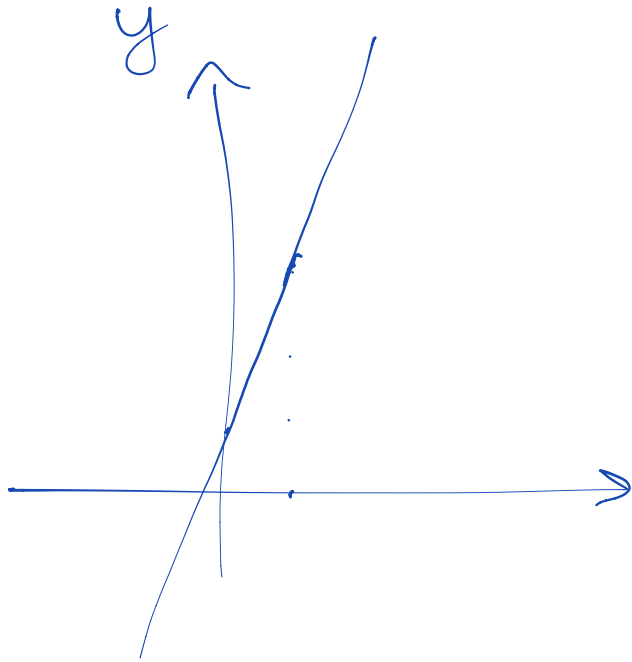


$$y = 2x + 1$$



x	y
0	1
1	3

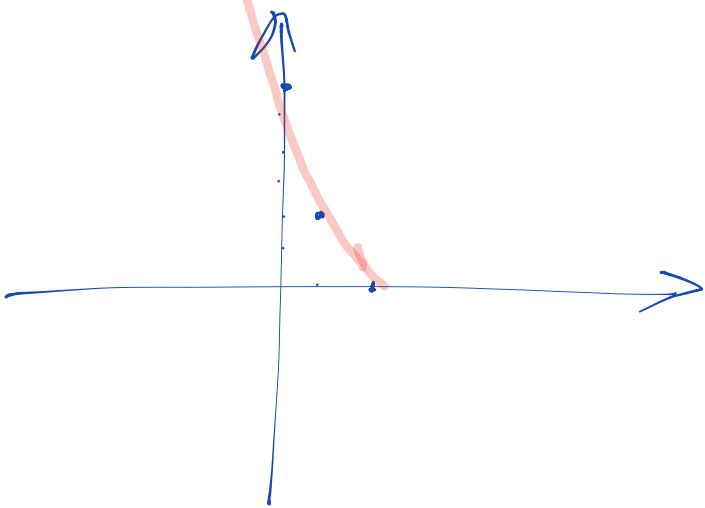
$$\begin{cases} y = 2x + 1 \\ y = 0 \end{cases}$$

$$2x + 1 = 0$$

$$x = -\frac{1}{2}$$

$$y = ax^2 + bx + c$$

$$y = x^2 - 5x + 6$$



x	y
0	6
1	2
-1	12
2	0

$$y = x^2 - 5x + 6$$

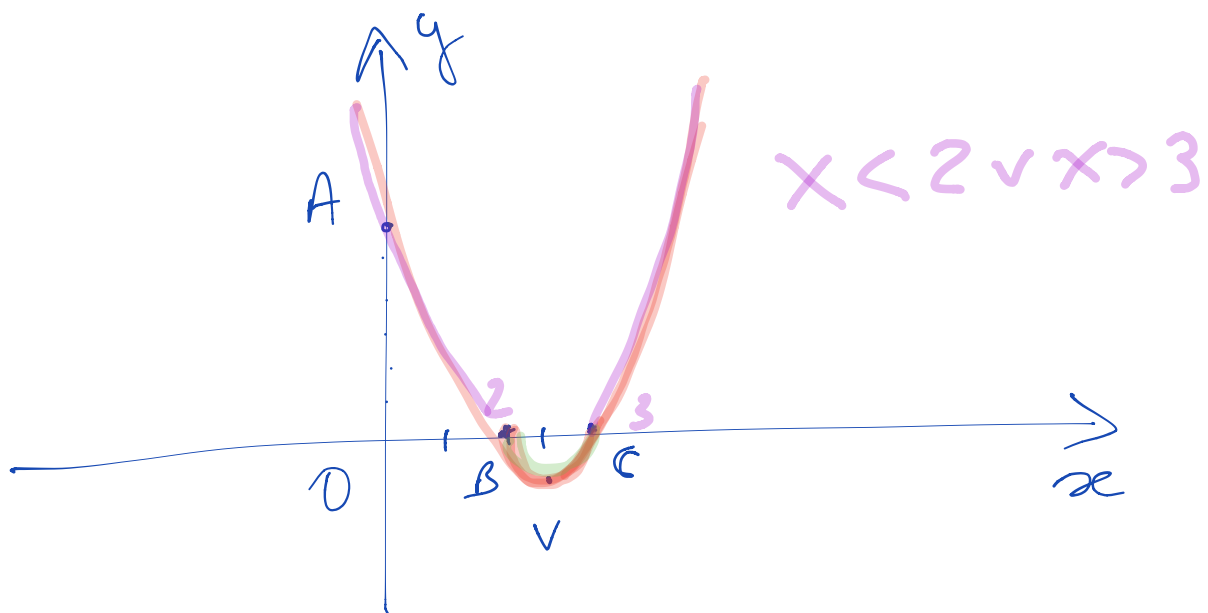
$$V\left(-\frac{b}{2a}; -\frac{\Delta}{4a}\right) \quad \Delta = 25 - 24 = 1$$

$$x_v = -\frac{b}{2a} = \frac{5}{2} \quad y_v = -\frac{1}{4}$$

$$V\left(\frac{5}{2}; -\frac{1}{4}\right)$$

$$\begin{cases} y = x^2 - 5x + 6 \\ x = 0 \end{cases} \Rightarrow A(0; 6)$$

$$\begin{cases} y = x^2 - 5x + 6 \\ y = 0 \end{cases} \Rightarrow \begin{aligned} x^2 - 5x + 6 &= 0 \\ (x-2)(x-3) &= 0 \\ x_1 &= 2 \quad x_2 = 3 \\ B(2; 0) \quad C(3; 0) \end{aligned}$$



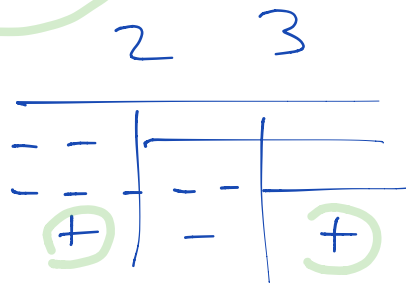
$$x^2 - 5x + 6 > 0$$

$$x^2 - 5x + 6 < 0 \quad 2 < x < 3$$

$$x^2 - 5x + 6 > 0$$

$$(x-2)(x-3) > 0$$

1<sup>o</sup> f:  $x-2 > 0, x > 2$   
 2<sup>o</sup> f:  $x-3 > 0, x > 3$




$$x < 2 \vee x > 3$$

$$x^2 - 5x + 4 < 0$$

$$x^2 - 5x + 4 = 0$$

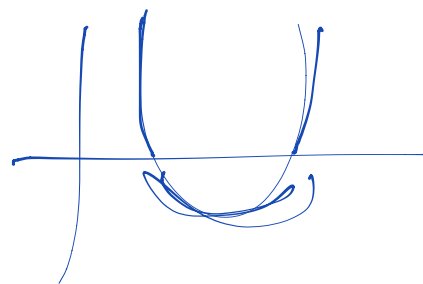
$$\Delta = 25 - 16 = 9$$

$$x = \frac{5 \pm 3}{2}$$


$$1 < x < 4$$

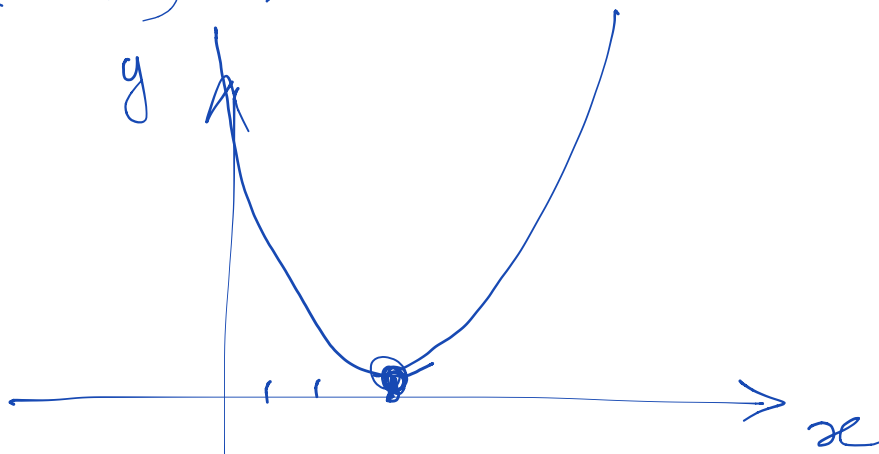
$$x^2 - 5x + 4 > 0$$

$$x < 1 \vee x > 4$$



$$x^2 - 6x + 9 > 0$$

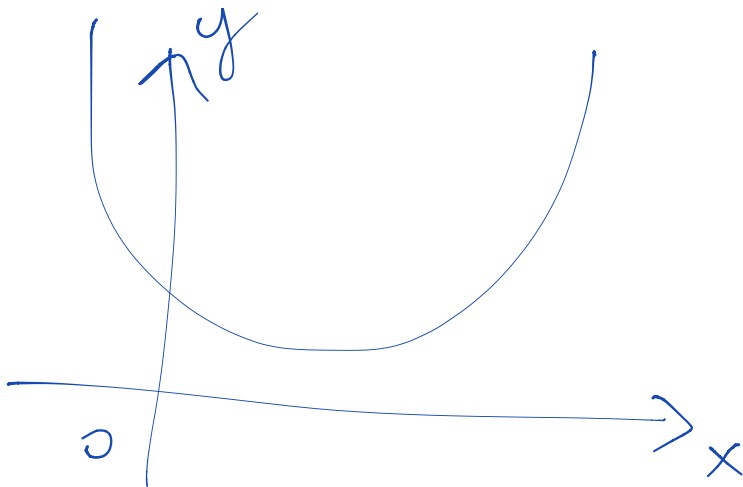
$$(x - 3)^2 > 0 \quad \forall x \in \mathbb{R} - \{3\}$$



$$x^2 - 6x + 9 \geq 0 \quad \forall x \in \mathbb{R}$$

$$x^2 - 6x + 9 < 0 \quad \nexists x \in \mathbb{R}$$

$$x^2 - 6x + 9 \leq 0 \quad x = 3$$



$$y = x^2 + x + 1$$

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

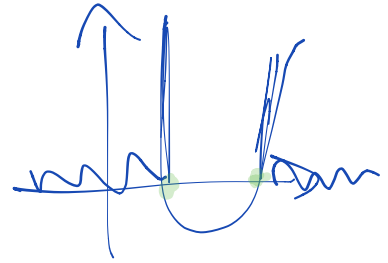
$$x^2 + x + 1 < 0 \quad \nexists x \in \mathbb{R}$$

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

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

$$\Delta = 1 - 8 = -7 < 0$$

$$S = \emptyset$$



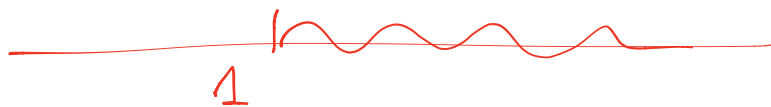
$$x^2 - 1 > 0$$

$$x^2 - 1 = 0; \quad x^2 = 1; \quad x = \pm 1$$

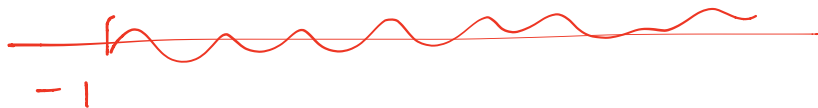
$$x < -1 \vee x > 1$$

$$x^2 - 1 > 0; \quad x^2 > 1; \quad \cancel{x > \pm 1}$$

$$x > 1$$

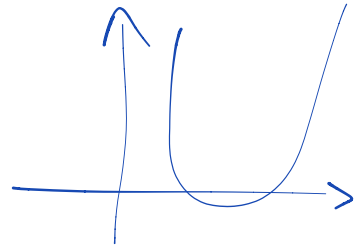


$$x > -1$$



D 1 C E  
 $\boxed{a}x^2 + bx + c \boxed{> 0}$

$$x^2 - 1 < 0$$



$$-1 < x < 1$$

$$x^2 - 1 > 0$$

$$x < -1 \vee x > 1$$

$$-2x^2 + x - 1 > 0$$

$$2x^2 - x + 1 < 0$$