2 x}\right)$$

$$\frac{y'}{y} = \frac{-1}{\sin^2 x} \cdot \ln\left(x + \lg^2 x\right) + \operatorname{ctg} x \cdot \frac{1}{x + \lg^2 x} \cdot \left(x + \lg^2 x\right)'$$

$$x \cdot \overline{x +}$$

$$x + tg^2$$

$$\frac{1}{\operatorname{tg}^2 x}$$

Odredite derivaciju funkcije
$$y = (x + tg^2 x)^{ctg x}$$
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Rješenje
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$$(x)^{\operatorname{cig} x}$$

$$+ tg^2 x$$

$$x + tg^2$$

$$(\cot x)' \cdot \ln (x + 1)$$

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

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

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

$$^{\prime}=n(% \frac{1}{2})^{\prime}$$

$$n(\text{nešto})^{n-1}$$

$$n(\text{nesto}) \cdot (\text{ne})$$

$$\left(\operatorname{\mathsf{In}}\left(\operatorname{\mathsf{nešto}}\right)\right)' = \frac{1}{\operatorname{\mathsf{nešto}}}\cdot(\operatorname{\mathsf{nešto}})'$$

 $tg^2 x = (tg x)^2$

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

$$tg^2x))'$$

$$x + tg^2 x)'$$

$$x + tg^2 x)'$$

$$+ tg^2 x)'$$

$$\frac{y'}{y} = \frac{-1}{\sin^2 x} \cdot \ln\left(x + \lg^2 x\right) + \operatorname{ctg} x \cdot \frac{1}{x + \lg^2 x} \cdot \left(x + \lg^2 x\right)'$$

$$\frac{y'}{y} = \frac{\sin^2 x}{\sin^2 x} \cdot \ln(x + tg^2 x) + \operatorname{ctg} x \cdot \frac{x + tg^2}{x + tg^2}$$

$$\frac{y'}{y} = -\frac{\ln(x + tg^2 x)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + tg^2 x} \cdot \left(1 + \frac{1}{x + tg^2 x}\right)$$

$$\frac{1}{x + tg^2}$$

Odredite derivaciju funkcije
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Rješenje
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$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

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

 $\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x\right)$

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

 $tg^2 x = (tg x)^2$

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

$$ig(\mathsf{In} \, \big(\mathsf{ne imesto} ig) ig)' = rac{1}{\mathsf{ne imesto}} \cdot (\mathsf{ne imesto})'$$

 $\frac{y}{y} = \frac{-1}{\sin^2 x} \cdot \ln\left(x + \lg^2 x\right) + \operatorname{ctg} x \cdot \frac{1}{x + \lg^2 x} \cdot \left(x + \lg^2 x\right)'$



10/20

Odredite derivaciju funkcije
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Rješenje
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$$\ln y = \ln \left(x + \operatorname{tg}^2 x \right)^{\operatorname{ctg} x}$$

$$+ \operatorname{tg}^2 x$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$(x + tg^2 x)$$

$$esto))' = \frac{1}{1}$$

$$))'=rac{1}{n}$$

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

 $tg^2 x = (tg x)^2$

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

$$\left(\ln \left(\text{nešto} \right) \right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto} \right)'$$

$$\mathbf{g} \times \cdot \left(\ln \left(x + t \mathbf{g}^2 \times 1 \right) \right)'$$

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

$$\frac{1}{x^2 + t\sigma^2 x}$$

$$\cdot (x + tg^2 x)'$$

$$+ tg^2 x)'$$

$$\frac{y'}{y} = \frac{-1}{\sin^2 x} \cdot \ln\left(x + tg^2 x\right) + ctg x \cdot \frac{1}{x + tg^2 x} \cdot \left(x + tg^2 x\right)'$$

$$\frac{1}{+ \operatorname{tg}^2 x}$$

$$\operatorname{ctg} x \cdot \overline{x + \operatorname{tg}^2}$$

$$\frac{\log x}{x + \lg^2}$$

$$\frac{1}{\log^2 x}$$

$$(x + t\sigma^2 x)'$$

$$(x + +\sigma^2 x)'$$

Odredite derivaciju funkcije
$$y = (x + tg^2 x)^{ctg x}$$
.

Rješenje
$$\log_a x^k = k \log_a x$$

 $y = (x + tg^2 x)^{ctg x} / \ln$

$$\ln y = \ln \left(x + \mathsf{tg}^2 x \right)^{\mathsf{ctg} \, x}$$

$$+ t\sigma^2 x$$

$$\ln y = \operatorname{ctg} x \cdot \ln \left(x + \operatorname{tg}^2 x \right) / \frac{\mathrm{d}}{\mathrm{d}x}$$

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

 $\frac{y}{y} = \frac{-1}{\sin^2 x} \cdot \ln\left(x + \lg^2 x\right) + \operatorname{ctg} x \cdot \frac{1}{x + \lg^2 x} \cdot \left(x + \lg^2 x\right)'$

 $\frac{y'}{y} = -\frac{\ln\left(x + \operatorname{tg}^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \operatorname{tg}^2 x} \cdot \left(1 + 2\operatorname{tg} x \cdot (\operatorname{tg} x)'\right)$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$(\circ))' = \frac{1}{2}$$

 $(\ln x)' = \frac{1}{x} \left| (\operatorname{ctg} x)' = -\frac{1}{\sin^2 x} \right|$

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

 $tg^2 x = (tg x)^2$

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

10/20

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$
$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x}$$

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$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$
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$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

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$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$y' = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) \middle/ \cdot y$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) / \cdot y$$

$$y' = \begin{bmatrix} \\ \end{bmatrix}$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) / \cdot y$$

$$y' = \left[\frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right)\right]$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

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$$y' = \left[\frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) - \right]$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) / \cdot y$$

$$y' = \left[\frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) - \frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x}\right]$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) / \cdot y$$

$$y' = \left| \frac{\operatorname{ctg} x}{x + \operatorname{tg}^2 x} \cdot \left(1 + \frac{2 \operatorname{tg} x}{\cos^2 x} \right) - \frac{\ln \left(x + \operatorname{tg}^2 x \right)}{\sin^2 x} \right| \cdot y$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) / \cdot y$$

$$y' = \left[\frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) - \frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x}\right] \cdot y$$

v' =

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) / \cdot y$$

$$y' = \left[\frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) - \frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x}\right] \cdot y$$

 $y' = \left| \frac{\operatorname{ctg} x}{x + \operatorname{tg}^2 x} \cdot \left(1 + \frac{2 \operatorname{tg} x}{\cos^2 x} \right) - \frac{\ln \left(x + \operatorname{tg}^2 x \right)}{\sin^2 x} \right|$

$$y = \left(x + \mathsf{tg}^2 x\right)^{\mathsf{ctg}\,x}$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

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$$y' = \left[\frac{\operatorname{ctg} x}{x + \operatorname{tg}^2 x} \cdot \left(1 + \frac{2 \operatorname{tg} x}{\cos^2 x} \right) - \frac{\ln \left(x + \operatorname{tg}^2 x \right)}{\sin^2 x} \right] \cdot y$$

$$y' = \left| \frac{\operatorname{ctg} x}{x + \operatorname{tg}^2 x} \cdot \left(1 + \frac{2 \operatorname{tg} x}{\cos^2 x} \right) - \frac{\ln \left(x + \operatorname{tg}^2 x \right)}{\sin^2 x} \right| \cdot$$

$$y = \left(x + \mathsf{tg}^2 \, x\right)^{\mathsf{ctg} \, x}$$

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$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) / \cdot y$$

$$y' = \left[\frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) - \frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x}\right] \cdot y$$

$$y' = \left[\frac{\operatorname{ctg} x}{x + \operatorname{tg}^2 x} \cdot \left(1 + \frac{2\operatorname{tg} x}{\cos^2 x} \right) - \frac{\ln\left(x + \operatorname{tg}^2 x \right)}{\sin^2 x} \right] \cdot \left(x + \operatorname{tg}^2 x \right)^{\operatorname{ctg} x}$$

$$y = \left(x + \mathsf{tg}^2 \, x\right)^{\mathsf{ctg} \, x}$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + 2\lg x \cdot (\lg x)'\right)$$

$$\frac{y'}{y} = -\frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x} + \frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) / \cdot y$$

$$y' = \left[\frac{\operatorname{ctg} x}{x + \lg^2 x} \cdot \left(1 + \frac{2\lg x}{\cos^2 x}\right) - \frac{\ln\left(x + \lg^2 x\right)}{\sin^2 x}\right] \cdot y$$

$$y' = \left[\frac{\operatorname{ctg} x}{x + \operatorname{tg}^2 x} \cdot \left(1 + \frac{2\operatorname{tg} x}{\cos^2 x} \right) - \frac{\ln\left(x + \operatorname{tg}^2 x \right)}{\sin^2 x} \right] \cdot \left(x + \operatorname{tg}^2 x \right)^{\operatorname{ctg} x}$$

šesti zadatak

Zadatak 6

Odredite derivaciju funkcije

$$y=\frac{\sqrt{x+2}}{\sqrt[3]{x+1}\cdot(x+3)^5}.$$

Zadatak 6

Odredite derivaciju funkcije

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}.$$

Rješenje

 Funkciju možemo derivirati direktno koristeći pravila za derivaciju kvocijenta, produkta i složene funkcije.

Zadatak 6

Odredite derivaciju funkcije

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}.$$

Rješenje

- Funkciju možemo derivirati direktno koristeći pravila za derivaciju kvocijenta, produkta i složene funkcije.
- Međutim, u ovom slučaju logaritamska derivacija znatno olakšava postupak deriviranja.

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

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

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

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

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

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

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

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

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

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

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

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

$$\ln y =$$

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

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

$$\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

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

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

$$\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

$$ln y =$$

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

$$\log_a \frac{x}{y} = \log_a x - \log_a y$$

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

$$\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

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

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

 $\log_a \frac{x}{y} = \log_a x - \log_a y$

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln x$$

$$\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

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

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

 $\log_a \frac{x}{y} = \log_a x - \log_a y$

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

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

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln x$$

$$\log_a \frac{x}{y} = \log_a x - \log_a y$$

$$\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

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

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+2)^{\frac{1}{2}}} /$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

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

$$ln y =$$

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

 $\log_a \frac{x}{v} = \log_a x - \log_a y$

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln x$$

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

 $\log_a \frac{x}{y} = \log_a x - \log_a y$

 $\log_a(xy) = \log_a x + \log_a y$

$$\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

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

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

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

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

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

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

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

$$\ln y = \ln (x+2)^{\frac{1}{2}} - \ln (x+1)^{\frac{1}{3}} - \ln (x+3)^{5}$$

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln x$$

$$y = \frac{(x+2)^2}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln x$$

$$\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

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

$$\ln y = \ln (x+2)^{\frac{1}{2}} - \ln (x+1)^{\frac{1}{3}} - \ln (x+3)^{5}$$

$$\ln y =$$

 $\log_a \frac{x}{y} = \log_a x - \log_a y$

 $\log_2(xy) = \log_2 x + \log_2 y$

 $\log_a x^k = k \log_a x$

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

13 / 20

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

$$y = \frac{1}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \dots$$

$$\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

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

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

 $\ln y = \ln (x+2)^{\frac{1}{2}} - \ln (x+1)^{\frac{1}{3}} - \ln (x+3)^{5}$

$$\ln y = \frac{1}{2} \ln \left(x + 2 \right)$$

$$\log_a(xy) = \log_a x + \log_a y$$

 $\log_a \frac{x}{y} = \log_a x - \log_a y$

$$\log_a x^k = k \log_a x$$

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

13 / 20

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

$$y = \frac{(x+2)}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln x$$

$$\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

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

$$\ln y = \ln (x+2)^{\frac{1}{2}} - \ln (x+1)^{\frac{1}{3}} - \ln (x+3)^{5}$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1)$$

 $\log_a \frac{x}{v} = \log_a x - \log_a y$

 $\log_2(xy) = \log_2 x + \log_2 y$

 $\log_a x^k = k \log_a x$

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

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

 $\log_a \frac{x}{y} = \log_a x - \log_a y$

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

$$\log_a(xy) = \log_a x + \log_a y$$
$$\log_a x^k = k \log_a x$$

$$\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$$

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

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3)$$

 $\ln y = \ln (x+2)^{\frac{1}{2}} - \ln (x+1)^{\frac{1}{3}} - \ln (x+3)^{5}$

13 / 20

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$(x+2)^{\frac{1}{2}}$$

$$|\log_a \frac{x}{y} = \log_a x - \log_a y$$

$$y = \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5} / \ln$$

$$\log_a(xy) = \log_a x + \log_a y$$
$$\log_a x^k = k \log_a x$$

 $\ln y = \ln \frac{(x+2)^{\frac{1}{2}}}{(x+1)^{\frac{1}{3}} \cdot (x+3)^5}$

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

 $\ln y = \ln (x+2)^{\frac{1}{2}} - \ln (x+1)^{\frac{1}{3}} - \ln (x+3)^{5}$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

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

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$y'=\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

 $\frac{1}{v} \cdot y'$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{v} \cdot y' =$$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{\mathsf{v}}\cdot\mathsf{y}'=\frac{1}{2}\cdot$$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{2} \frac{1}{3} \frac{1}$$

 $\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2}$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{3} \frac{1}$$

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

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$2^{m(x+2)} 3^{m(x+1)} 3^{m(x+4)} / d$$

 $\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot (x+2)' - \frac{1}{3} \cdot \frac{1}{x+2} \cdot (x+2)' = \frac{1}{3} \cdot \frac{1}{3}$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

 $\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot (x+2)' - \frac{1}{3} \cdot \frac{1}{x+1}$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

 $\frac{1}{v} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot (x+2)' - \frac{1}{3} \cdot \frac{1}{x+1} \cdot (x+1)'$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{v} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot (x+2)' - \frac{1}{3} \cdot \frac{1}{x+1} \cdot (x+1)' - 5$$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot (x+2)' - \frac{1}{3} \cdot \frac{1}{x+1} \cdot (x+1)' - 5 \cdot \frac{1}{x+3}$$

$$\frac{1}{x}$$

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

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot (x+2)' - \frac{1}{3} \cdot \frac{1}{x+1} \cdot (x+1)' - 5 \cdot \frac{1}{x+3} \cdot (x+3)'$$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{2} = \frac{1}{3} = \frac{1}$$

$$\frac{1}{v} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot (x+2)' - \frac{1}{3} \cdot \frac{1}{x+1} \cdot (x+1)' - 5 \cdot \frac{1}{x+3} \cdot (x+3)'$$

 $\frac{y'}{v} =$

$$\frac{1}{x}$$

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

$$(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{v} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot (x+2)' - \frac{1}{3} \cdot \frac{1}{x+1} \cdot (x+1)' - 5 \cdot \frac{1}{x+3} \cdot (x+3)'$$

 $\frac{y'}{v} = \frac{1}{2x+4}$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

 $\frac{y'}{v} = \frac{1}{2x+4}$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

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

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)'}_{x+2} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot (x+1)' - 5 \cdot \frac{1}{x+3} \cdot (x+3)'$$

 $\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3}$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

 $\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3}$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{1}{dx}$$

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)' - \frac{1}{3} \cdot \frac{1}{x+1} \cdot (x+1)' - 5 \cdot \frac{1}{x+3} \cdot (x+3)'}_{\text{dx}}$$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)'}_{} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot \underbrace{(x+1)'}_{} - 5 \cdot \frac{1}{x+3} \cdot (x+3)'$$

 $\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3}$

3 (
$$x + 2$$
) $\frac{1}{x} \cdot \frac{1}{x} \cdot \frac{1}{x} \cdot (x + 1)' = 1$

$$\frac{1}{x}$$

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

$$(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

 $\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3}$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\lim y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - \frac{1}{3} \ln (x+3) / \frac{1}{dx}$$

$$\frac{1}{x+2} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)'}_{x+3} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot \underbrace{(x+1)'}_{x+3} - \frac{1}{x+3} \cdot \underbrace{(x+1)'}_{x+3} - \frac{1}{x+3} \cdot \underbrace{(x+2)'}_{x+3} - \underbrace{(x+2)'}_{x+3}$$

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)'}_{=1} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot \underbrace{(x+1)'}_{=1} - 5 \cdot \frac{1}{x+3} \cdot \underbrace{(x+3)'}_{=1}$$

$$\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3} / y$$

$$\frac{1}{x}$$

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

$$(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\lim y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - \frac{5}{3} \ln (x+3) / \frac{1}{dx}$$

$$\frac{1}{3} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot (x+2)' - \frac{1}{3} \cdot \frac{1}{x+1} \cdot (x+1)' - \frac{1}{3} \cdot \frac{1}{x+1}$$

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)'}_{=1} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot \underbrace{(x+1)'}_{=1} - 5 \cdot \frac{1}{x+3} \cdot \underbrace{(x+3)'}_{=1}$$

$$y = \frac{1}{2} + 2 + 2 = \frac{(x+2)}{=1} + 3 + 1 = \frac{(x+1)}{=1} + 3 + 3 = \frac{(x+3)}{=1}$$

$$\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3} / y$$

$$\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3} / y$$

$$\frac{1}{x} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)'}_{=1} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot \underbrace{(x+1)'}_{=1} - 5$$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{dx}{dx}$$

$$\ln y' = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{dx}{dx}$$

$$v' = \frac{1}{2} \cdot \frac{1}{3} \cdot (x+2)' - \frac{1}{4} \cdot \frac{1}{3} \cdot (x+1)' - 5$$

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)'}_{=1} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot \underbrace{(x+1)'}_{=1} - 5 \cdot \frac{1}{x+3} \cdot \underbrace{(x+3)'}_{=1}$$

$$\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3} / y$$

$$y' = \left(\frac{1}{2v + 4} - \frac{1}{2v + 2} - \frac{5}{v + 3}\right)$$

$$y' = \left(\frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3}\right)$$

$$y = 2x + 4 = 3x + 3 = x + 3 / y$$

$$\frac{1}{x}$$

$$(\ln x)' = \frac{1}{x}$$
 $(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{3}{dx}$$

$$y' = \frac{1}{2} \ln (x+2) + \frac{1}{3} \ln (x+1) + \frac{1}{3} \ln (x$$

$$\frac{1}{2} = \frac{1}{3} = \frac{1}{(x+2)^2} = \frac{1}{3} = \frac{1}{(x+1)^2} = \frac{1}{5}$$

$$\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3} / y$$

$$y' = \left(\frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3}\right) \cdot y$$

$$\frac{1}{x}$$

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

$$(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{1}{dx}$$

$$y' = \frac{1}{2} \cdot \frac{1}{2} \cdot$$

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

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)'}_{} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot \underbrace{(x+1)'}_{} - 5 \cdot \frac{1}{x+3} \cdot \underbrace{(x+3)'}_{}$$

$$\underbrace{(x+2)'}_{=1} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot \underbrace{(x+1)'}_{=1} - 5 \cdot \frac{1}{x+3} \cdot \underbrace{(x+1)'}_{=1}$$

$$\frac{y'}{x} = \frac{1}{2} \cdot \frac{(x+2)}{x+2} = \frac{3}{3} \cdot \frac{(x+1)}{x+1} = \frac{3}{3} \cdot \frac{(x+3)}{x+3} = \frac{3}{2} \cdot \frac{(x+3)}{x+3} = \frac{3}{$$

$$\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3} / y$$

$$y = \frac{\sqrt{x+2}}{\sqrt{x+2}}$$

$$\frac{y}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{1}{x+3} / y$$

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y = 2x + 4 = 3x + 3 = x + 3 / 3$$

$$y' = \left(\frac{1}{2x + 4} - \frac{1}{3x + 3} - \frac{5}{x + 3}\right) \cdot y$$

$$y = \frac{\sqrt{x + 2}}{\sqrt[3]{x + 1} \cdot (x + 3)^5}$$

$$(2x+4)$$
 $3x+3$ $x+3$

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

$$\ln (x + 2) \qquad \frac{1}{x} \ln (x + 1) \qquad \text{Fig.}(x + 2) \qquad \frac{1}{x} \ln (x + 2) \qquad \frac{1}{x} \ln (x + 3) \qquad \frac{1}{x}$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)'}_{=1} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot \underbrace{(x+1)'}_{=1} - 5 \cdot \frac{1}{x+3} \cdot \underbrace{(x+3)'}_{=1}$$

$$\frac{y'}{x+2} - \frac{1}{x+2} - \frac{1}{x+2} - \frac{5}{x+3} = \frac{5}{x+3} - \frac{5}{x+3} = \frac{5}{x+3}$$

$$\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3} / y$$

$$y' = \left(\frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3}\right) \cdot y$$

$$y = \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

$$y' = \left(\frac{1}{2x+4} - \frac{1}{3x+3} - \frac{3}{x+3}\right) \cdot y$$
$$y' = \left(\frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3}\right) \cdot \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

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

$$(\ln (\text{nešto}))' = \frac{1}{\text{nešto}} \cdot (\text{nešto})'$$

$$\ln y = \frac{1}{2} \ln (x+2) - \frac{1}{3} \ln (x+1) - 5 \ln (x+3) / \frac{d}{dx}$$

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

$$y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot (x+2)' - \frac{1}{3} \cdot \frac{1}{x+1} \cdot (x+1)' - 5$$

$$\frac{1}{y} \cdot y' = \frac{1}{2} \cdot \frac{1}{x+2} \cdot \underbrace{(x+2)'}_{} - \frac{1}{3} \cdot \frac{1}{x+1} \cdot \underbrace{(x+1)'}_{} - 5 \cdot \frac{1}{x+3} \cdot \underbrace{(x+3)'}_{}$$

$$\frac{y'}{x} = \frac{1}{2} \cdot \frac{x+2}{x+2} \cdot \underbrace{(x+2)}_{=1} - \frac{1}{3} \cdot \frac{x+1}{x+1} \cdot \underbrace{(x+1)}_{=1} - \frac{5}{x+3} \cdot \underbrace{(x+1)}_{=1}$$

$$\frac{y'}{y} = \frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3} / y$$

$$y = \frac{\sqrt{x+2}}{\sqrt{x+2}} / y$$

$$y = 2x + 4 = 3x + 3 = x + 3 / y$$

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$$y = \left(\frac{1}{2x+4} - \frac{1}{3x+3} - \frac{1}{x+3}\right) \cdot y$$
$$y' = \left(\frac{1}{2x+4} - \frac{1}{3x+3} - \frac{5}{x+3}\right) \cdot \frac{\sqrt{x+2}}{\sqrt[3]{x+1} \cdot (x+3)^5}$$

sedmi zadatak

Zadatak 7

Odredite jednadžbu tangente i normale na krivulju

$$\ln(xy) = x^3y^3 - 1$$

u točki T(1,1).

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Rješenje

ullet 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

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Funkcija y = y(x) je zadana implicitno

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$$\ln(xy) = x^3y^3 - 1$$

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Odredite jednadžbu tangente i normale na krivulju

$$\ln(xy) = x^3y^3 - 1$$

 $u \text{ točki } T(1,1)$: $\ln(1 \cdot 1) = 1^3 \cdot 1^3 - 1$

Rješenje

ullet Jednadžba tangente na graf funkcije y=f(x) u točki $\mathcal{T}_0(x_0,y_0)$

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Odredite jednadžbu tangente i normale na krivulju

$$\ln(xy) = x^{3}y^{3} - 1$$

$$u \text{ točki } T(1,1).$$

$$\ln(1 \cdot 1) = 1^{3} \cdot 1^{3} - 1 \longrightarrow 0 = 0$$

Rješenje

ullet Jednadžba tangente na graf funkcije y=f(x) u točki $\mathcal{T}_0(x_0,y_0)$

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Odredite jednadžbu tangente i normale na krivulju

$$\ln(xy) = x^3y^3 - 1$$

$$u \text{ točki } T(1,1).$$

$$\ln(1\cdot 1) = 1^3 \cdot 1^3 - 1$$

$$zadana \text{ točka}$$
pripada krivulji
$$0 = 0$$

Rješenje

ullet Jednadžba tangente na graf funkcije y=f(x) u točki $\mathcal{T}_0(x_0,y_0)$

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$$n \dots y - y_0 = k_n \cdot (x - x_0)$$

$$\ln\left(xy\right) = x^3y^3 - 1$$

$$\ln\left(xy\right) = x^3y^3 - 1\left/\frac{\mathrm{d}}{\mathrm{d}x}\right.$$

$$\ln(xy) = x^3y^3 - 1 / \frac{\mathrm{d}}{\mathrm{d}x}$$

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

$$\ln\left(xy\right) = x^3y^3 - 1\left/\frac{\mathrm{d}}{\mathrm{d}x}\right|$$

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$$\ln(xy) = x^3y^3 - 1 / \frac{d}{dx}$$
$$\frac{1}{xy} \cdot (xy)'$$

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

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 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \quad \left(\ln x\right)' = \frac{1}{x}$

 $\frac{1}{xy} \cdot (xy)' =$

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

$$\ln(xy) = x^3y^3 - 1 / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{xy} \cdot (xy)' = 3x^2$$

20

$$\ln(xy) = x^3y^3 - 1 / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot$$

$$\ln(xy) = x^3y^3 - 1 / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3$$

$$\ln(xy) = x^3y^3 - 1 / \frac{d}{dx}$$

$$\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3$$

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

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \quad \left(\ln x\right)' = \frac{1}{x} \quad \left(x^n\right)' = nx^{n-1}$$

$$\ln(xy) = x^3y^3 - 1 / \frac{d}{dx}$$

$$\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3 \cdot 3y^2$$

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

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \left[\ln x\right]' = \frac{1}{x} \left[(x^n)' = nx^{n-1}\right]$

$$\ln(xy) = x^3y^3 - 1 / \frac{\mathrm{d}}{\mathrm{d}x}$$

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

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

$$\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3 \cdot 3y^2 \cdot y'$$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \left[(\ln x)' = \frac{1}{x} \right] \left[(x^n)' = nx^{n-1} \right]$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx} \frac{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx} \frac{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

 $\left(\ln\left(\mathsf{ne\breve{s}to}\right)\right)' = \frac{1}{\mathsf{ne\breve{s}to}} \cdot \left(\mathsf{ne\breve{s}to}\right)' \left| \left(\ln x\right)' = \frac{1}{x} \right| \left(x^n)' = nx^{n-1}\right|$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx} \frac{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$$

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$$\frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1}{xy}$$

$$\ln(xy) = x^3y^3 - 1 / \frac{\mathrm{d}}{\mathrm{d}x}$$

$$\frac{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}{((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$

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$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx} \frac{(uv)'(x) = u'(x) \cdot v(x) + u(x) \cdot v'(x)}{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1 \cdot y +}{xy}$$

 $\left(\ln\left(\mathsf{ne\breve{s}to}\right)\right)' = \frac{1}{\mathsf{ne\breve{s}to}} \cdot \left(\mathsf{ne\breve{s}to}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$

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$$\frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1 \cdot y + x}{xy}$$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \quad \left(\ln x\right)' = \frac{1}{x} \quad \left(x^n\right)' = nx^{n-1}$

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$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3$$

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$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \quad \left(\ln x\right)' = \frac{1}{x} \quad \left(x^n\right)' = nx^{n-1}$$

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$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$
$$y + xy'$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \quad \left(\ln x\right)' = \frac{1}{x} \quad \left(x^n\right)' = nx^{n-1}$$

$$\ln(xy) = x^3y^3 - 1 / \frac{d}{dx}$$

$$\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3 \cdot 3y^2 \cdot y' - 0$$

$$\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3 \cdot 3y^2 \cdot y' - 0$$

$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$
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 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \quad \left(\ln x\right)' = \frac{1}{x} \quad \left(x^n\right)' = nx^{n-1}$

$$\ln(xy) = x^3y^3 - 1 / \frac{d}{dx}$$

$$\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3 \cdot 3y^2 \cdot y' - 0$$

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$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$

$$y + xy' = 3x^3y^4$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx} \frac{(uv)(x) - u(x) \cdot v(x) + u(x) \cdot v(x)}{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$

$$y + xy' = 3x^3y^4 +$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx} \frac{(uv)(x) - u(x) \cdot v(x) + u(x) \cdot v(x)}{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

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$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx} \frac{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}{((\text{nešto})^{n})' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0}$$

$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$
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$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx} \frac{(xy) - 2(x) + 2(x) + 2(x)}{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'} \frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$
$$y + xy' = 3x^3y^4 + 3x^4y^3y'$$

$$y + xy' = 3x^3y^4 + 3x^4y^3y'$$
$$xy' - 3x^4y^3y'$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$$

$$\ln(xy) = x^3y^3 - 1 / \frac{d}{dx}$$

$$\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3 \cdot 3y^2 \cdot y' - 0$$

$$\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3 \cdot 3y^2 \cdot y' - 0$$

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$$y + xy' = 3x^{3}y^{4} + 3x^{4}y^{3}y'$$
$$xy' - 3x^{4}y^{3}y' =$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx} \frac{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$

$$\frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$
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$$y + xy' = 3x^3y^4 + 3x^4y^3y'$$
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$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx} \frac{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}{((\text{nešto})^{n})' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'}$$

$$\frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

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$$y + xy' = 3x^{4}y^{4} + 3x^{4}y^{4}y$$
$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$$

 $\ln(xy) = x^3y^3 - 1 / \frac{\mathrm{d}}{\mathrm{d}x}$ $ig((\mathsf{ne ext{ iny sto}})^nig)'=\mathit{n}(\mathsf{ne ext{ iny sto}})^{n-1}\cdot(\mathsf{ne ext{ iny sto}})'$ $\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3 \cdot 3y^2 \cdot y' - 0$

$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$

$$y + xy' = 3x^3y^4 + 3x^4y^3y'$$

$$xy' - 3x^4y^3y' = 3x^3y^4 - y$$

$$y + xy' = 3x^{4}y^{3} + 3x^{4}y^{4}$$

$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$
() y'

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \quad \left(\ln x\right)' = \frac{1}{x} \quad \left(x^n\right)' = nx^{n-1}$$

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

$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$
$$y + xy' = 3x^3y^4 + 3x^4y^3y'$$

$$+xy' = 3x^{3}y^{4} + 3x^{4}y^{3}y'$$

$$y' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$

 $xy' - 3x^4y^3y' = 3x^3y^4 - y$ $(x-3x^4y^3)y'$

$$xy' - 3x^4y^3y' = 3x^3y^4 - y$$

$$(x - 3x y)y$$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \left[\ln x\right]' = \frac{1}{x} \left[(x^n)' = nx^{n-1}\right]$

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 $xy' - 3x^4y^3y' = 3x^3y^4 - y$ $(x-3x^4y^3)y'=$

$$(x - 3x y)y =$$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \left[\ln x\right]' = \frac{1}{x} \left[(x^n)' = nx^{n-1}\right]$

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$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

 $(x-3x^4y^3)y'=3x^3y^4-y$

$$xy' - 3x^4y^3y' = 3x^3y^4 - y$$
$$(x - 3x^4y^3)y' = 3x^3y^4 - y$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)'$$
 $\left(\ln x\right)' = \frac{1}{x}$ $\left(x^n\right)' = nx^{n-1}$

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 $xy' - 3x^4y^3y' = 3x^3y^4 - y$

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

$$-3x^{4}y^{3} y' = 3x^{3}y' - y$$
$$-3x^{4}y^{3} y' = 3x^{3}y^{4} - y$$

$$(x - 3x^4y^3)y' = 3x^3y^4 - y$$

$$(x - 3x^4y^3)y' = 3x^3y^4 - y$$

$$(x - 3x^4y^3)y' = 3x^3y^4 - y$$

$$y' = ----$$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \left[\ln x\right]' = \frac{1}{x} \left[(x^n)' = nx^{n-1}\right]$

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$$xy' - 3x^4y^3y' = 3x^3y^4 - y$$

$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$
$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$
$$y' = \frac{3x^{3}y^{4} - y}{2}$$

$$xy' - 3x^4y^3y' = 3x^3y^4 - y$$
$$(x - 3x^4y^3)y' = 3x^3y^4 - y$$

 $\ln(xy) = x^3y^3 - 1 / \frac{\mathrm{d}}{\mathrm{d}x}$ $\left((\mathsf{ne imesto})^n\right)' = n(\mathsf{ne imesto})^{n-1} \cdot (\mathsf{ne imesto})'$ $\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3 \cdot 3y^2 \cdot y' - 0$

$$\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$$
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$$xy' - 3x^4y^3y' = 3x^3y^4 - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$
$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$(x - 3x^4y^3)y' = 3x^3y^4 - y$$

$$(x - 3x^4y^3)y' = 3x^3y^4 - y$$

$$(x - 3x^4y^3)y' = 3x^3y^4 - y$$

$$y' = \frac{3x^3y^4 - y}{x - 3x^4y^3}$$

$$y' = \frac{3x^3y^4 - y}{x - 3x^4y^3}$$

$$x - 3x^4y^3$$

$$\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \qquad \left(\ln x\right)' = \frac{1}{x} \qquad \left(x^n\right)' = nx^{n-1}$$

 $\ln(xy) = x^3y^3 - 1 / \frac{\mathrm{d}}{\mathrm{d}x}$ $((\text{nešto})^n)' = n(\text{nešto})^{n-1} \cdot (\text{nešto})'$ $\frac{1}{xy} \cdot (xy)' = 3x^2 \cdot y^3 + x^3 \cdot 3y^2 \cdot y' - 0$ $\frac{1 \cdot y + xy'}{xy} = 3x^2y^3 + 3x^3y^2y' / \cdot xy$

$$y + xy' = 3x^{3}y^{4} + 3x^{4}y^{3}y'$$

$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$(x - 3x^4y^3)y' = 3x^3y^4 - y$$
$$y' = \frac{3x^3y^4 - y}{y' - y}$$

$$(x - 3x^4y^3)y' = 3x^3y^4 - y$$
$$y' = \frac{3x^3y^4 - y}{x - 3x^4y^3}$$

$$y' = \frac{3x^3y^4 - y}{x - 3x^4y^3}$$

 $\left(\ln\left(\text{nešto}\right)\right)' = \frac{1}{\text{nešto}} \cdot \left(\text{nešto}\right)' \quad \left(\ln x\right)' = \frac{1}{x} \quad \left(x^n\right)' = nx^{n-1}$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx}$$

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

$$\frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1 \cdot y + xy'}{xy} = 3x^{2}y^{3} + 3x^{3}y^{2}y' / \cdot xy$$

$$y + xy' = 3x^{3}y^{4} + 3x^{4}y^{3}y'$$

$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$y' = \frac{3x^{3}y^{4} - y}{x - 3x^{4}y^{3}}$$

$$(\ln(nešto))' = \frac{1}{nešto} \cdot (nešto)'$$

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

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

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

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx}$$

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

$$\frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

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$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$y'(x) = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$y' = \frac{3x^{3}y^{4} - y}{x - 3x^{4}y^{3}}$$

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

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

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

$$y'(x) = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

$$x = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

$$x = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

$$x = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

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

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx}$$

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

$$\frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1 \cdot y + xy'}{xy} = 3x^{2}y^{3} + 3x^{3}y^{2}y' / \cdot xy$$

$$y'(x) = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

$$k_{t} = y'(x_{0})$$

$$y + xy' = 3x^{3}y^{4} + 3x^{4}y^{3}y'$$

$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$y' = \frac{3x^{3}y^{4} - y}{x - 3x^{4}y^{3}}$$

$$(\ln(nešto))' = \frac{1}{nešto} \cdot (nešto)'$$

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

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

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

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx}$$

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

$$\frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1}{xy} \cdot (xy)' = 3x^{2}y^{3} + 3x^{3}y^{2}y' / \cdot xy$$

$$\frac{1 \cdot y + xy'}{xy} = 3x^{2}y^{3} + 3x^{3}y^{2}y' / \cdot xy$$

$$y'(x) = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

$$k_{t} = y'(x_{0}) = \frac{1}{x^{2}}$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$y' = \frac{3x^{3}y^{4} - y}{x - 3x^{4}y^{3}}$$

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

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$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx}$$

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

$$\frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1 \cdot y + xy'}{xy} = 3x^{2}y^{3} + 3x^{3}y^{2}y' / \cdot xy$$

$$y'(x) = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

$$k_{t} = y'(x_{0}) = \frac{1}{x}$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$y'(x) = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

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$$y'(x) = \frac{3x^$$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx}$$

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

$$\frac{1}{xy} \cdot (xy)' = 3x^{2} \cdot y^{3} + x^{3} \cdot 3y^{2} \cdot y' - 0$$

$$\frac{1 \cdot y + xy'}{xy} = 3x^{2}y^{3} + 3x^{3}y^{2}y' / \cdot xy$$

$$y'(x) = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

$$k_{t} = y'(x_{0}) = \frac{3x_{0}^{3}y_{0}^{4} - y_{0}}{x - 3x^{4}y^{3}y'}$$

$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

$$y'(x) = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

$$k_{t} = y'(x_{0}) = \frac{3x_{0}^{3}y_{0}^{4} - y_{0}}{x - 3x^{4}y^{3}}$$

$$y_{0} = y(x_{0}) \quad T(1, 1)$$

$$(\ln(nešto))' = \frac{1}{nešto} \cdot (nešto)'$$

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

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

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx}$$

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$$y'(x) = \frac{3x^{3}y(x)^{4} - y(x)}{x - 3x^{4}y(x)^{3}}$$

$$k_{t} = y'(x_{0}) = \frac{3x_{0}^{3}y_{0}^{4} - y_{0}}{x_{0} - 3x_{0}^{4}y_{0}^{3}}$$

$$y + xy' = 3x^{3}y^{4} + 3x^{4}y^{3}y'$$

$$xy' - 3x^{4}y^{3}y' = 3x^{3}y^{4} - y$$

$$(x - 3x^{4}y^{3})y' = 3x^{3}y^{4} - y$$

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$$16/20$$

$$\ln(xy) = x^{3}y^{3} - 1 / \frac{d}{dx}$$

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

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$$k_{t}$$

• Jednadžba tangente

$$y-y_0=k_t\cdot(x-x_0)$$

$$y - y_0 = k_t \cdot (x - x_0)$$

 $y - 1 = -1 \cdot (x - 1)$

$$y - y_0 = k_t \cdot (x - x_0)$$

 $y - 1 = -1 \cdot (x - 1)$
 $y - 1 = -x + 1$

$$y - y_0 = k_t \cdot (x - x_0)$$

 $y - 1 = -1 \cdot (x - 1)$
 $y - 1 = -x + 1$
 $y = -x + 2$

$$x_0 = 1$$

$$y_0 = 1$$

$$y_0 = 1 \qquad k_t = -1 \qquad k_n = 1$$

$$k_n = 1$$

$$y - y_0 = k_t \cdot (x - x_0)$$

 $y - 1 = -1 \cdot (x - 1)$
 $y - 1 = -x + 1$
 $t \dots y = -x + 2$

$$x_0 = 1$$

$$y_0 = 1$$

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Jednadžba tangente

$$y - y_0 = k_t \cdot (x - x_0)$$

 $y - 1 = -1 \cdot (x - 1)$
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$$y-y_0=k_n\cdot(x-x_0)$$

$$x_0 = 1$$

$$y_0 = 1 \qquad k_t = -1 \qquad k_n = 1$$

$$y - y_0 = k_t \cdot (x - x_0)$$

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$$y - y_0 = k_n \cdot (x - x_0)$$

 $y - 1 = 1 \cdot (x - 1)$

$$|x_0 = 1|$$
 $|y_0 = 1|$ $|k_t = -1|$ $|k_n = 1|$

$$y_0 = 1$$

$$k_t = -1$$

$$k_n = 1$$

$$y - y_0 = k_t \cdot (x - x_0)$$
$$y - 1 = -1 \cdot (x - 1)$$
$$y - 1 = -x + 1$$
$$t \dots y = -x + 2$$

$$y - y_0 = k_n \cdot (x - x_0)$$

 $y - 1 = 1 \cdot (x - 1)$
 $y - 1 = x - 1$

$$x_0 = 1$$

 $y_0 = 1$ $k_t = -1$ $k_n = 1$

Jednadžba tangente

$$y - y_0 = k_t \cdot (x - x_0)$$

 $y - 1 = -1 \cdot (x - 1)$
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$$y - y_0 = k_n \cdot (x - x_0)$$
$$y - 1 = 1 \cdot (x - 1)$$
$$y - 1 = x - 1$$
$$y = x$$

$$x_0 = 1$$

$$y_0 = 1$$

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 $k_t = -1$ $k_n = 1$

$$k_n = 1$$

$$y - y_0 = k_t \cdot (x - x_0)$$

$$y - 1 = -1 \cdot (x - 1)$$

$$y - 1 = -x + 1$$

$$t \dots y = -x + 2$$

$$y - y_0 = k_n \cdot (x - x_0)$$
$$y - 1 = 1 \cdot (x - 1)$$
$$y - 1 = x - 1$$
$$n \dots y = x$$

$$x_0 = 1$$

$$y_0 = 1$$
 $k_t = -1$ $k_n = 1$

$$y - y_0 = k_t \cdot (x - x_0)$$

$$y - 1 = -1 \cdot (x - 1)$$

$$y - 1 = -x + 1$$

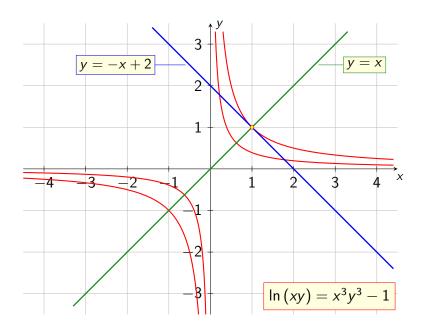
$$t \dots y = -x + 2$$

$$y - y_0 = k_n \cdot (x - x_0)$$

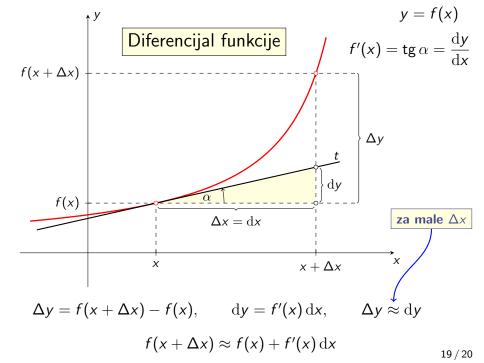
$$y - 1 = 1 \cdot (x - 1)$$

$$y - 1 = x - 1$$

$$n \dots y = x$$



osmi zadatak



 $f(x_0+\mathrm{d}x)\approx f(x_0)+f'(x_0)\,\mathrm{d}x$

Pomoću diferencijala približno izračunajte $\sqrt{6.26^3}$.

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Pomoću diferencijala približno izračunajte $\sqrt{6.26^3}$.

•
$$f(x) = \sqrt{x^3}$$

$$f(x_0+\mathrm{d}x)\approx f(x_0)+f'(x_0)\,\mathrm{d}x$$

Pomoću diferencijala približno izračunajte $\sqrt{6.26^3}$.

$$f(x) = \sqrt{x^3} = x^{\frac{3}{2}}$$

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Pomoću diferencijala približno izračunajte $\sqrt{6.26^3}$.

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$$f(x) = \sqrt{x^3} = x^{\frac{3}{2}}, \quad f'(x) =$$

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Pomoću diferencijala približno izračunajte $\sqrt{6.26^3}$.

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

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$$f(x) = \sqrt{x^3} = x^{\frac{3}{2}}, \quad f'(x) =$$

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$$f(x) = \sqrt{x^3} = x^{\frac{3}{2}}, \quad f'(x) = \frac{3}{2}x^{\frac{1}{2}}$$

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•
$$x_0 = 6.25$$

$$f(x_0+\mathrm{d}x)\approx f(x_0)+f'(x_0)\,\mathrm{d}x$$

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

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$$f(x) = \sqrt{x^3} = x^{\frac{3}{2}}, \quad f'(x) = \frac{3}{2}x^{\frac{1}{2}} = \frac{3}{2}\sqrt{x}$$

•
$$x_0 = 6.25$$
, $dx = 0.01$

$$f(x_0+\mathrm{d}x)\approx f(x_0)+f'(x_0)\,\mathrm{d}x$$

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$$x_0 = 6.25$$
, $dx = 0.01$, $x_0 + dx = 6.26$

$$f(x_0+\mathrm{d}x)\approx f(x_0)+f'(x_0)\,\mathrm{d}x$$

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$$x_0 = 6.25$$
, $dx = 0.01$, $x_0 + dx = 6.26$

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$$f(x_0) =$$

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$$f(x_0) = f(6.25)$$

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•
$$f(x_0) = f(6.25) = \sqrt{6.25^3} = \sqrt{6.25}^3 = 2.5^3$$

$$f(x_0+\mathrm{d}x)\approx f(x_0)+f'(x_0)\,\mathrm{d}x$$

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$$f(x_0) = f(6.25) = \sqrt{6.25^3} = \sqrt{6.25}^3 = 2.5^3 = 15.625$$

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$$f(6.26)\approx f(6.25)$$

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$$f(6.26) \approx f(6.25) + f'(6.25) \cdot 0.01$$

$$f(x_0+\mathrm{d}x)\approx f(x_0)+f'(x_0)\,\mathrm{d}x$$

Pomoću diferencijala približno izračunajte $\sqrt{6.26^3}$.

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 $f(6.26) \approx$

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$$f(6.26) \approx f(6.25) + f'(6.25) \cdot 0.01$$

 $f(6.26) \approx 15.625 + 3.75 \cdot 0.01$

$$f(x_0+\mathrm{d}x)\approx f(x_0)+f'(x_0)\,\mathrm{d}x$$

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$$f(6.26) \approx f(6.25) + f'(6.25) \cdot 0.01$$

 $f(6.26) \approx 15.625 + 3.75 \cdot 0.01$
 $f(6.26) \approx$

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 $f(6.26) \approx 15.625 + 3.75 \cdot 0.01$
 $f(6.26) \approx 15.6625$

$$f(x_0+\mathrm{d}x)\approx f(x_0)+f'(x_0)\,\mathrm{d}x$$

 $\sqrt{6.26^3} \approx 15.6625$

Pomoću diferencijala približno izračunajte $\sqrt{6.26^3}$.

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

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$$f(x) = \sqrt{x^3} = x^{\frac{3}{2}}$$
, $f'(x) = \frac{3}{2}x^{\frac{1}{2}} = \frac{3}{2}\sqrt{x}$

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Pomoću diferencijala približno izračunajte $\sqrt{6.26^3}$.

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Rješenje

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Domaća zadaća

 $\sqrt{6.23^3} \approx 777$

