$$y = \frac{4x^2 - 7x + 3}{x - 1}$$

$\boldsymbol{D(y) = ?}$

$$x - 1 = 0$$

$$x = 1$$

$\boldsymbol{D(y) = (-\infty; 1) \cup (1; +\infty)}$

$$y = \frac{4x^2-7x+3}{x-1}$$ $$\boldsymbol{D(y) = (-\infty;1) \cup (1;+\infty)}$$

$$4x^2 - 7x + 3 = 0$$

$$D = 49 - 48 = 1$$

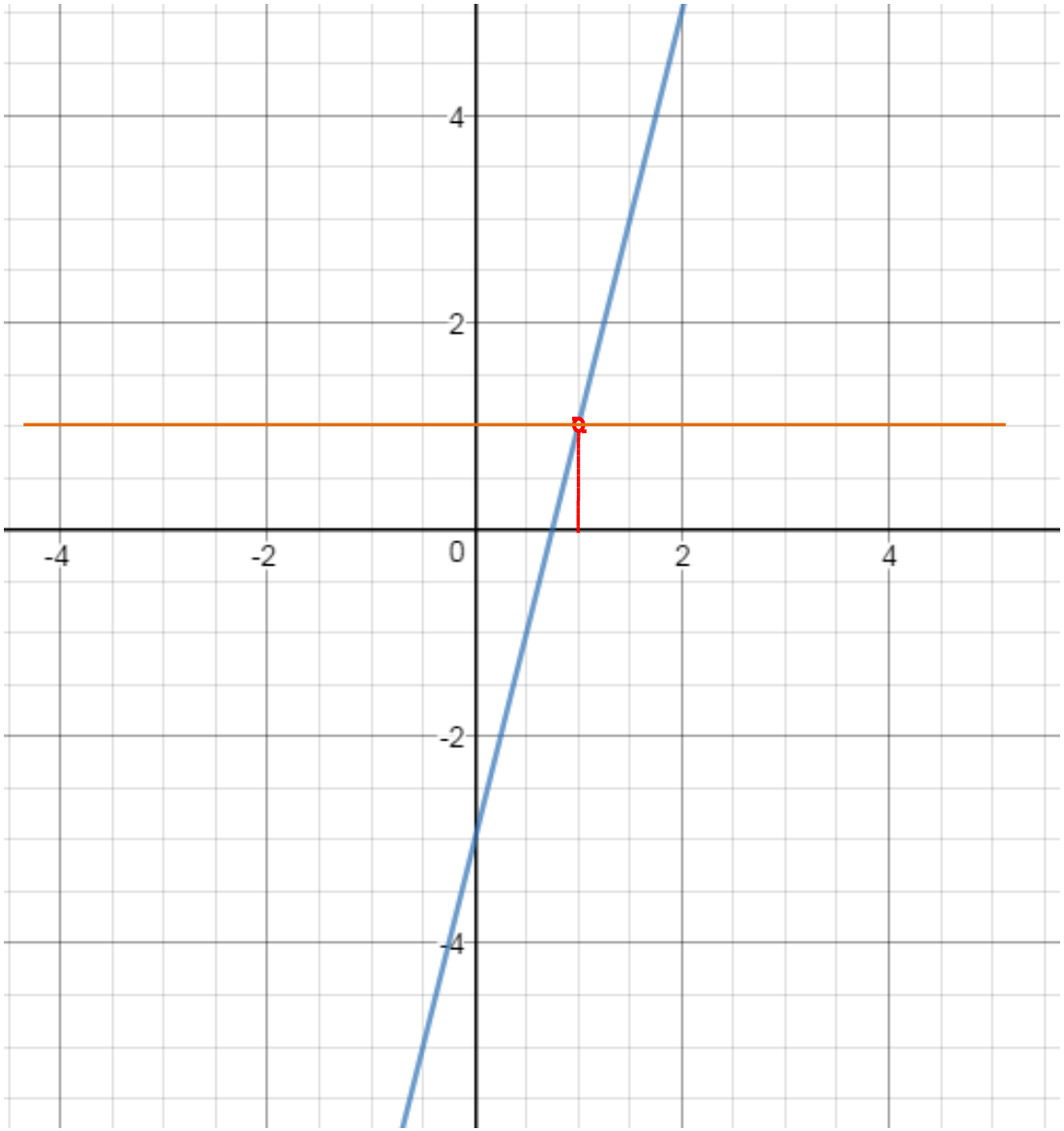
$$x_1 = \frac{7+1}{8} = 1$$

$$x_2 = \frac{7-1}{8} = \frac{6}{8} = \frac{3}{4}$$

$$4x^2 - 7x + 3 = 4(x-1)\left(x - \frac{3}{4}\right) = (x-1)(4x-3)$$

$$y = \frac{4x^2-7x+3}{x-1} = \frac{(x-1)(4x-3)}{x-1} = 4x - 3$$

$y = 4x - 3$ $D(y) = (-\infty; 1) \cup (1; +\infty)$



$$y = \frac{x^2 + 3x - 10}{x^3 + 3x^2 - 10x}$$

$\boldsymbol{D(y) = ?}$

$$x^3 + 3x^2 - 10x = 0$$

$$x(x^2 + 3x - 10) = 0$$

$$\left[\begin{array}{l} x = 0 \\ x = -5 \\ x = 2 \end{array}\right.$$

$\boldsymbol{D(y) = (-\infty; -5) \cup (-5; 0) \cup (0; 2) \cup (2; +\infty)}$

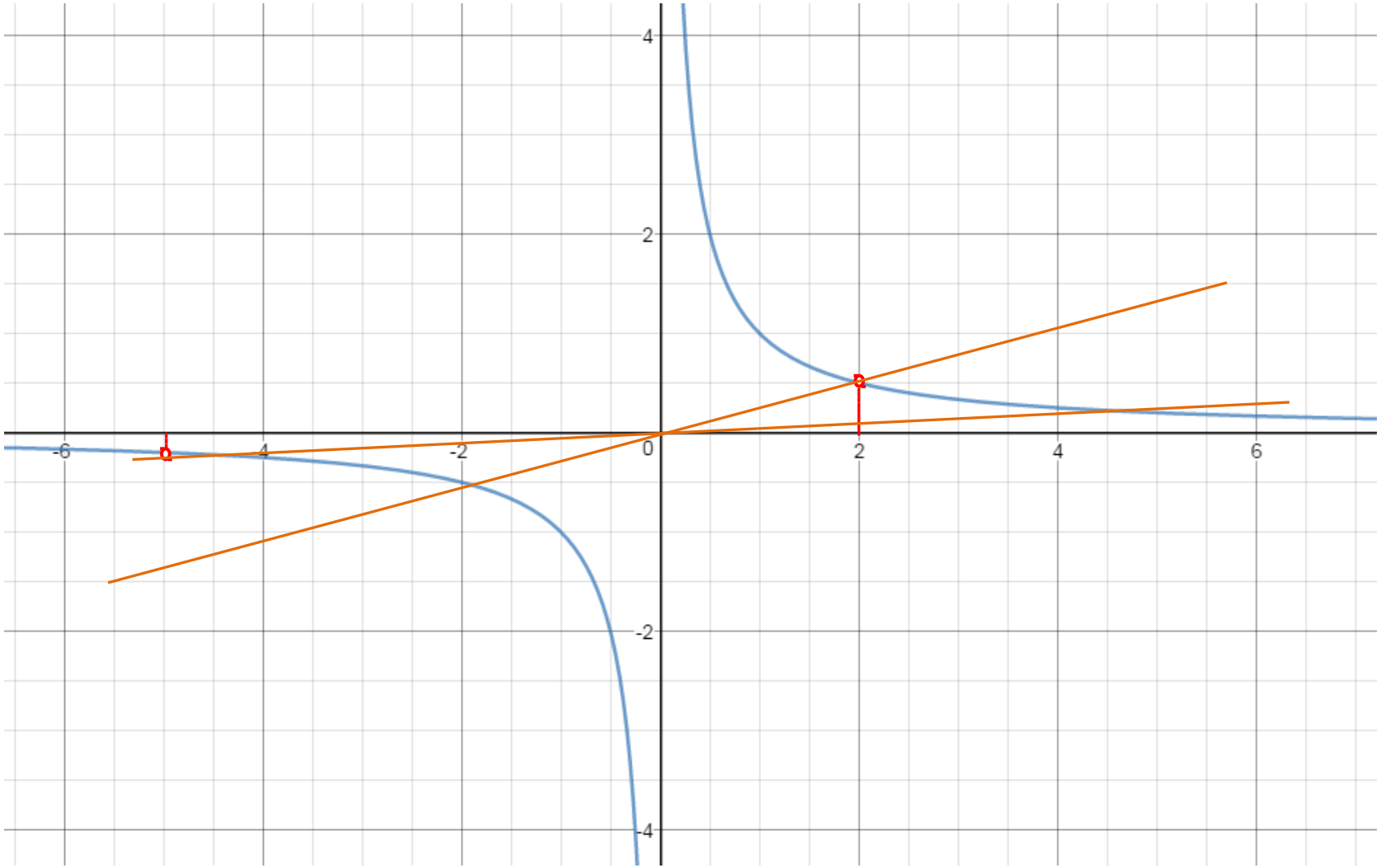
$$y = \frac{x^2 + 3x - 10}{x^3 + 3x^2 - 10x}$$

$$y = \frac{x^2 + 3x - 10}{x^3 + 3x^2 - 10x} = \frac{x^2 + 3x - 10}{x(x^2 + 3x - 10)} = \frac{1}{x}$$

$$y = \frac{1}{x}$$

$$y = \frac{1}{x}$$

$$D(y) = (-\infty; -5) \cup (-5; 0) \cup (0; 2) \cup (2; +\infty)$$



$$y = \frac{x^4 - 25x^2 + 144}{x^2 + x - 12}$$

$$\boldsymbol{D(y) = ?\ \circ; -4) \cup (-4; 3) \cup (3; +\infty)}$$

$$x^2 + x - 12 = 0$$

$$\left[\begin{array}{l} x = -4 \\ x = 3 \end{array}\right.$$

$$x^2 + x - 12 = (x + 4)(x - 3)$$

$$y = \frac{x^4 - 25x^2 + 144}{x^2 + x - 12}$$

$$x^4 - 25x^2 + 144 = 0$$

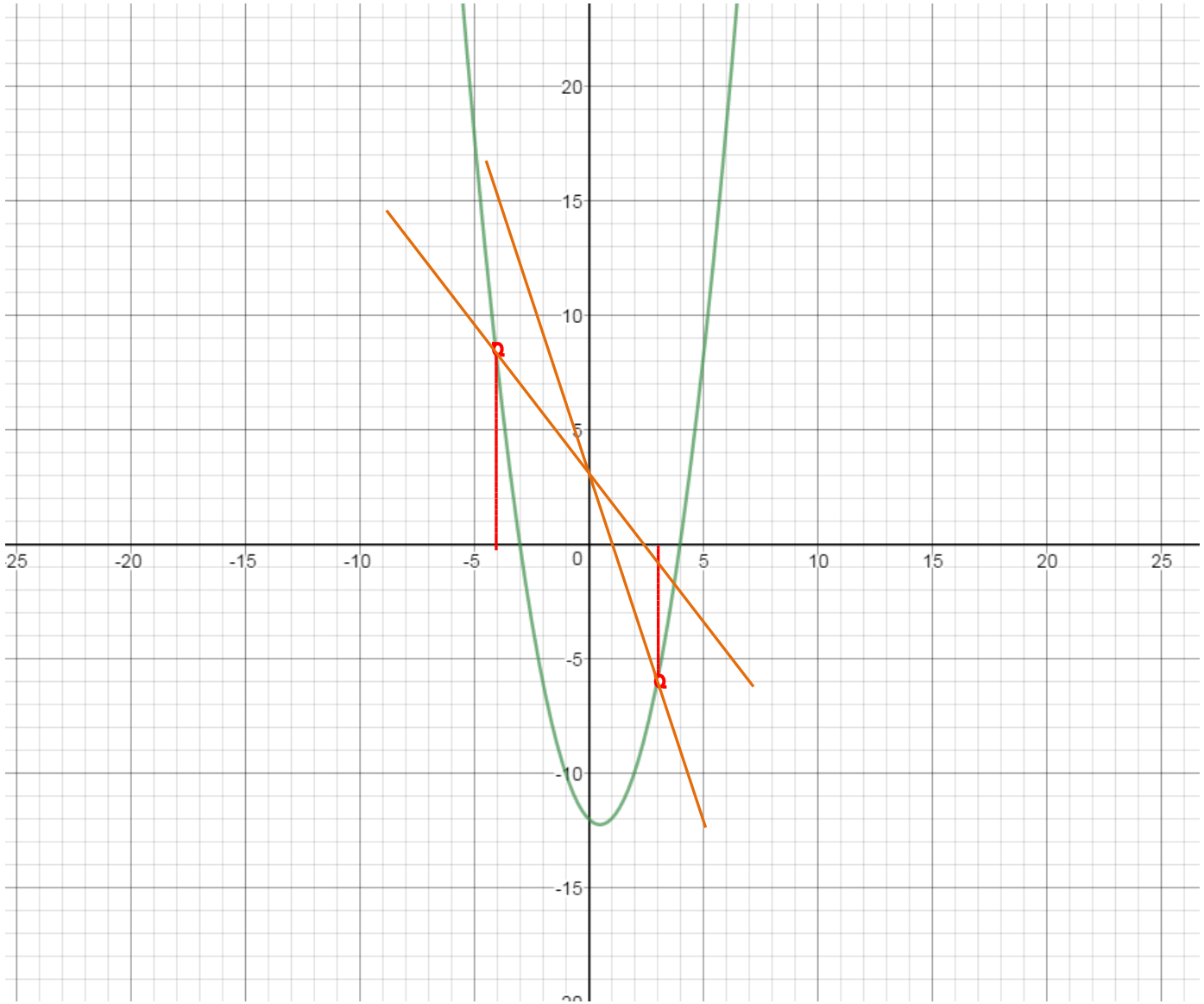
$$D = 625 - 576 = 49$$

$$x^2 = \begin{bmatrix} \frac{25 - 7}{2} = 9 \\ \frac{25 + 7}{2} = 16 \end{bmatrix} \qquad x = \begin{bmatrix} -3 \\ 3 \\ -4 \\ 4 \end{bmatrix}$$

$$y = \frac{x^4 - 25x^2 + 144}{x^2 + x - 12} = \frac{(x-4)(x+4)(x-3)(x+3)}{(x+4)(x-3)}$$

$$y = x^2 - x - 12$$

$y = x^2 - x - 12$ $\boldsymbol{D(y) = (-\infty; -4) \cup (-4; 3) \cup (3; +\infty)}$



$$y = \frac{(x^2 - 3x)|x - 5|}{x - 3}$$ $\boldsymbol{D(y) = (-\infty; 3) \cup (3; +\infty)}$

$$y = \frac{(x^2 - 3x)|x - 5|}{x - 3} = \frac{x(x - 3)|x - 5|}{x - 3} = x|x - 5|$$

$$y = x|x - 5|$$

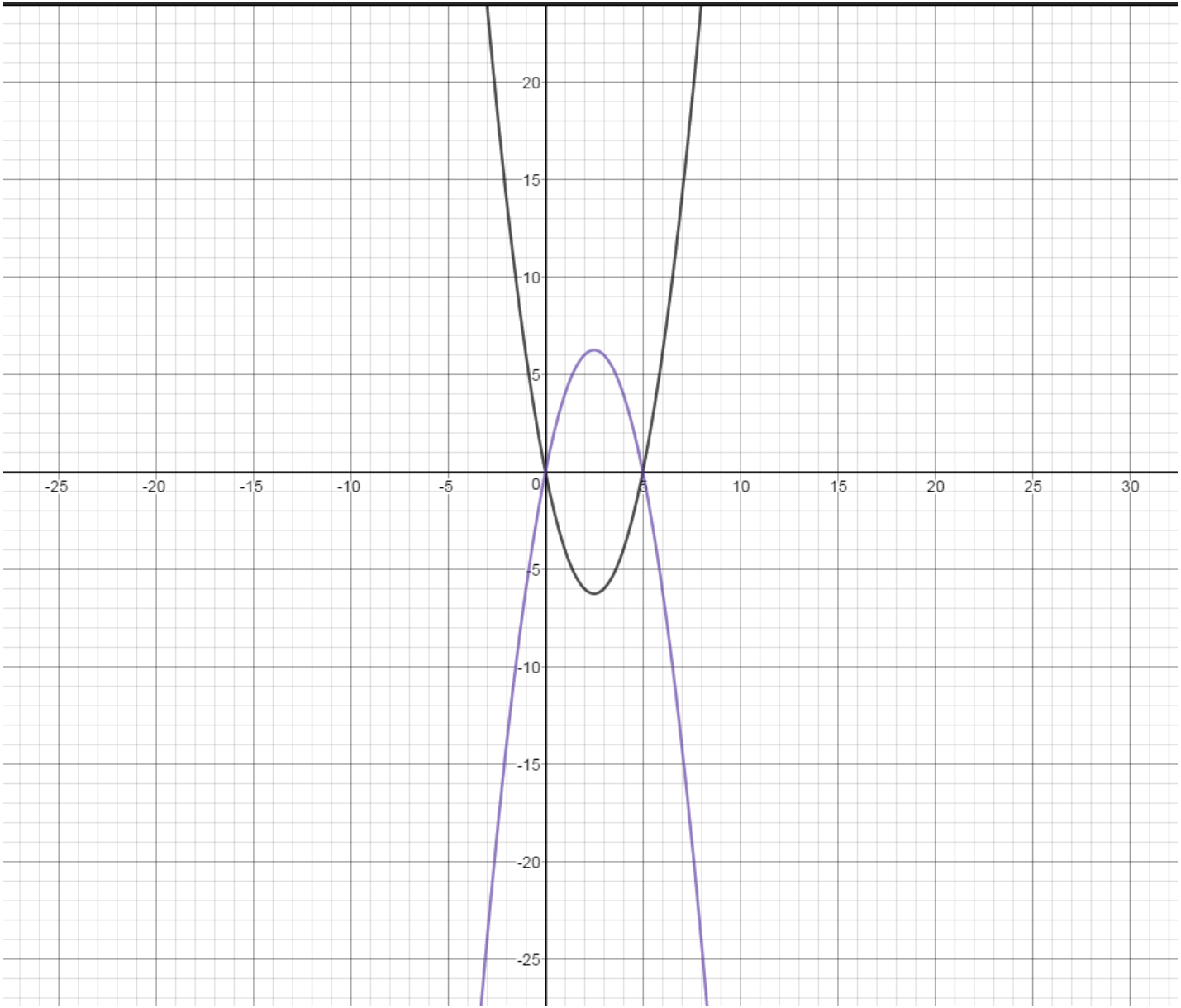
$$y = \begin{cases} x(x - 5) \text{ при } x \geq 5 \\ -x(x - 5) \text{ при } x < 5 \end{cases}$$

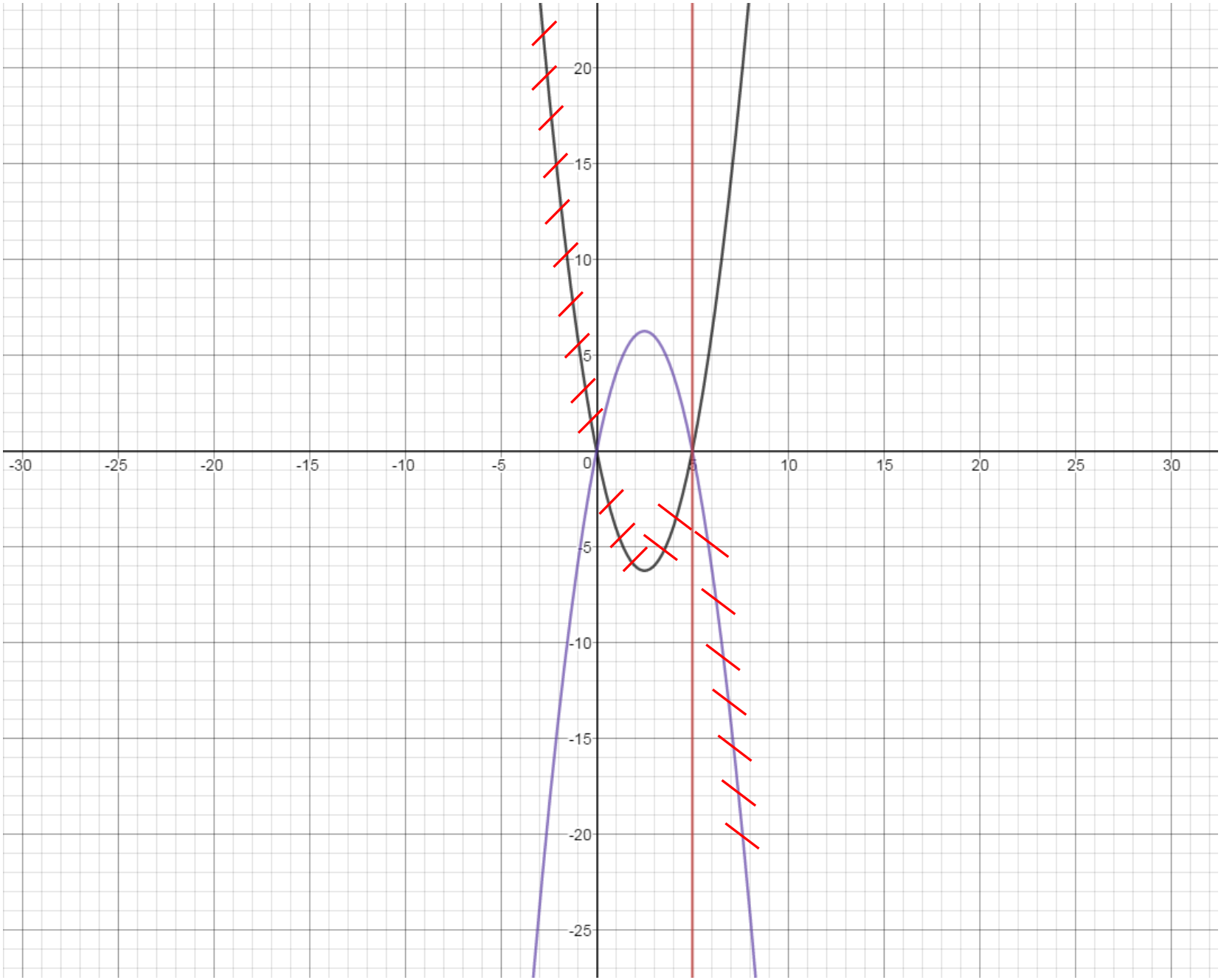
$$y = \begin{cases} x^2 - 5x \text{ при } x \geq 5 \\ -x^2 + 5x \text{ при } x < 5 \end{cases}$$

$y = x|x - 5|$ $\quad\quad$ $\boldsymbol{D(y) = (-\infty; 3) \cup (3; +\infty)}$

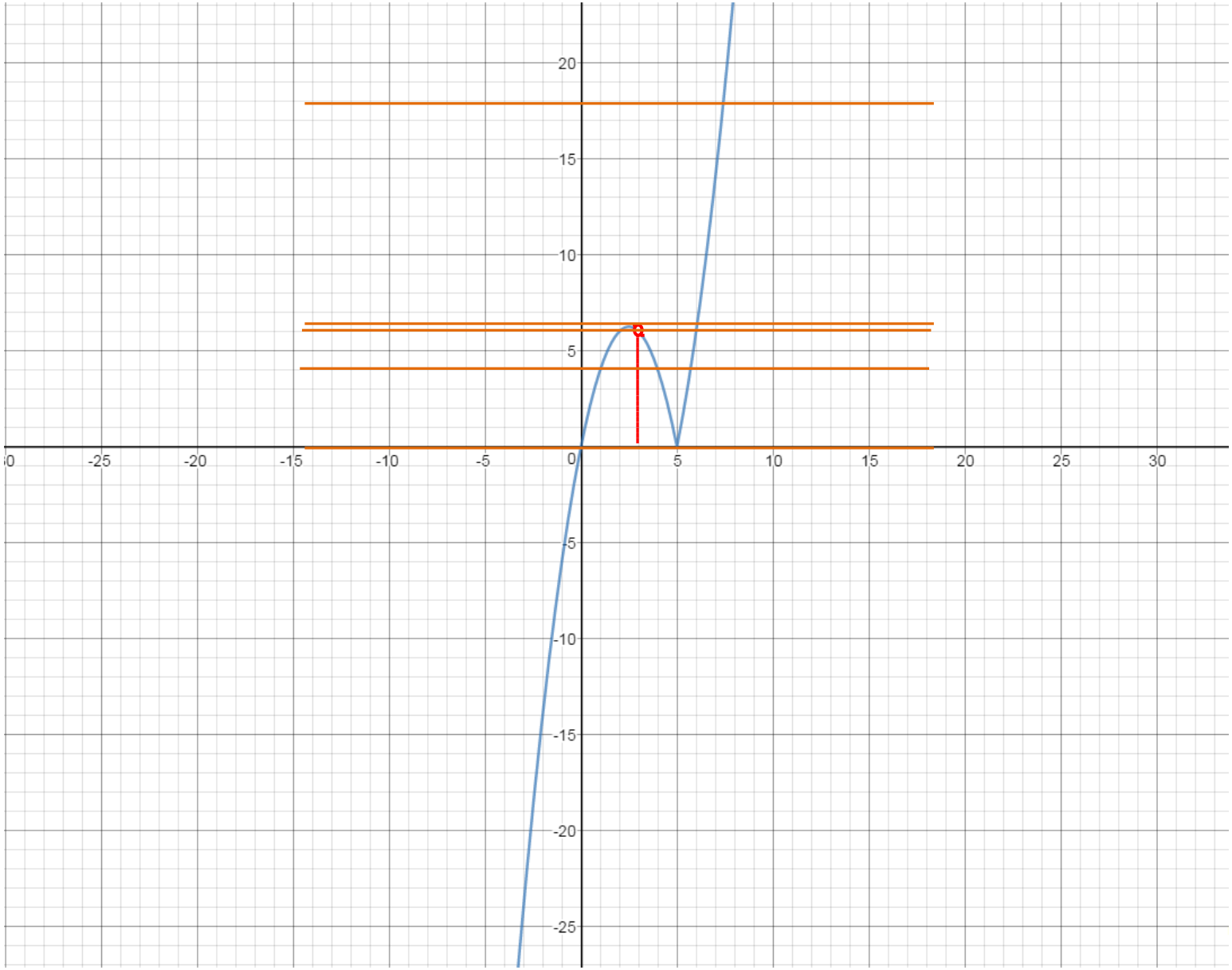
$$y = \begin{cases} x(x-5) \text{ при } x \geq 5 \\ -x(x-5) \text{ при } x < 5 \end{cases}$$

$$y = \begin{cases} x^2 - 5x \text{ при } x \geq 5 \\ -x^2 + 5x \text{ при } x < 5 \end{cases}$$


20
15
10
5
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
-5
-10
-15
-20
-25


20
15
10
5
-30
-25
-20
-15
-10
-5
0
5
10
15
20
25
30
-5
-10
-15
-20
-25

$y = x|x - 5|$ $\boldsymbol{D(y) = (-\infty; 3) \cup (3; +\infty)}$



$$y = \frac{2{,}5|x| - 2}{2|x| - 2{,}5x^2}$$

$\boldsymbol{x^2 = |x|^2}$

$$2|x| - 2{,}5x^2 = 0$$

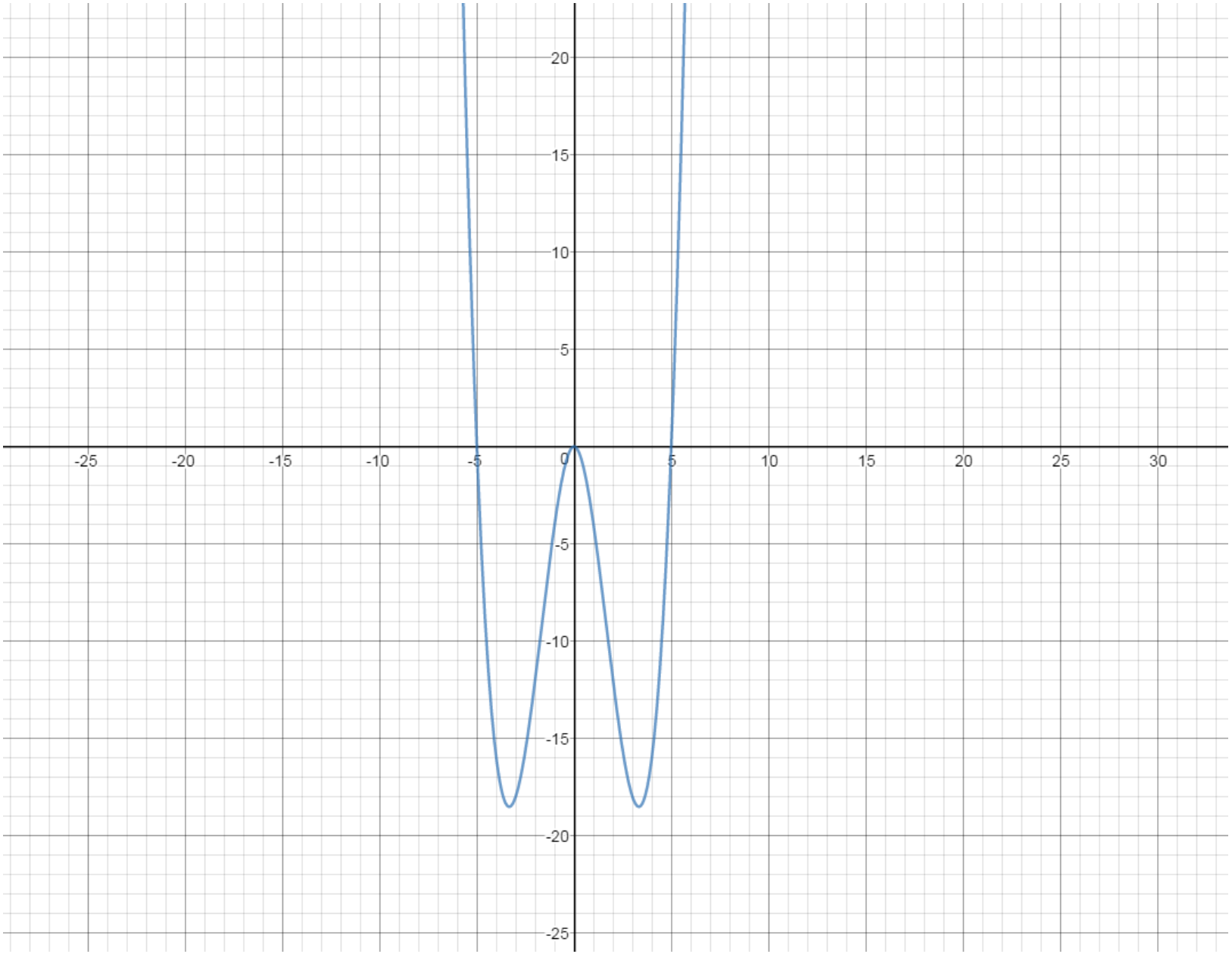
$$-|x|(2{,}5|x| - 2) = 0$$

$$\left[\begin{array}{l} |x| = 0 \\ |x| = 0{,}8 \end{array}\right.$$

$$\left[\begin{array}{l} x = 0 \\ x = -0{,}8 \\ x = 0{,}8 \end{array}\right.$$

$\boldsymbol{D(y) = (-\infty; -0{,}8) \cup (-0{,}8; 0{,}8) \cup (0{,}8; +\infty)}$

$y = f(|x|)$



$$y = \frac{2{,}5|x| - 2}{2|x| - 2{,}5x^2}$$

$$\boldsymbol{D(y) = (-\infty; -0{,}8) \cup (-0{,}8; 0{,}8) \cup (0{,}8; +\infty)}$$

$$y = \frac{2{,}5|x| - 2}{2|x| - 2{,}5x^2} = \frac{2{,}5|x| - 2}{2|x| - 2{,}5|x|^2} = \frac{2{,}5|x| - 2}{-|x|(2{,}5|x| - 2)} = -\frac{1}{|x|}$$

$$y = -\frac{1}{|x|}$$

$$\boldsymbol{D(y) = (-\infty; -0,8) \cup (-0,8; 0,8) \cup (0,8; +\infty)}$$