EXPONENCIÁLNÍ ROVNICE

1) Řešte v R rovnici:

a) $3^x = \frac{1}{81}$ $\qquad\qquad /K = \{-4\}/$

b) $5^{x+2} = 0{,}04$ $\qquad\qquad /K = \{-4\}/$

c) $4^{x-1} = \frac{1}{8}$ $\qquad\qquad /K = \left\{-\frac{1}{2}\right\}/$

d) $2^{\frac{3}{x-1}} = \frac{1}{64}$ $\qquad\qquad /K = \left\{\frac{1}{2}\right\}/$

e) $\frac{1}{2^{3-x}} = 16$ $\qquad\qquad /K = \{7\}/$

f) $\left(\frac{1}{2}\right)^x = \frac{1}{8}$ $\qquad\qquad /K = \{3\}/$

g) $\left(\frac{1}{7}\right)^{x+1} = \frac{1}{343}$ $\qquad\qquad /K = \{2\}/$

h) $\left(\frac{3}{5}\right)^x = \left(\frac{5}{3}\right)^3$ $\qquad\qquad /K = \{-3\}/$

i) $\left(\frac{3}{5}\right)^{2x-5} = \frac{125}{27}$ $\qquad\qquad /K = \{1\}/$

j) $\left(1 - \frac{3}{5}\right)^{\frac{3}{x-1}} = \frac{25}{4}$ $\qquad\qquad /K = \left\{-\frac{1}{2}\right\}/$

k) $\left(1 - \frac{5}{9}\right)^{\frac{2}{3-2x}} = \left(\frac{9}{4}\right)^{\frac{3}{x-5}}$ $\qquad\qquad /K = \left\{-\frac{1}{4}\right\}/$

l) $2^x = \sqrt[3]{4^x}$ $\qquad\qquad /K = \{0\}/$

m) $\sqrt[3]{2^{2x-3}} = \sqrt[7]{0{,}5^{3-x}}$ $\qquad\qquad /K = \left\{\frac{12}{11}\right\}/$

n) $\sqrt[x]{27^{2x-1}} = \sqrt{9^{5x-2}}$ $\qquad\qquad /K = \{1\}/$

2) Řešte v R rovnici:

a) $2^x \cdot 3^x = 36$ $\qquad\qquad /K = \{2\}/$

b) $\frac{2^x}{3^x} = \frac{4}{9}$ $\qquad\qquad /K = \{2\}/$

c) $\sqrt{2^x} \cdot \sqrt{5^x} = 0{,}01$ $\qquad\qquad /K = \{-4\}/$

d) $4^x \cdot 25^x = 0{,}01 \cdot (10^{3x-1})^2$ $\qquad\qquad /K = \{1\}/$

e) $2^{x+3} = 1$ $\qquad\qquad /K = \{-3\}/$

f) $4^{(x+3)(2-5x)} = 1$ $\qquad\qquad /K = \left\{-3; \frac{2}{5}\right\}/$

3) Řešte v R rovnici:

a) $2^{3x} \cdot 4^{3x-3} = 8^{2x+1}$ $\qquad\qquad /K = \{3\}/$

b) $3^3 \cdot 27^{2x-3} = 81^{3x-5}$ $\qquad\qquad /K = \left\{\frac{7}{3}\right\}/$

c) $(0{,}25)^{2-x} = \frac{256}{2^{x+3}}$ $\qquad\qquad /K = \{3\}/$

d) $\left(\frac{4}{9}\right)^x \cdot \left(\frac{27}{8}\right)^{x-1} = \frac{2}{3}$ $\qquad\qquad /K = \{2\}/$

e) $\left(\frac{4}{25}\right)^{x+3} \cdot \left(\frac{125}{8}\right)^{4x-1} = \frac{5}{2}$ $\qquad\qquad /K = \{1\}/$

f) $\sqrt[x-1]{9^x} \cdot \sqrt[x]{3^{x-3}} = 27$ $\qquad\qquad /K = \{3\}/$

4) Řešte v R rovnici:

a) $2^x + 2^{x+1} = 24$ /$K = \{3\}$/

b) $3^{x+2} + 3^{x-1} = 28$ /$K = \{0\}$/

c) $4 \cdot 3^{x+1} - 3^{x-1} = 315$ /$K = \{3\}$/

d) $2^{x-1} + 2^{x-2} + 2^{x-3} = 448$ /$K = \{9\}$/

e) $5 \cdot 4^{x+1} - 4^{x+2} = 4^{x-1} + 240$ /$K = \{3\}$/

5) Řešte v R rovnici:

a) $4^x + 2^x - 6 = 0$ /$K = \{1\}$/

b) $2^{4x} - 50 \cdot 2^{2x} = 896$ /$K = \{3\}$/

c) $7^{2x} + 7^x - 686 = 36 \cdot 7^x$ /$K = \{2\}$/

d) $4^{2x+1} = 65 \cdot 4^{x-1} - 1$ /$K = \{1; -2\}$/