Inéquation

$<$ $>$ $\leq$ $\geq$

$f(x) < 0$

$\Leftrightarrow$ $0 > f(x)$

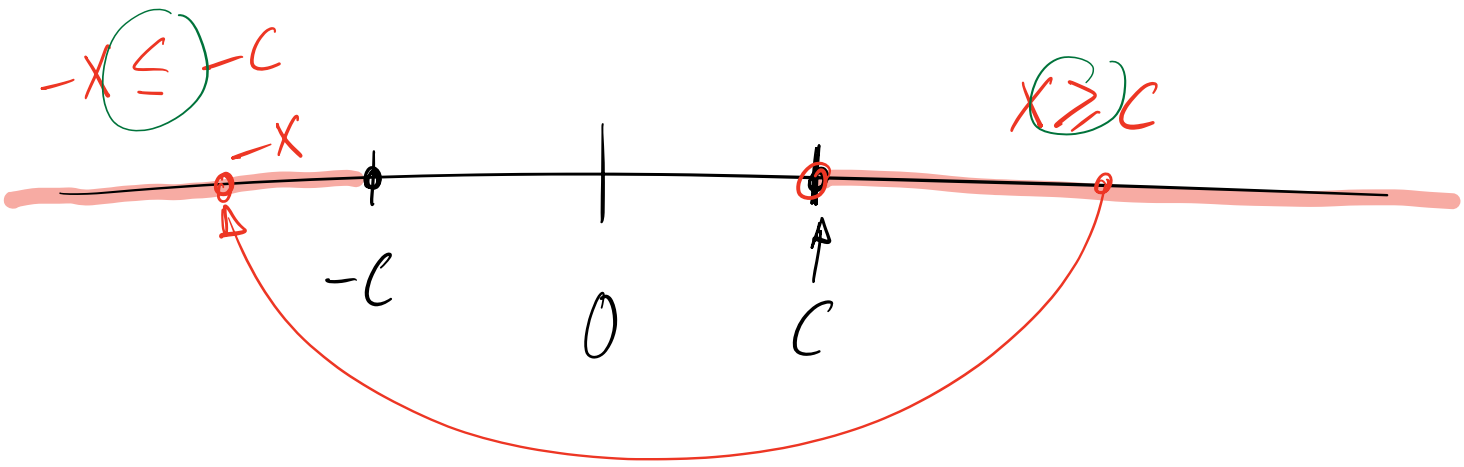
1er degré

$2x + 6 \geq 0$

$\Leftrightarrow$ $2x \geq -6$ $\div a$

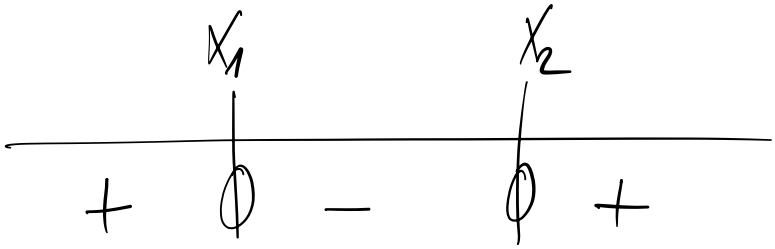
Si $a > 0$: $x \geq -\frac{6}{2}$

Si $a < 0$: $x \leq -\frac{6}{2}$ $\div a$



2ème degré

$ax^2+bx+c < 0 \iff x \in]x_1 ; x_2[$



← Par exemple ($\Delta > 0$, $a > 0$)

$a \neq 0$

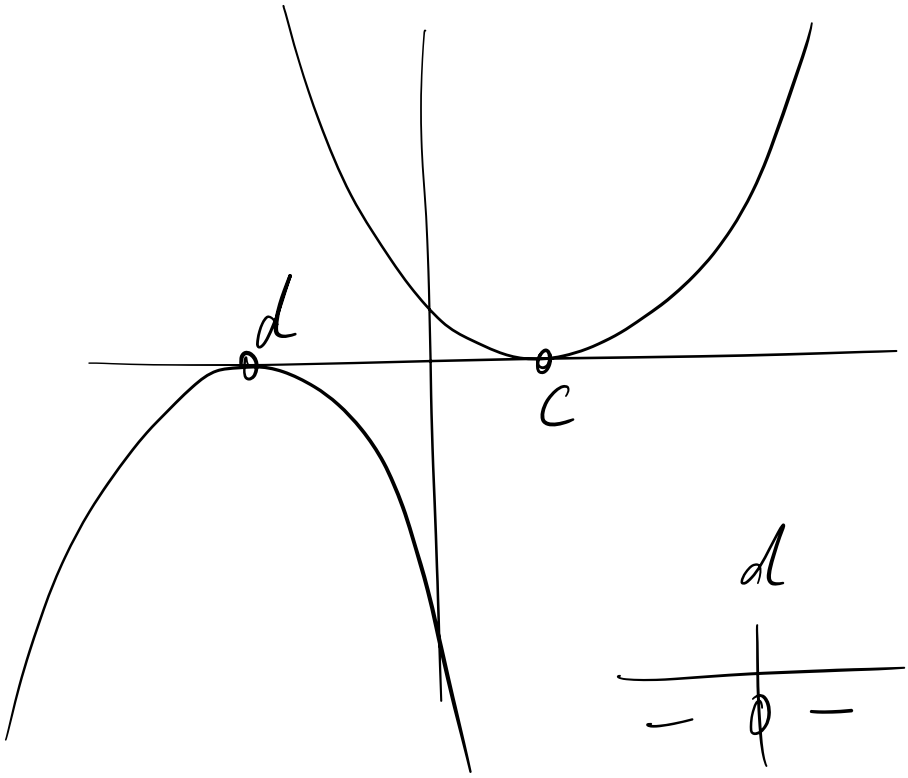
$f(x) < g(x)$

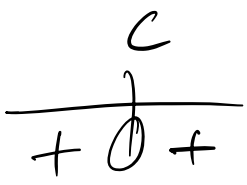
$a > 0$

$af(x) < ag(x)$

$a < 0$

$af(x) > ag(x)$


d
c


c
+ 0 +

d
- 0 -

$$3 > \frac{17}{5} x$$

$$\frac{17}{5} x < \frac{3}{1}$$

$$\frac{5}{17} \cdot \frac{17}{5} \cdot x < \frac{5}{17} \cdot \frac{3}{1}$$

$$1$$

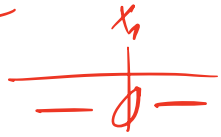
$$x < \frac{5 \cdot 3}{17}$$

$$x < \frac{15}{17} \qquad x \in \left] -\infty ; \frac{15}{17} \right[$$

$f(x)$

$-3x^2 - 42x - 147 \geq 0$

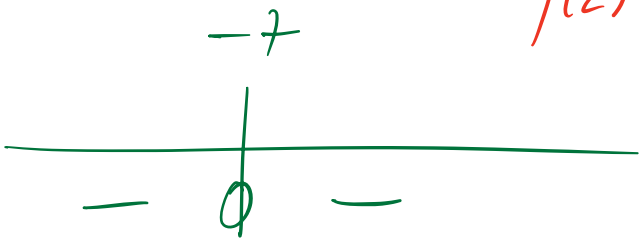
$a < 0 \quad \Delta = 0$

$\Rightarrow$ 

$-3x^2 - 42x - 147 = 0 \iff x = -7$

$-3 \cdot 4 - 42 \cdot 2 - 147 < 0 \Rightarrow S' = \{-7\}$

$f(2) < 0$



$\Rightarrow \quad S' = \{-7\}$

$x = -2$

$f(x)$

$$x^3 - 4x^2 + x + 6 > 0$$

$D_6 = \{\pm 1, \pm 2, \ldots\}$

Zeros

	1	−4	1	6
1		1	−3	−2
	1	−3	−2	4

	1	−4	1	6
−1		−1	5	−6
	1	−5	6	0

$$f(x) = (x+1)(x^2 - 5x + 6)$$

$$= (x+1)(x-2)(x-3)$$