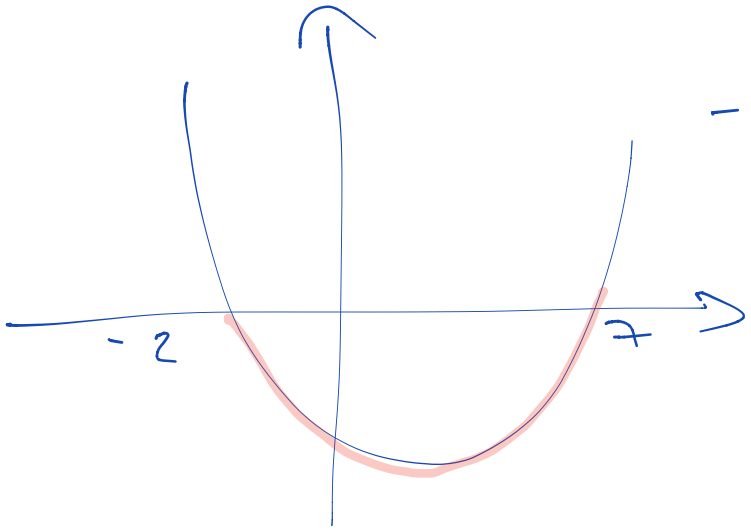
D.S. di 2° grado

1) $1x^2 - 5x - 14 \leq 0$

$x^2 - 5x - 14 = 0$

$(x-7)(x+2) = 0$

$x_1 = -2 \qquad x_2 = 7$



$-2 \leq x \leq 7$

D.C.E.

2) $2x^2 + 5x - 3 \geq 0$

$2x^2 + 5x - 3 = 0$

$\Delta = 25 + 24 = 49$

$$x_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{-5 \pm 7}{4}$$

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

$$x \leq -3 \vee x \geq \frac{1}{2}$$

3) $4x^2 - 20x + 25 > 0$

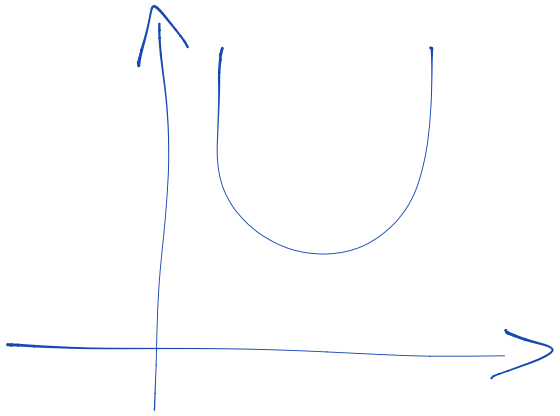
$$(2x-5)^2 > 0$$

$$\forall x \in \mathbb{R} - \left\{\frac{5}{2}\right\}$$

4) $x^2 + x + 1 < 0$

$$x^2 + x + 1 = 0$$

$$\Delta = 1 - 4 = -3 < 0$$



$S = \emptyset$

5) $x^2 + x + 1 > 0 \quad \forall x \in \mathbb{R}$

$\Delta < 0$

6) $-x^2 + 3\sqrt{2}\,x - 4 > 0$

$x^2 - 3\sqrt{2}\,x + 4 < 0$

$x^2 - 3\sqrt{2}\,x + 4 = 0$

$\Delta = 18 - 16 = 2$

$x_{1,2} = \dfrac{3\sqrt{2} \pm \sqrt{2}}{2}$ $\nearrow 2\sqrt{2}$ $\searrow \sqrt{2}$

$\sqrt{2} < x < 2\sqrt{2}$

Dis. di grado Sup. al II

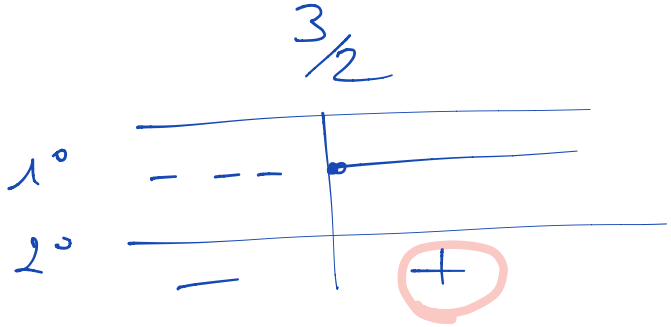
1) $8x^3 - 27 \geq 0$

$(2x-3)(4x^2+6x+9) \geq 0$

$\Delta < 0$

1° f. $2x-3 \geq 0 \quad x \geq 3/2$

2° f. $4x^2+6x+9 > 0 \quad \forall x \in \mathbb{R}$



$x \geq 3/2$

2) $-2x^3+8x^2+2x-8<0$

$2x^3-8x^2-2x+8>0$

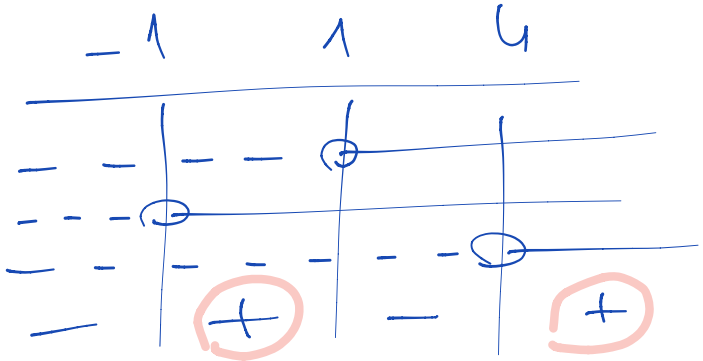
$2x(x^2-1)-8(x^2-1)>0$

$2(x-1)(x+1)(x-4)>0$

1° f. $x>1$

2° f. $x>-1$

3° f $x>4$



$-1<x<1 \cup x>4$

$S=(-1;1)\cup(4;+\infty)$