

Lineárna funkcia s absolútnou hodnotou (riešené príklady)

Zostrojte graf funkcie a určte jej vlastnosti:

$$f_1 : y = |x|$$

$$f_{12} : y = |x + 3|$$

$$f_{13} : y = |2x + 3| - 1$$

$$f_{14} : y = |2x + 3| - x$$

$$f_{15} : y = |2x + 3| - |x|$$

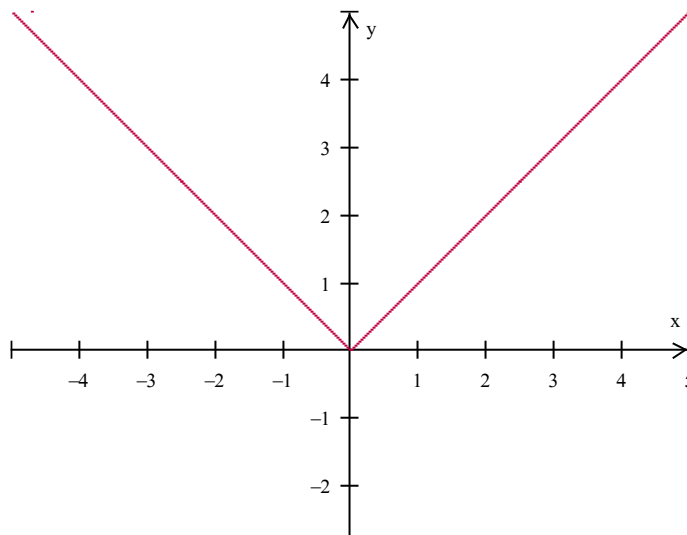
$$f_{16} : y = |2x + 3| - |x - 3|$$

$$f_{17} : y = |2x + 3| - 3|x - 3|$$

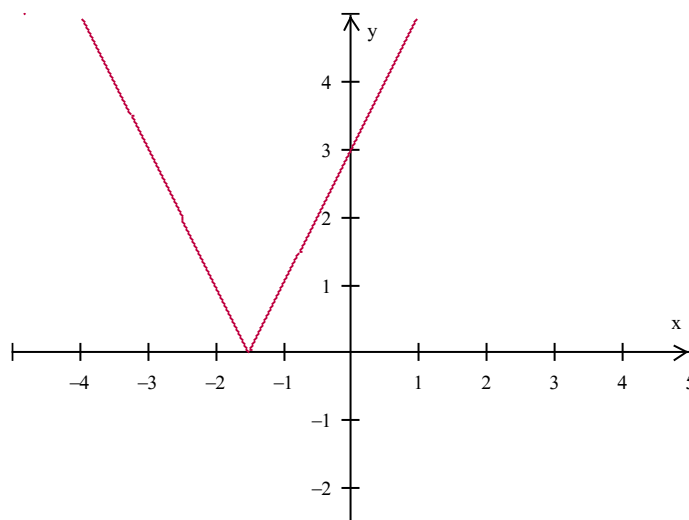
$$f_{18} : y = |2x + 3| - 3|x - 3| + x$$

Riešenie:

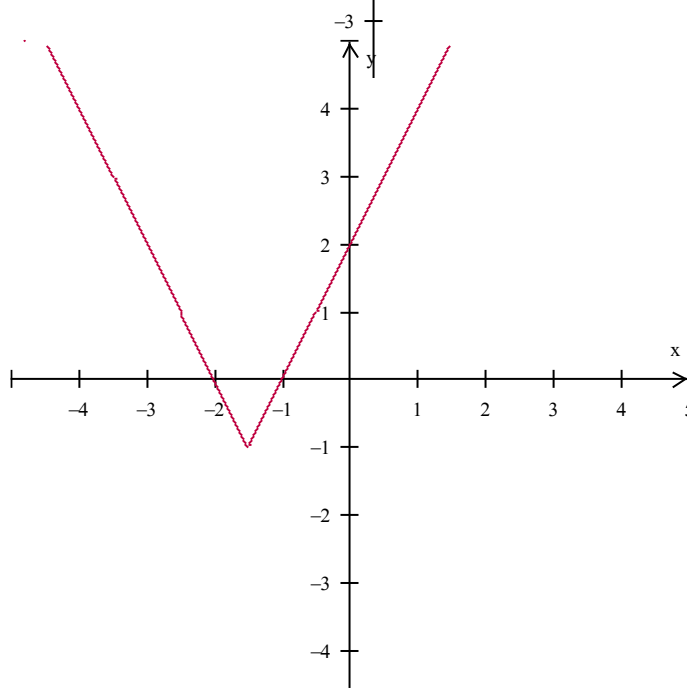
$$f_1 : y = |x| = \begin{cases} x, x \in \langle 0, \infty \rangle \\ -x, x \in (-\infty, 0) \end{cases}$$



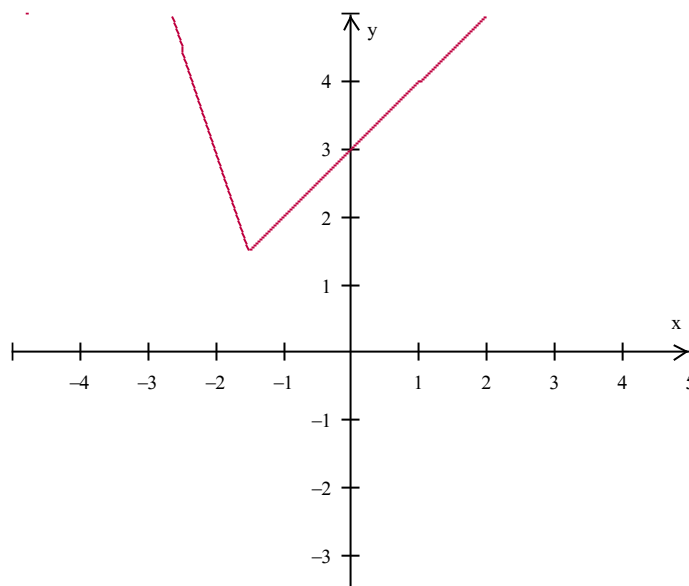
$$f_2 : y = |x + 3| = \begin{cases} x + 3, x \in \langle -3, \infty \rangle \\ -x - 3, x \in (-\infty, -3) \end{cases}$$



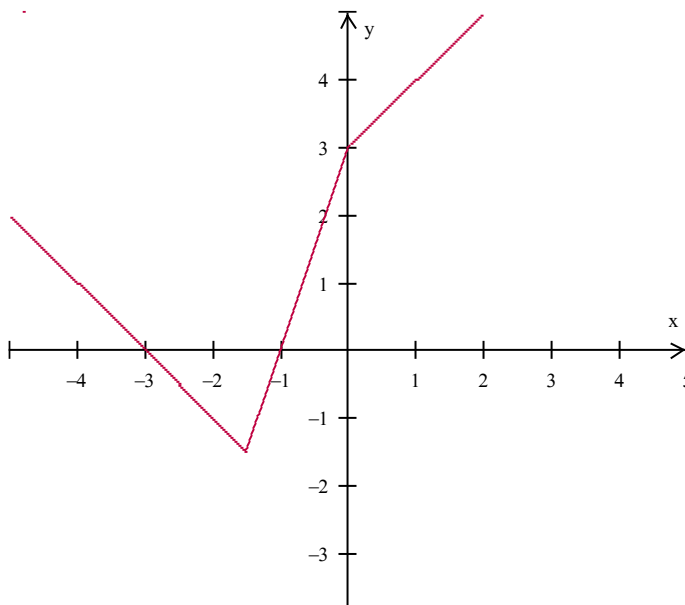
$$f_3 : y = |2x + 3| - 1 = \begin{cases} 2x + 2, x \in \langle -\frac{3}{2}, \infty \rangle \\ -2x - 4, x \in (-\infty, -\frac{3}{2}) \end{cases}$$



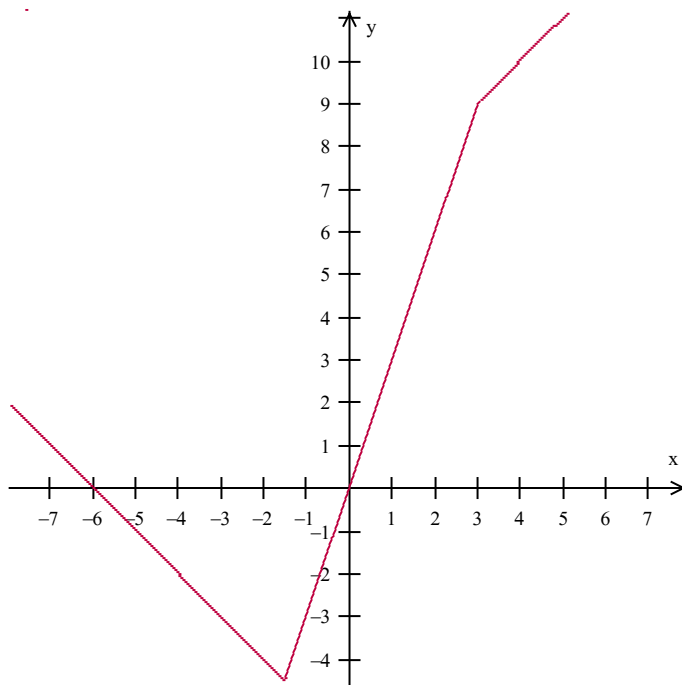
$$f_4 : y = |2x+3| - x = \begin{cases} x+3, x \in \left\langle -\frac{3}{2}, \infty \right\rangle \\ -3x-3, x \in \left(-\infty, -\frac{3}{2} \right) \end{cases}$$



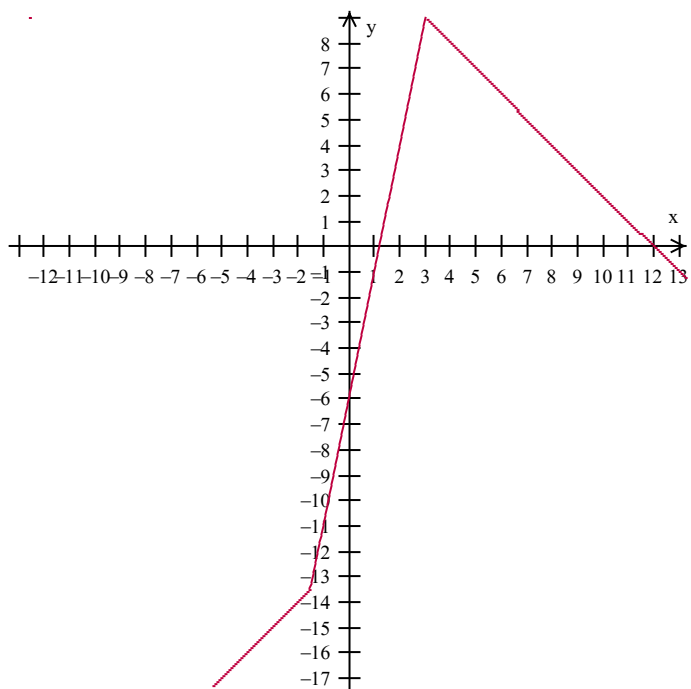
$$f_5 : y = |2x+3| - |x| = \begin{cases} -x-3, x \in \left(-\infty, -\frac{3}{2} \right\rangle \\ 3x+3, x \in \left(\frac{-3}{2}, 0 \right\rangle \\ x+3, x \in (0, \infty) \end{cases}$$



$$f_6 : y = |2x+3| - |x-3| = \begin{cases} -x-6, x \in \left(-\infty, \frac{-3}{2} \right\rangle \\ 3x, x \in \left(\frac{-3}{2}, 3 \right\rangle \\ x+6, x \in (3, \infty) \end{cases}$$



$$f_7 : y = |2x + 3| - 3|x - 3| = \begin{cases} x - 12, x \in \left(-\infty, -\frac{3}{2}\right) \\ 5x - 6, x \in \left(-\frac{3}{2}, 3\right) \\ -x - 12, x \in (3, \infty) \end{cases}$$



$$f_8 : y = |2x + 3| - 3|x - 3| + x = \begin{cases} 2x - 12, x \in \left(-\infty, -\frac{3}{2}\right) \\ 6x - 6, x \in \left(-\frac{3}{2}, 3\right) \\ 12, x \in (3, \infty) \end{cases}$$

