DISEQUAZIONI FRATTE

M3004

$$\frac{A(x)}{B(x)} > 0 \quad ; \quad \frac{A(x)}{B(x)} < 0 \quad ; \quad \frac{A(x)}{B(x)} \geq 0 \quad ; \quad \frac{A(x)}{B(x)} \leq 0$$

ESEMPI

$$\frac{-x^2+7x-12}{2x^2-7x+3} > 0$$

N

D

N > 0 $\quad -x^2+7x-12>0$

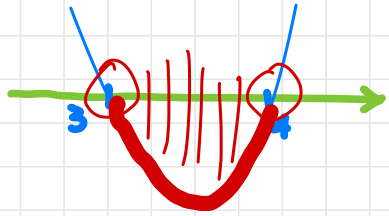
$+x^2-7x+12<0$

$x^2-7x+12=0$ E.AS

$a=1 \quad b=-7 \quad c=12$

$\Delta = 49 - 4 \cdot 1 \cdot 12 = 1$

$x_1 = \frac{7+1}{2} = 4$ $\qquad x_2 = \frac{7-1}{2} = 3$



$3 < x < 4$

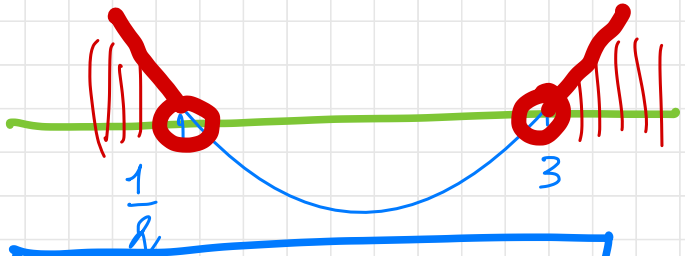
N

$D > 0$ $\quad 2x^2 - 7x + 3 > 0$ $\quad 2x^2 - 7x + 3 = 0$ Eq. 1gs

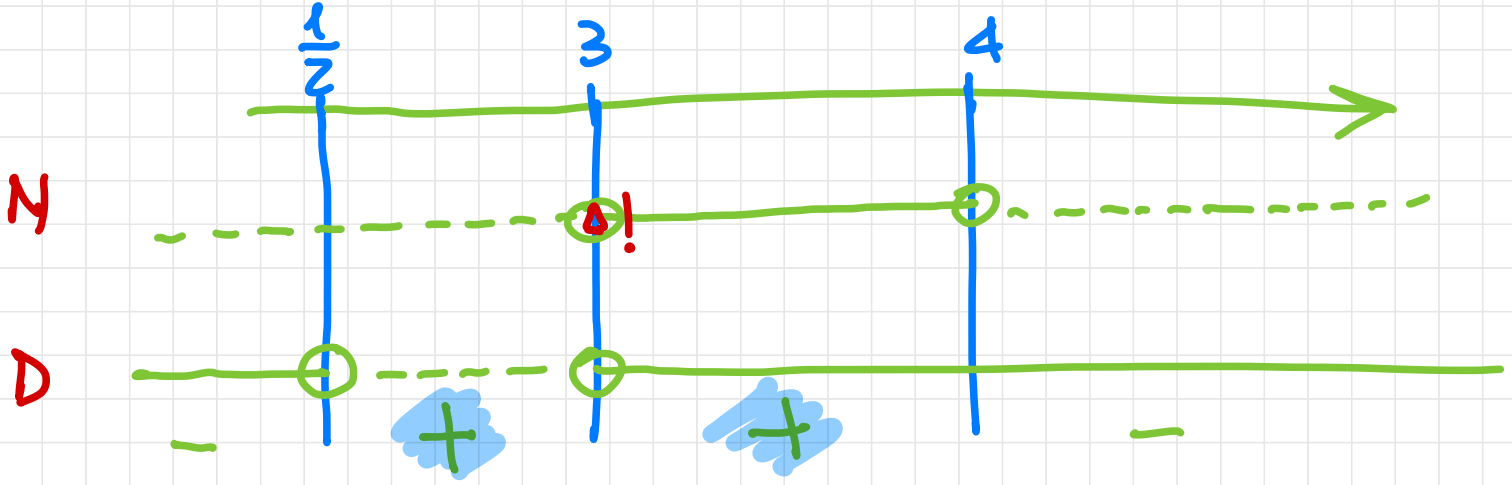
$a = 2 \quad b = -7 \quad c = +3$ $\quad \Delta = 49 - 24 = 25$

$x_1 = \frac{7+5}{4} = 3$

$x_2 = \frac{7-5}{4} = \frac{1}{2}$



$x < \frac{1}{2} \quad \vee \quad x > 3$ $\quad D$



$$\frac{1}{2} < x < 4 \quad ; \quad x \neq 3$$

$$\frac{x(-x+8)-(2x+9)}{x^2-4} \leq 0$$

$$\frac{-x^2+8x-2x-9}{x^2-4} \leq 0$$

N

$$\frac{-x^2+6x-9}{x^2-4} \leq 0$$

D

$N \geq 0 \qquad -x^2+6x-9 \geq 0$

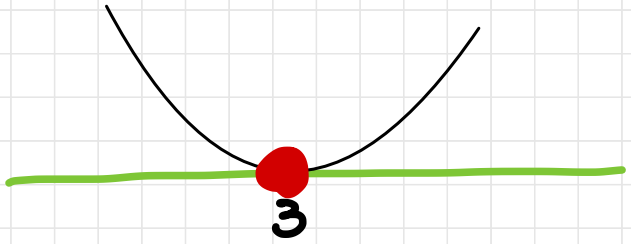
$$x^2-6x+9 \leq 0$$

$x^2-6x+9=0$ Eq. Ass

$a=1 \quad b=-6 \quad c=+9$

$\Delta = 36 - 4 \cdot 1 \cdot 9 = 0$

$x_1 \equiv x_2 = \frac{6 \pm 0}{2} = 3$



$\boxed{x = 3}$ N

$D > 0 \qquad x^2 - 4 > 0$

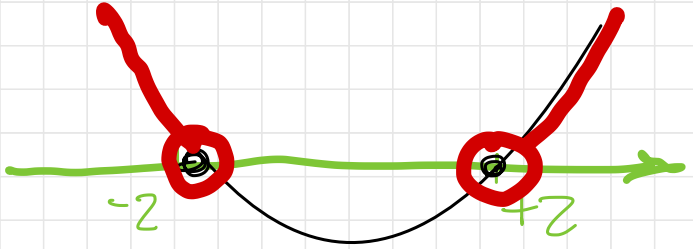
$x^2 - 4 = 0 \qquad x^2 = 4$

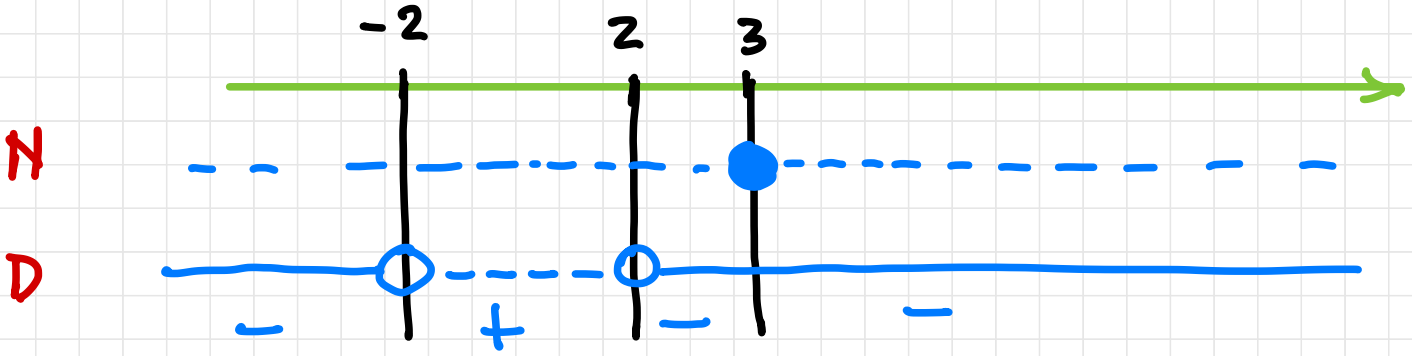
Eq. ASS

$x_1 = 2$

$x_2 = -2$

$\boxed{x < -2 \ \vee \ x > +2}$ D





$$x < -2 \quad \vee \quad x > 2$$