

Linearne nejednadžbe – RM 13



1. Riješi nejednadžbe i skup rješenja prikaži grafički:

a. $(x+2)^2 + 1 < 5x + (3-x)^2$

RJ: $x \in \left\langle -\infty, \frac{4}{5} \right\rangle$

b. $x - \frac{2x-3}{3} \leq \frac{3x+1}{4} - \frac{x+3}{6}$

RJ: $x \in [5, +\infty)$

c. $(3x+3)(3x-1) \geq (3x+2)^2$

RJ: $x \in \left\langle -\infty, -\frac{7}{6} \right\rangle$

d. $\frac{3-2x}{4} - 1 \geq \frac{x}{3} - \frac{4x+1}{6}$

RJ: $x \in \left\langle -\infty, -\frac{1}{2} \right\rangle$

e. $\frac{x+5}{(1-x)(x+2)} \leq 0$

RJ: $x \in [-5, -2) \cup \langle 1, +\infty)$

f. $\frac{5}{1-3x} \geq 0$

RJ: $x \in \left\langle -\infty, \frac{1}{3} \right\rangle$

g. $\frac{2x-3}{25x^2+4-20x} > 0$

RJ: $x \in \left\langle \frac{3}{2}, +\infty \right\rangle$

h. $(1-x)^2(x+2) < 0$

RJ: $x \in \langle -\infty, -1 \rangle$

i. $\frac{1-4x^2}{x^2+2x+1} \leq 0$

RJ: $x \in \left[-\frac{1}{2}, \frac{1}{2} \right]$

j. $\frac{1}{4x} \geq x$

RJ: $x \in \left\langle -\infty, -\frac{1}{2} \right\rangle \cup \left\langle 0, \frac{1}{2} \right\rangle$

k. $\frac{1-2x}{x+2} \leq -2$

RJ: $x \in \langle -\infty, -2 \rangle$

2. Riješi nejednadžbe i skup rješenja prikaži grafički:

a. $-\frac{2}{3} \leq -0.25x + 2 < \frac{1}{3}$

RJ: $x \in \left\langle \frac{20}{3}, \frac{32}{3} \right\rangle$

b. $2 > \frac{x+1}{x-1} \geq 1$

RJ: $x \in \langle 1, +\infty)$

3. Riješi sustave nejednadžbi i skup rješenja prikaži grafički:

a.
$$\begin{cases} 0.4 - \frac{1-x}{2} \geq 1 \\ \frac{x}{3} - 0.2 \leq \frac{2x+1}{6} \end{cases}$$

RJ: $x \in \left[\frac{11}{5}, +\infty \right)$

b.
$$\begin{cases} \frac{3}{2}x - 1 \geq \frac{1}{2}x - \frac{1}{4} \\ x^2 + 3 < (x-1)^2 \end{cases}$$

RJ: $x \in \emptyset$