

Zápóčtoví písemná na konci semestru!

Zápčet je > 60b, písemná je 60b, úkoly 20b

$$f: A \rightarrow B \quad \forall a \in A \quad \exists! b \in B : (a, b) \in f$$

$f(a) = b$

$$\ln: \mathbb{R} \rightarrow \mathbb{R}$$

$$\text{Def}(\ln) = \{x \in \mathbb{R}, x > 0\}$$

Určete def. obor funkce: $f(x) = \log_6(\sqrt{x^2+2x-3} - x)$

$$x^2+2x-3 \geq 0$$

$$(x+3) \cdot (x-1) \geq 0$$

$$x = -3, +1$$



$$(-\infty, -3) \cup (1, \infty)$$

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$$\sqrt{x^2+2x-3} > x$$

✓

$$\sqrt{x^2+2x-3} - x > 0$$

$$\text{pro } x \geq 0$$

$$x^2+2x-3 > x^2$$

$$x > \frac{3}{2}$$

$$\left(\frac{3}{2}; \infty\right)$$

$$\text{Df}(x): (-\infty, -3) \cup \left(\frac{3}{2}; \infty\right)$$

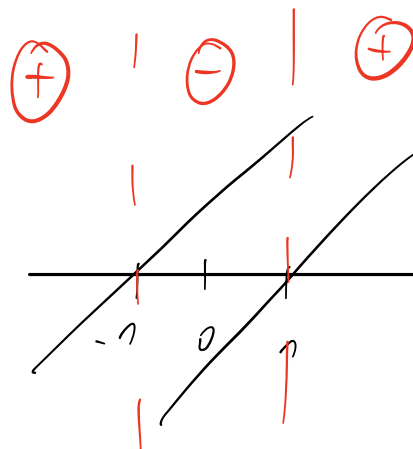


Řešte definiční obor!

$$a) \log\left(\frac{x+1}{x-1}\right) > 0$$

$$x \neq 1$$

$$b) \frac{x-2}{2x-8} \geq 1$$



$$a) \frac{x+1}{x-1} > 0$$

$$Df: (-\infty; -1) \cup (1; \infty)$$

$$H(f) > 0: \text{Argument musí být } > 1 = \underline{\underline{(1; \infty)}}$$

$$\frac{x+1}{x-1} > 1$$

$$(1; \infty):$$

$$x+1 > x-1$$

$$1 > -1$$



$$(-\infty; -1):$$

$$x+1 < x-1$$

$$1 < -1$$

→ jelikož násobím záporným číslem!!!

Opět rozdělím interval!!

$$b) \frac{x-2}{2x-8} \geq 1$$

$$2x-8 > 0: \underline{x > 4}$$

$$x-2 \geq 2x-8$$

$$x \leq 6$$

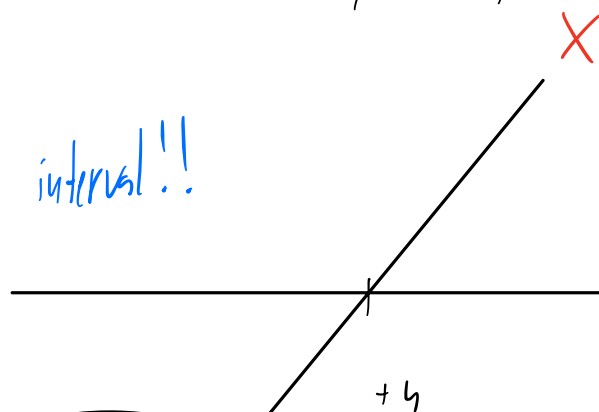
$$x \in (4; 6]$$

$$2x-8 < 0: \underline{x < 4}$$

$$x-2 \leq 2x-8$$

$$x \geq 6$$

$$x \in \emptyset$$



$$2x-8 \neq 0$$

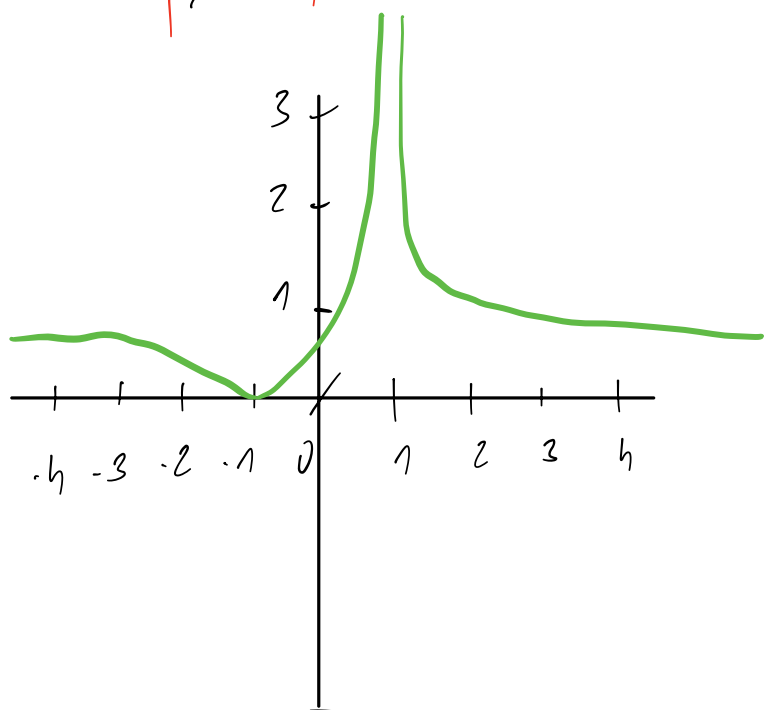
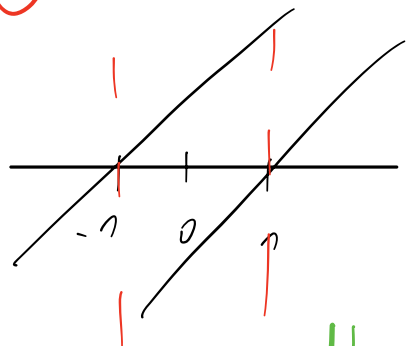
$$2x \neq 8$$

$$x \neq 4$$

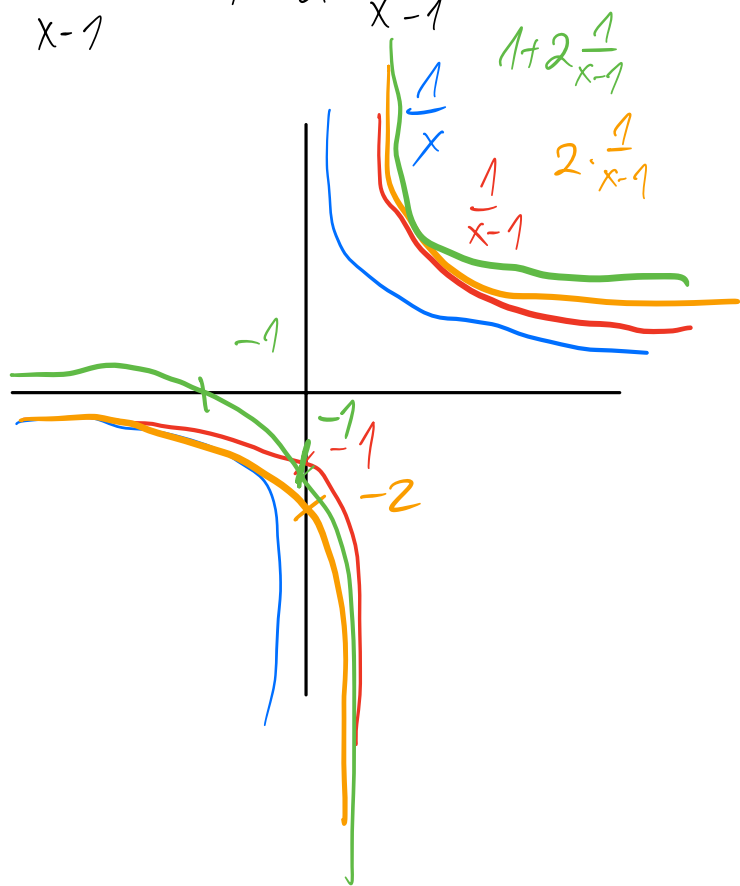
$$H(f) = (4; 6]$$

$$a) f(x) = \left| \frac{x+1}{x-1} \right|$$

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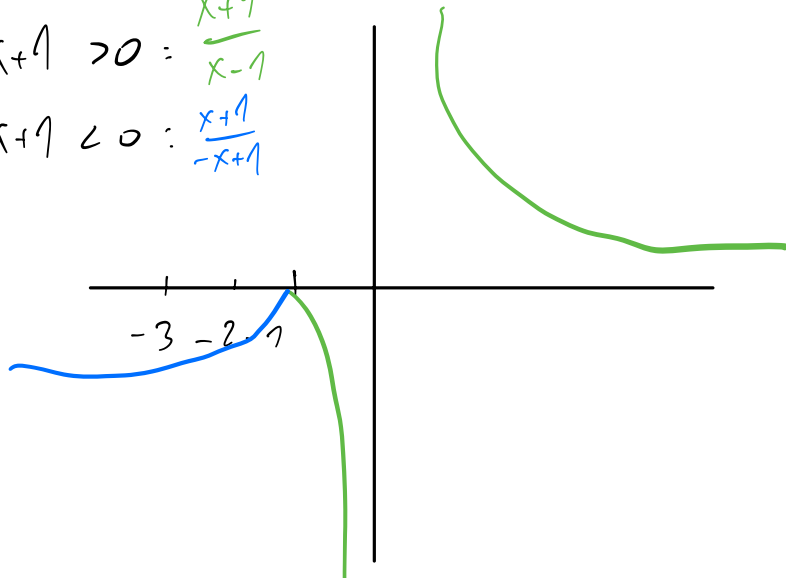
$$\frac{x+1}{x-1} = 1 + 2 \cdot \frac{1}{x-1}$$



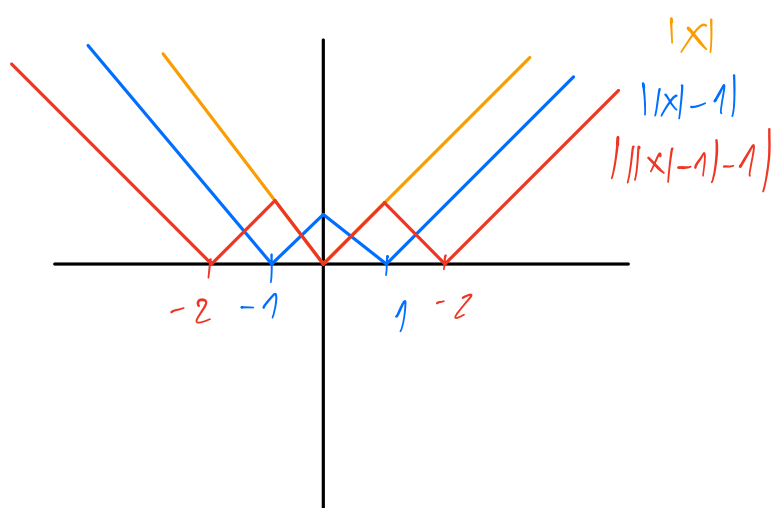
$$b) g(x) = \frac{|x+1|}{x-1}$$

$$x+1 > 0: \frac{x+1}{x-1}$$

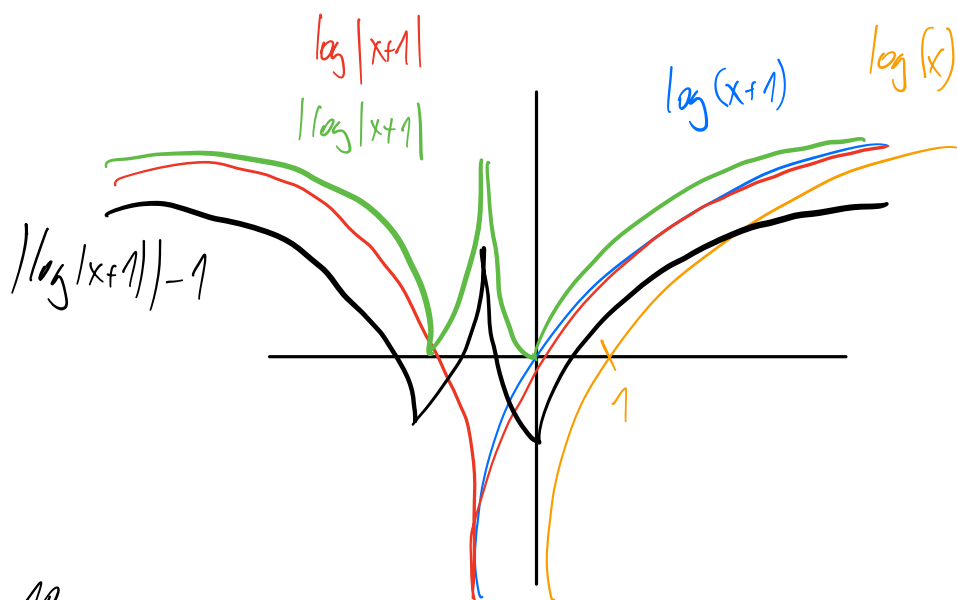
$$x+1 < 0: \frac{x+1}{-x+1}$$



$$a) f(x) = ||x| - 1| - 1$$



$$b) g(x) = |\log |x+1|| - 1$$



$$|\log |x+1|| = \pm 1$$

$$\log x = \pm 1 \Leftrightarrow x = \begin{cases} 10 \\ 0.1 \end{cases}$$

Späetnost racionálnich čísel  $\mathbb{Q}$ :

$$\varepsilon: \quad 0 \quad 2 \quad 2 \quad 3 \quad 3 \quad 3$$

$$2\text{lomky:} \quad \frac{0}{1}, \frac{1}{1}, \frac{0}{2}, \frac{1}{2}, \frac{2}{1}, \frac{0}{3}$$