PAG. 139 N 167

$$\frac{2(x+1)(x-1)}{3} + \frac{x(x+2)}{6} \leq \frac{x^2+x(1+x)}{3}$$

$$\frac{4(x+1)(x-1) + x(x+2)}{6} \leq \frac{2x^2+2x(1+x)}{6}$$

$$4(x^2-1) + x^2 + 2x \leq 2x^2 + 2x + 2x^2$$

$$4x^2 - 4 + x^2 + 2x - 2x^2 - 2x - 2x^2 \leq 0$$

$$x^2 - 4 \leq 0$$

↓ HOMENTANEAMENTE

$$x^2 - 4 = 0 \quad x^2 = 4 \quad x = \pm 2$$

$\Delta > 0$

$$\boxed{-2 \leq x \leq 2}$$

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$$(x+5)^2 - 8(-x-5) + (-4)^2 \leq 0$$

$$x^2 + 25 + 10x + 8x + 40 + 16 \leq 0$$

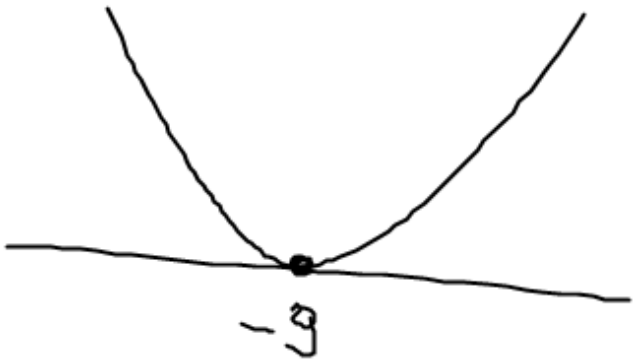
$$x^2 + 18x + 81 \leq 0$$

$(x+9)^2$

$$\frac{\Delta}{4} = 9^2 - 81 = 0$$

$(\Delta = 0)$

$$x = -\frac{b}{2a} = -9$$



$$\boxed{x = -9}$$

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$$\left(x+\frac{1}{3}\right)^2-\frac{1}{3}\geq x-\frac{1}{4}$$

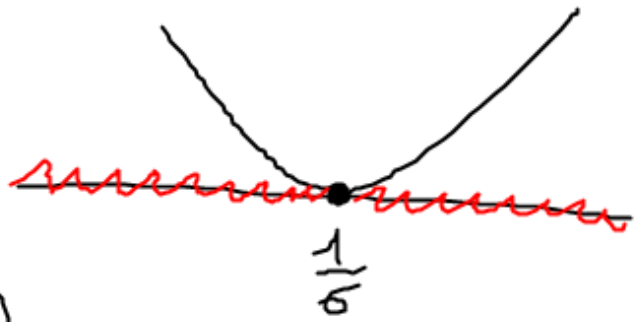
$$x^2+\frac{2}{3}x+\frac{1}{9}-\frac{1}{3}-x+\frac{1}{4}\geq 0$$

$$\frac{36x^2+24x+4-12-36x+9}{36}\geq 0$$

$$36x^2-12x+1\geq 0$$

$$\Delta = 144-144=0$$

$$-\frac{b}{2a}=\frac{1}{6}$$



$$\forall x\in\mathbb{R}$$

PAG. 144 N 237

$$\frac{x^2-3x+2}{x^2+2x-8} < 0 \qquad \frac{(x-2)(x-1)}{(x+4)(x-2)} < 0$$

$N > 0 \quad x^2-3x+2>0$

$\Delta = 9-8=1$

$x = \frac{3\pm 1}{2} = \begin{cases} 1 \\ 2 \end{cases}$

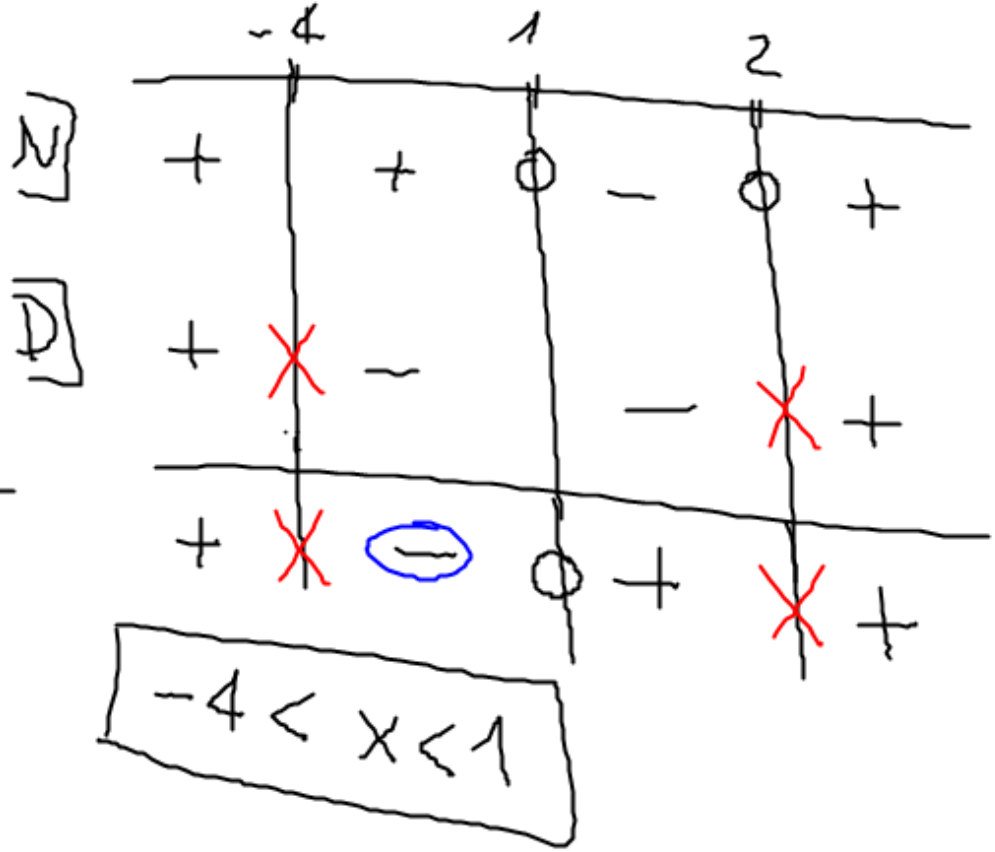
$x<1 \vee x>2$

$D>0 \quad x^2+2x-8>0$

$\Delta = 4+32=36$

$x = \frac{-2\pm 6}{2} = \begin{cases} -4 \\ 2 \end{cases}$

$x<-4 \vee x>2$



$-4 < x < 1$