LOGARITMUS, LOGARITMICKÉ ROVNICE

1) Řešte v R rovnici:

a) $\log_2 x = 3$ $/K = \{8\}/$

b) $\log_5 x = 0$ $/K = \{1\}/$

c) $\log_3 x = -2$ $/K = \left\{\frac{1}{9}\right\}/$

d) $\log_2(x+1) = 3$ $/K = \{7\}/$

e) $\log_5(2x-1) = 2$ $/K = \{13\}/$

f) $\frac{3+\log x}{2-\log x} = 4$ $/K = \{10\}/$

g) $\frac{\log x}{\log x+1} = -1$ $/K = \left\{\frac{\sqrt{10}}{10}\right\}/$

2) Řešte v R rovnici:

a) $\log_3(x+5) = \log_3(2x-1)$ $/K = \{6\}/$

b) $\log_5(x^2+17) = \log_5(x+3)$ $/K = \{5\}/$

c) $\log_{\frac{1}{3}} \frac{2+x}{10} = \log_{\frac{1}{3}} \frac{2}{x+1}$ $/K = \{3\}/$

d) $\ln(x+17) = \ln(x-3)^2$ $/K = \{8;\ -1\}/$

3) Řešte v R rovnici:1

a) $\log_2 x = 3\log_2 \frac{1}{4} + \log_2 64 - \log_2 0{,}125$ $/K = \{8\}/$

b) $\log x^2 + \log x^3 + \log x^4 + \log x^5 = 6$ $/K = \left\{\sqrt[7]{1000}\right\}/$

c) $\log(2x+10) = 2\log(x+1)$ $/K = \{3\}/$

d) $\log_{12}(2x-3) - \log_{12}(x-3) = \log_{12} 7$ $/K = \{5\}/$

e) $2\log x - \log 2 = \log(2x-2)$ $/K = \{2\}/$

f) $\log(x-2) + \log(8x+4) = 3$ $/K = \{12\}/$

g) $3\log 2 - \log(x-1) = \log(x+1) - \log x - 2$ $/K = \{3; 5\}/$

h) $\frac{\log(x^2+7)}{\log(x+7)} = 2$ $/K = \{-3\}/$

i) $\frac{\log(2x+13)}{\log(x+5)} = 2$ $/K = \{-2\}/$

4) Řešte v R rovnici:

a) $\log x - \frac{4}{\log x} = 0$ $/K = \left\{100;\ \frac{1}{100}\right\}/$

b) $\log x + \frac{9}{\log x} = -6$ $/K = \left\{\frac{1}{1000}\right\}/$

c) $1 + \log x^3 = \frac{10}{\log x}$ $/K = \left\{10^{\frac{5}{3}};\ \frac{1}{100}\right\}/$

d) $(\log_3 x)^2 - 3\log_3 x - 10 = 0$ $/K = \left\{243;\ \frac{1}{9}\right\}/$

e) $\log^2 x - \log x^4 + 3 = 0$ $/K = \{10; 1000\}/$

f) $\log_{\frac{1}{2}}{}^2(x+1) + 5\log_{\frac{1}{2}}(x+1) = 6$ $/K = \left\{63;\ -\frac{1}{2}\right\}/$

5) Řešte v R rovnici:

a) $2^x = 3$ $/K = \{1{,}58496\}/$

b) $5^{x-1} = 2$ $/K = \{1{,}43067\}/$

c) $7^{3x+1} = 14$ $/K = \{0{,}11873\}/$