

- $\frac{a}{b} \geq 0 \Leftrightarrow \left(\begin{matrix} a \geq 0 \\ b > 0 \end{matrix} \vee \begin{matrix} a \leq 0 \\ b < 0 \end{matrix} \right)$? násobem' nerovnosti zap. číslem otačí' nerovnost
 - zlomky
 - absolutní hodnoty $a \geq 0 \Rightarrow |a| = a$
 $a < 0 \Rightarrow |a| = -a$
 - odmocniny

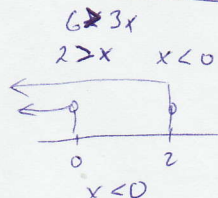
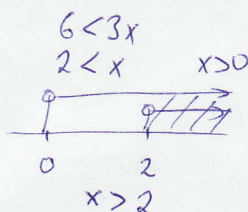
CVIČENÍ 2 MATEMATIKA 1

$a, b, c, p, i,$

Př: Určete, pro která reálná čísla platí (určete obor pravdivosti výrokových forem)

a) $\frac{6}{x} < 3$ | $\frac{6-3x}{x} < 0$ $\frac{6-3x < 0}{x > 0} \vee \frac{6-3x > 0}{x < 0}$ $x \neq 0$

$x \in (-\infty, 0) \cup (2, \infty)$

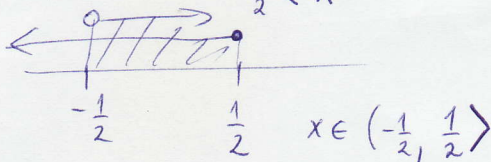


zk: -1, 1, 3

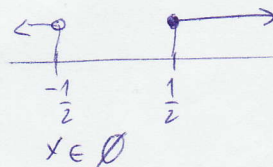
b) $\frac{1-2x}{4+8x} \geq 0$ | $\frac{1-2x \geq 0}{4+8x > 0} \vee \frac{1-2x \leq 0}{4+8x < 0}$ $x \in (-\frac{1}{2}, \frac{1}{2}]$

$1-2x \geq 0 \quad 4+8x > 0$
 $1 \geq 2x : : 2 \quad 4 > -8x : : (-8) !$

$\frac{1}{2} \geq x \quad -\frac{1}{2} < x$



$1-2x \leq 0 \quad 4+8x < 0$
 $\frac{1}{2} \leq x \quad 4 < -8x$
 $\frac{1}{2} \leq x \quad -\frac{1}{2} > x$



zk: -1, 0, 1

c) $\frac{4-x}{2} < \frac{3-x}{6}$ | $\cdot 6 \quad 3 \cdot (4-x) < 3-x$ $zk: 0, 5$

$12 - 3x < 3 - x$

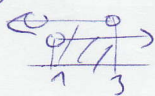
$9 < 2x$
 $\frac{9}{2} < x$

$x \in (\frac{9}{2}, \infty)$

d) $5 < \frac{10}{3-x}$

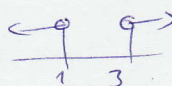
$\frac{-5x+5}{3-x} < 0$

$\frac{-5x+5 < 0}{3-x > 0} \vee \frac{-5x+5 > 0}{3-x < 0}$



$x > 1$
 $x < 3$

$x < 1$
 $x > 3$



$x \in (1, 3)$

zk: 0, 2, 4

e) $\frac{1}{x+3} \geq \frac{2}{x-1}$ | $\frac{1}{x+3} - \frac{2}{x-1} = \frac{x-1-2(x+3)}{(x+3)(x-1)} = \frac{x-1-2x-6}{(x+3)(x-1)} = \frac{-x-7}{(x+3)(x-1)} \geq 0$

	-7	-3	1
-x-7	+	0	-
x+3	-	-	0
x-1	-	-	+
-x-7	+	0	-
(x+3)(x-1)	+	0	-

$x \in (-\infty, -7] \cup (-3, 1)$

zk: -8, -4, 0, 3

$\frac{-1}{5} \geq \frac{-2}{9}$