

4.3 Ρητές συναρτήσεις και ανισώσεις

Τρίτη, 9 Μαρτίου 2021

5:15 μμ

$$A, \frac{A(x)}{B(x)} \geq 0 \quad \text{τότε}$$

$$\textcircled{1} \quad (\text{πρέπει}) \quad B(x) \neq 0$$

$$\textcircled{2} \quad A(x) \cdot B(x) \geq 0$$

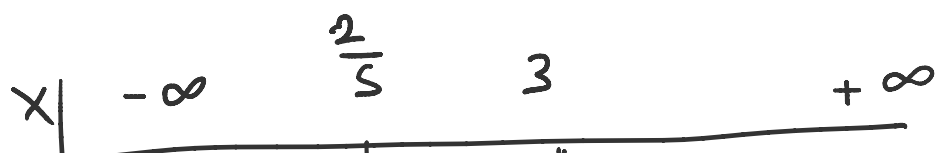
Παράδειγμα

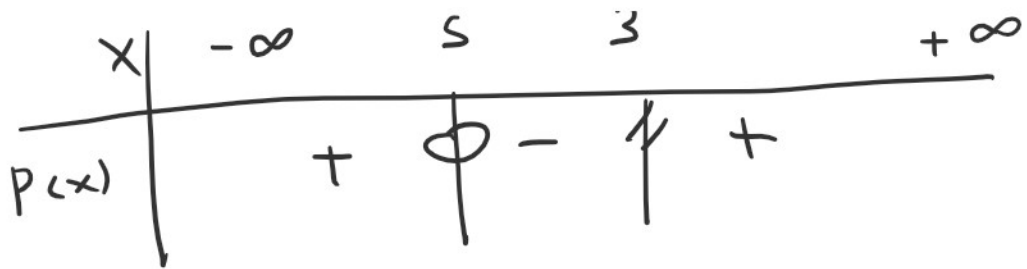
$$\frac{5x-2}{x-3} \geq 0$$

$$\text{πρέπει} \quad x-3 \neq 0$$

$$x \neq 3$$

$$(5x-2)(x-3) \geq 0$$





'Aufgaben 7

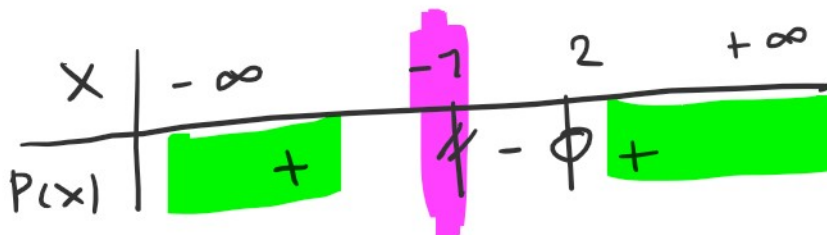
$$i) p(x) = \frac{x-2}{x+1} > 0$$

$$\text{Prinzip: } x+1 \neq 0$$

$$x \neq -1$$

$$(x-2)(x+1) > 0$$

$$p_i(x): 2, -1$$



$$x < -1 \quad \wedge \quad x > 2$$

$$x \in (-\infty, -1) \cup (2, +\infty)$$

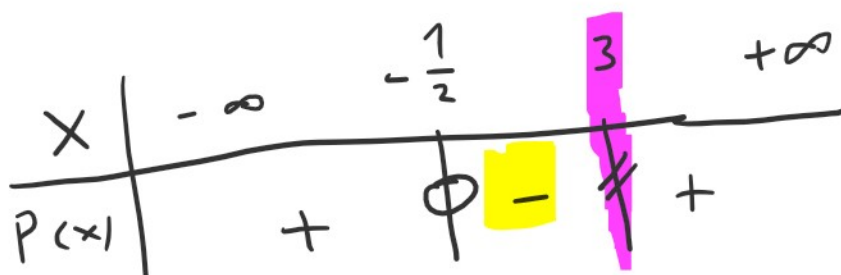
$$ii) \quad p(x) = \frac{2x+1}{x-3} \leq 0$$

$$\pi p \epsilon n \epsilon, \quad x-3 \neq 0$$

$$x \neq 3$$

$$(2x+1)(x-3) \leq 0$$

$$p(x) \leq 0: \quad x = -\frac{1}{2} \quad (x=3)$$



$$-\frac{1}{2} \leq x < 3$$

← προσοχή!
Η τιμή 3 ~~εξαιρείται~~!

$$x \in \left[-\frac{1}{2}, 3\right)$$

Άσκηση 8 665. 118

$$p(x) = \frac{x^2 - x - 2}{x-3} \leq 0$$

$$P(x) = \frac{x^2 - x - 2}{x^2 + x - 2} \leq 0$$

$$\pi_{P(x)} \quad x^2 + x - 2 \neq 0$$

$$\Delta = 1 + 4 \cdot 2 \cdot 1 =$$

$$= 1 + 8$$

$$= 9$$

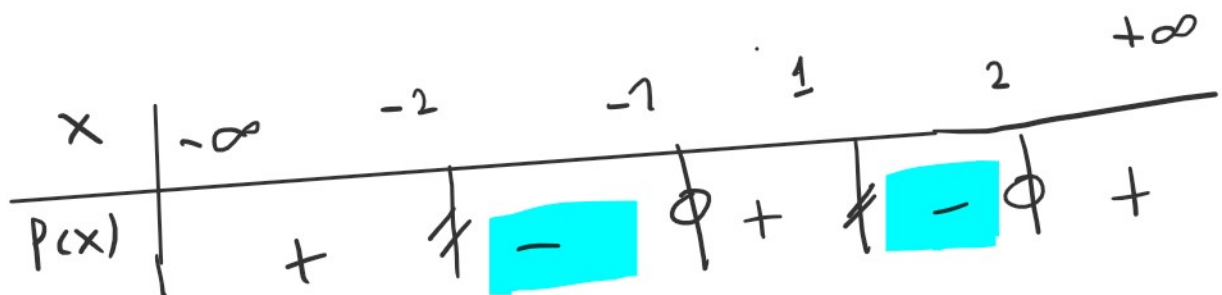
$$x_{1,2} = \frac{-1 \pm \sqrt{9}}{2} = \frac{-1 \pm 3}{2} = \begin{matrix} -2 \\ 1 \end{matrix}$$

$$x \neq 1 \text{ kai } x \neq -2$$

$$(x^2 - x - 2) \cdot (x^2 + x - 2) \leq 0$$

$$(x+1) \cdot (x-2) \cdot (x-1) \cdot (x+2) \leq 0$$

↖ roots: -1, 2



$$-2 < x \leq -1$$

∩

$$1 < x \leq 2$$

$$x \in (-2, -1] \cup (1, 2]$$