

NEROVNICE V SOUČINOVÉM A PODÍLOVÉM TVARU, KVADRATICKÉ NEROVNICE

1) Řešte v R nerovnice:

a) $(x + 2)(x - 3) > 0$

$$\llbracket K = (-\infty; -2) \cup (3; +\infty) \rrbracket$$

b) $(3x + 5)(2x - 3) \leq 0$

$$\llbracket K = \langle -\frac{5}{3}; \frac{3}{2} \rangle \rrbracket$$

c) $\frac{x-2}{x-3} \leq 0$

$$\llbracket K = \langle 2; 3 \rangle \rrbracket$$

d) $\frac{3x+5}{x-1} < 0$

$$\llbracket K = \left(-\frac{5}{3}; 1\right) \rrbracket$$

e) $\frac{-x-2}{3-x} \geq 0$

$$\llbracket K = (-\infty; -2) \cup (3; +\infty) \rrbracket$$

f) $\frac{(x-2)(x-3)}{(x-1)} \leq 0$

$$\llbracket K = (-\infty; 1) \cup (2; 3) \rrbracket$$

g) $\frac{x+2}{x-4} \leq 2$

$$\llbracket K = (-\infty; -4) \cup (10; +\infty) \rrbracket$$

h) $\frac{x+3}{3x+3} < 3$

$$\llbracket K = (-\infty; -1) \cup \left(-\frac{3}{4}; +\infty\right) \rrbracket$$

i) $\frac{x}{x+1} > \frac{1}{2}$

$$\llbracket K = (-\infty; -1) \cup (1; +\infty) \rrbracket$$

j) $\frac{x+2}{1-2x} \leq 2$

$$\llbracket K = (-\infty; 0) \cup \left(\frac{1}{2}; +\infty\right) \rrbracket$$

k) $\frac{3}{x+2} + \frac{2}{x-3} \geq 0$

$$\llbracket K = (-2; 1) \cup (3; +\infty) \rrbracket$$

l) $\frac{1}{x+1} < \frac{1}{3x-2}$

$$\llbracket K = (-\infty; -1) \cup \left(\frac{2}{3}; \frac{3}{2}\right) \rrbracket$$

2) Řešte v R kvadratické nerovnice:

a) $x^2 - 4x - 5 \leq 0$

$$\llbracket K = \langle -1; 5 \rangle \rrbracket$$

b) $5x^2 + 3x - 2 > 0$

$$\llbracket K = (-\infty; -1) \cup \left(\frac{2}{5}; +\infty\right) \rrbracket$$

c) $21 - 29x \geq 2(3 - 2x)^2$

$$\llbracket K = \langle -1; \frac{3}{8} \rangle \rrbracket$$

d) $2(1 - 2x)^2 \leq 2x + 5$

$$\llbracket K = \langle -\frac{1}{4}; \frac{3}{2} \rangle \rrbracket$$

e) $x(5x + 1) > (x + 1)^2 + 2 - 5x$

$$\llbracket K = \left(-\infty; -\frac{3}{2}\right) \cup \left(\frac{1}{2}; +\infty\right) \rrbracket$$

f) $-4(3 - x)^2 \geq 11x - 33$

$$\llbracket K = \langle \frac{1}{4}; 3 \rangle \rrbracket$$