

ES N 513 PAG 53

Trovare a per cui

$$(a-1)x^2 + ax + a > 0 \quad \forall x \in \mathbb{R}$$

$\Delta > 0$ 2 soluzioni reali e distinte

$\Delta = 0$ " " " " coincidenti

$\Delta < 0$ " " " " complesse coniugate

$$\Delta < 0 \quad a^2 - 4(a-1)a < 0$$

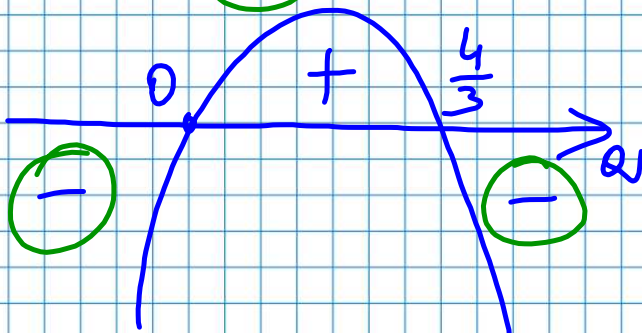
$$a^2 - 4a^2 + 4a < 0 \quad -3a^2 + 4a < 0$$

$$-3q^2 + 4q < 0$$

$$-3q^2 + 4q = 0 \quad q(-3q + 4) = 0$$

$$q = 0$$

$$q = \frac{4}{3}$$



$$q < 0 \cup q > \frac{4}{3}$$

$$\begin{cases} q < 0 \cup q > \frac{4}{3} \\ q - 1 > 0 \end{cases} \Leftrightarrow q > \frac{4}{3}$$

N 749

$$\sqrt{4-x} = 4 - \sqrt{12-x}$$

$$\sqrt{4-x} - 4 = -\sqrt{12-x}$$

$$4 - \sqrt{4-x} = \sqrt{12-x}$$

$$12-x \geq 0$$

$$4-x \geq 0$$

$$12-x = 16 + 4-x - 8\sqrt{4-x}$$

$$-8 = -8\sqrt{4-x}$$

$$1 = \sqrt{4-x}$$

$$1 = 4-x \Rightarrow +x = +3$$

$$x \leq 12$$

$$x \leq 4$$

$$\begin{cases} x \leq 4 \\ x = 3 \end{cases} \quad \boxed{x=3}$$

N.443

$$\frac{x^2 - bx}{x+b} < 0$$

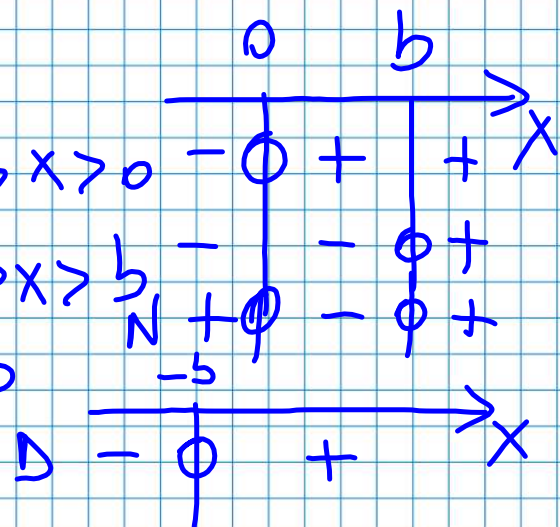
$$b > 0$$

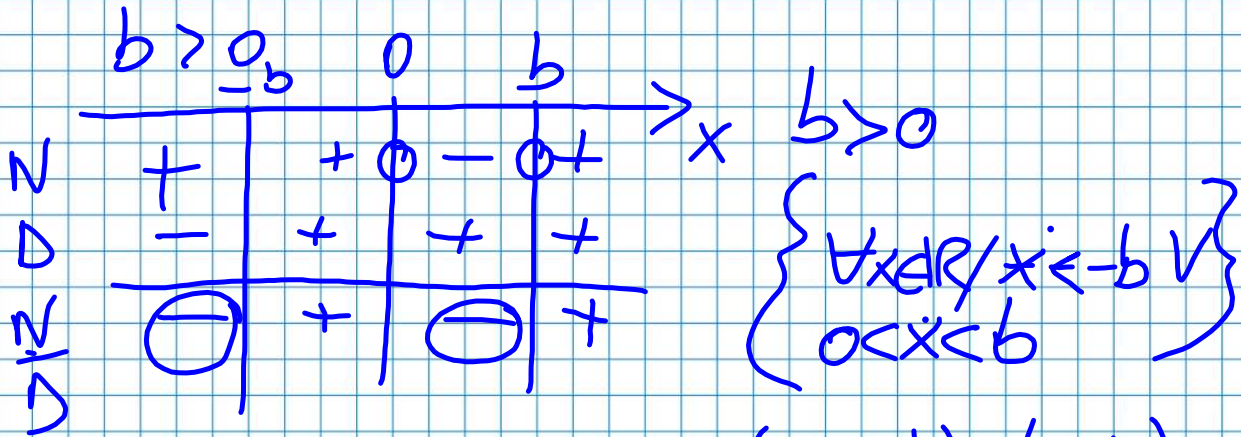
$$N) \quad x^2 - bx > 0$$

$$x(x-b) > 0$$

$\rightarrow x > 0$
 $\rightarrow x > b$

$$D) \quad x+b > 0 \quad x > -b$$





$b > 0$

$$\left\{ \begin{array}{l} \forall x \in \mathbb{R} / x < -b \\ 0 < x < b \end{array} \right\}$$

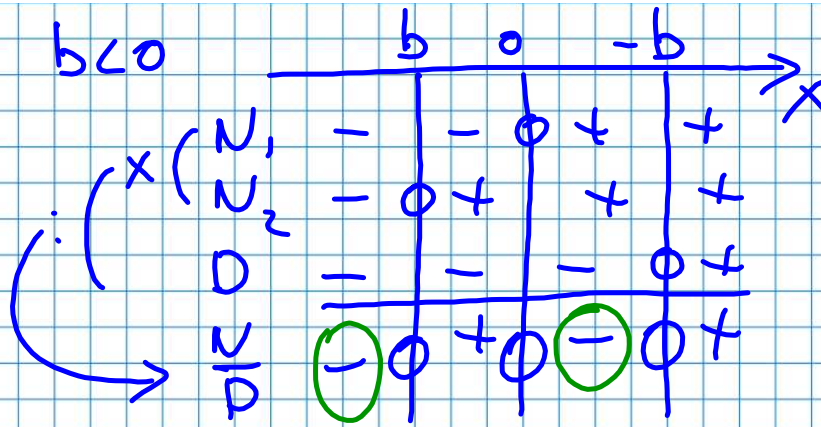
$$(-\infty; -b) \cup (0; b)$$

$b < 0$

$$\frac{x^2 - bx}{x + b} < 0$$

$N > 0 \quad x^2 - bx > 0 \quad x(x - b) > 0 \rightarrow x > 0$

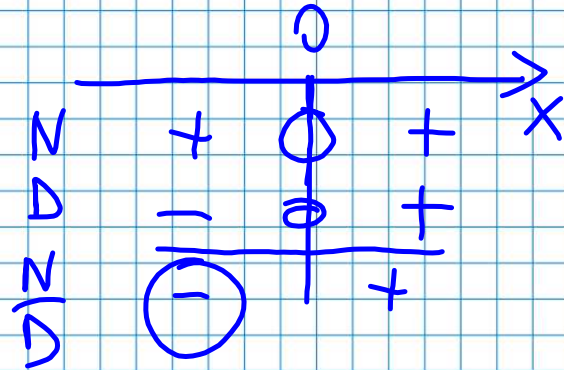
$D > 0 \quad x + b > 0 \quad x > -b \quad \rightarrow x > b$



$b = 0$

$$\frac{x^2 - 5x}{x + b} < 0$$

$N > 0 \quad x^2 > 0$
 $D > 0 \quad x > 0$



V 228 PAG 37

$$2x(x-1) - K(x+2) + 3K \geq 0$$

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

$$2x^2 - 2x - Kx + K \geq 0$$

$$2x^2 + x(-2-K) + K \geq 0$$

$$a = 2 > 0$$

