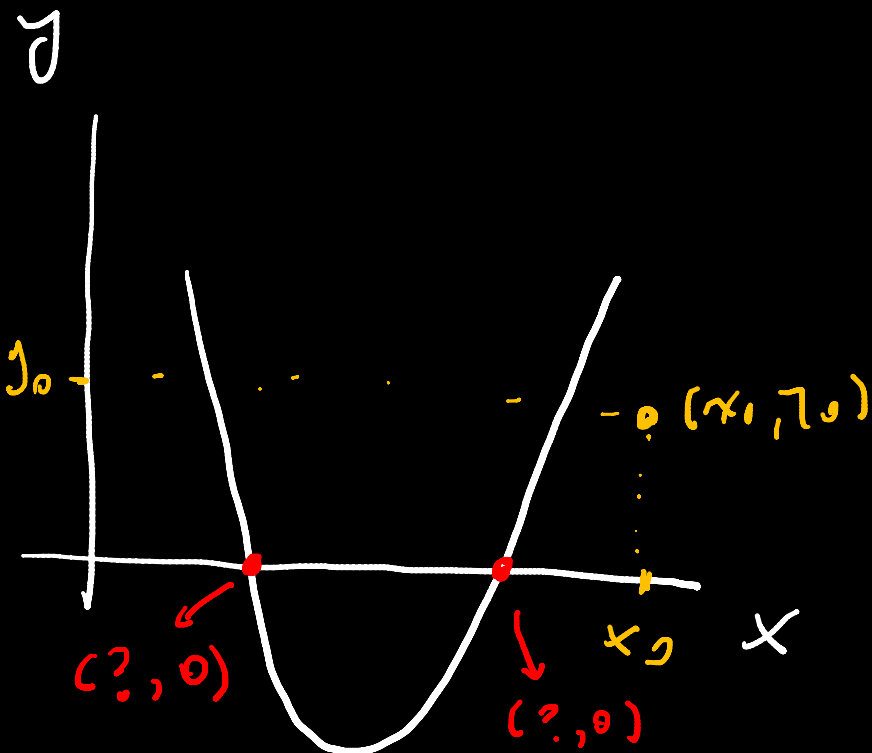


30/04/2025 QFTT-14

RAÍCES DE UNA PARÁBOLA (Función)



$$y = k(x-a)^2 + b$$

$$y = 2(x-3)^2 - 4$$

Para encontrar las raíces, hacemos:

$$2(x-3)^2 - 4 = 0$$

$$2(x-3)^2 = 4$$

$$(x-3)^2 = \frac{4}{2}$$

$$(x-3)^2 = 2 ; \quad \underbrace{x-3 = \sqrt{2}}_{x = 3 + \sqrt{2}} , \quad x-3 = -\sqrt{2}$$
$$x = 3 + \sqrt{2} ; \quad x = 3 - \sqrt{2}$$

Again (0424 VE2)

$$y = 8(x-1)^2 - 32, \text{ pour calculer les racines}$$

becomes $8(x-1)^2 - 32 = 0$

$$8(x-1)^2 = 32 \rightarrow (x-1)^2 = 4$$

$$\therefore x-1 = 2 \quad ; \quad x-1 = -2$$

$$x = 3 \quad ; \quad x = -1$$

Racines



Outro exercício

$$y = 3(x-2)^2 + 6$$



no three raíces.

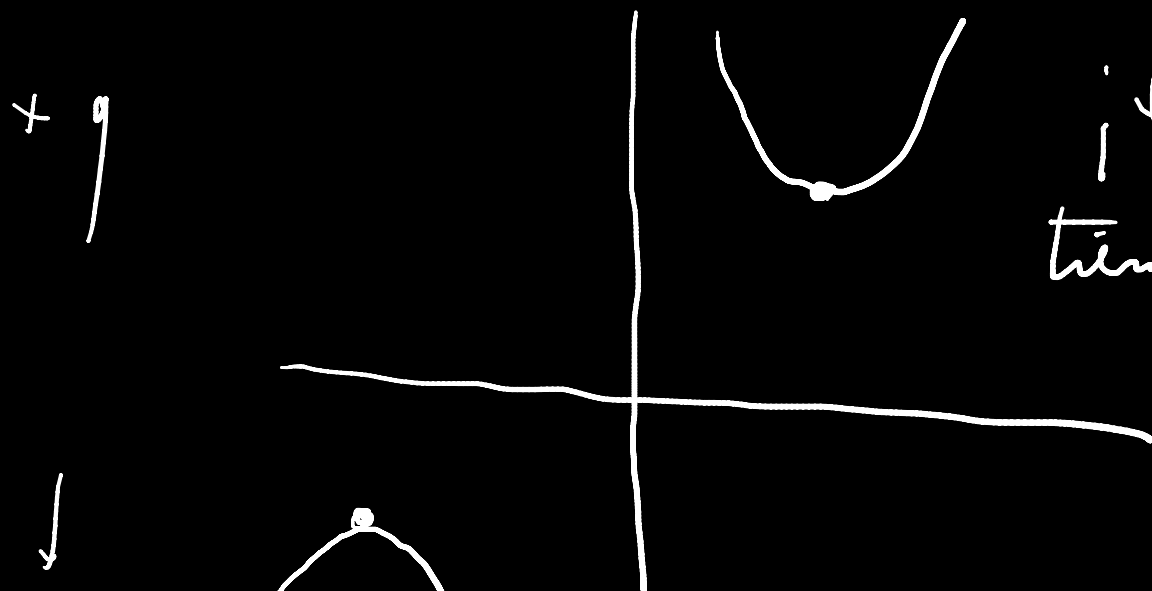
o

$$y = k(x-a)^2 + b$$

quando $k > 0$

têm DISTINTAS raízes

HAY RAÍCES!



→ +

i? Parabole en pointes !

$$a) \quad y = 7(x+1)^2 - 49$$

$$7(x+1)^2 - 49 = 0$$

$$(x+1)^2 = 7$$

$$x+1 = \sqrt{7} \quad ; \quad x+1 = -\sqrt{7}$$

$$x = -1 + \sqrt{7} \quad ; \quad x = -1 - \sqrt{7}$$

$$b) \quad y = -3(x+2)^2 + 5 \rightarrow -3(x+2)^2 + 5 = 0$$

$$-3(x+2)^2 = -5 \rightarrow (x+2)^2 = \frac{-5}{-3} \rightarrow (x+2)^2 = \frac{5}{3}$$

$$x+2 = \sqrt{\frac{5}{3}} \quad ; \quad x+2 = -\sqrt{\frac{5}{3}} \quad ; \quad x = -2 + \sqrt{\frac{5}{3}} \quad ; \quad x = -2 - \sqrt{\frac{5}{3}}$$