

$$A(-1;0) \quad B(0;5) \quad C(2;3)$$

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

$$\begin{cases} a - b + c = 0 \\ c = 5 \\ 4a + 2b + c = 3 \end{cases}$$

$$\begin{cases} a - b = -5 \\ c = 5 \\ 4a + 2b = -2 \end{cases} \quad \begin{cases} a = -5 + b \\ c = 5 \\ 4(-5 + b) + 2b = -2 \end{cases}$$

$$\begin{cases} a = -5 + b \\ c = 5 \\ -20 + 6b = -2 \end{cases} \quad \begin{cases} a = -5 + b \\ c = 5 \\ \frac{+6b}{6} = \frac{+18}{6} \end{cases}$$

$$\begin{cases} a = -2 \\ b = 3 \\ c = 5 \end{cases}$$

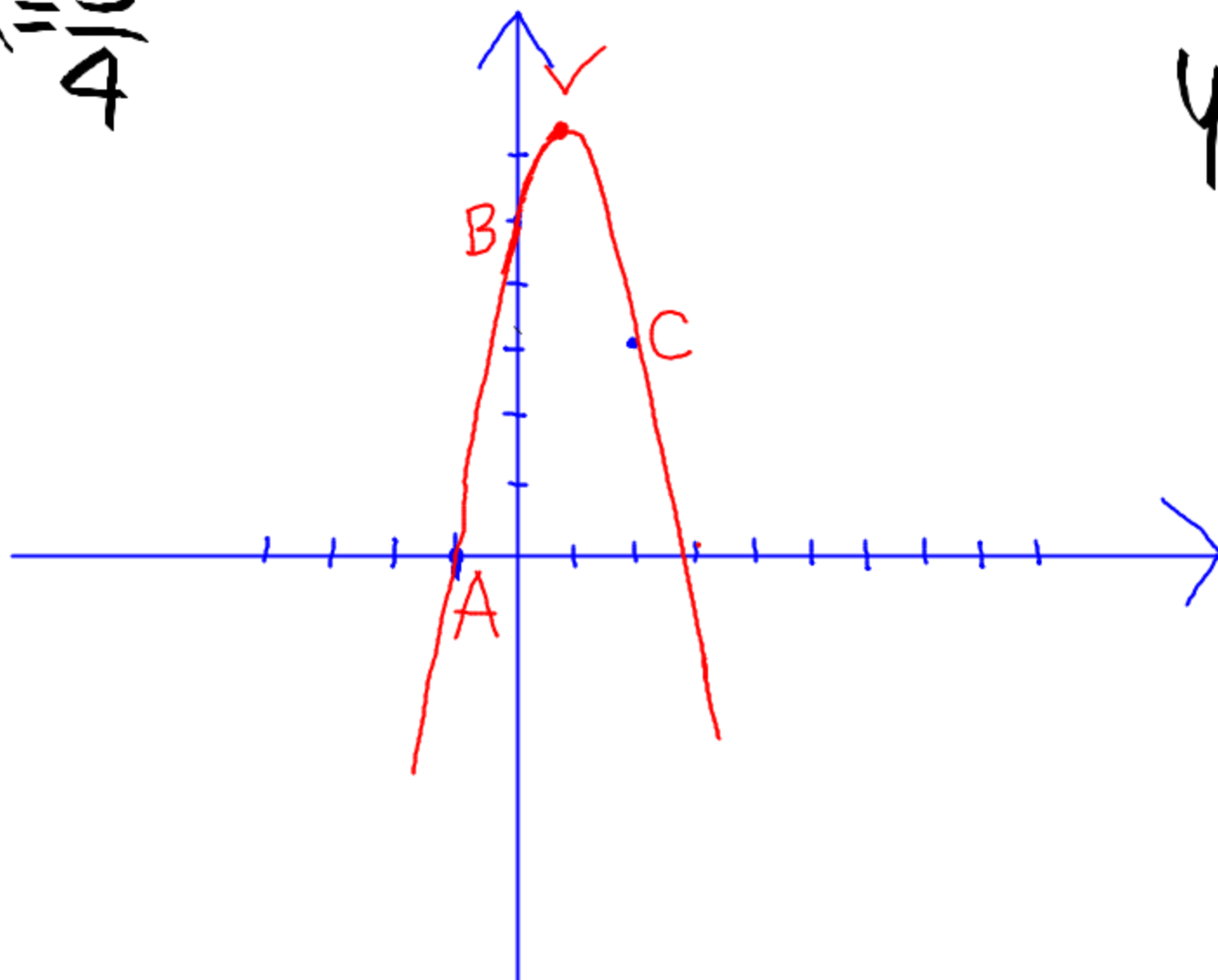
$$y = -2x^2 + 3x + 5$$

asse di simmetria: $\frac{-3}{-4} \Rightarrow x = \frac{3}{4}$

$$\begin{cases} y = -2x^2 + 3x + 5 \\ x = \frac{3}{4} \end{cases} \quad \begin{cases} y = -2\left(\frac{3}{4}\right)^2 + 3\left(\frac{3}{4}\right) + 5 \\ x = \frac{3}{4} \end{cases}$$

$$\begin{cases} y = -2\left(\frac{9}{16}\right) + \frac{9}{4} + 5 \\ x = \frac{3}{4} \end{cases} \quad \begin{cases} y = -\frac{18}{8} + \frac{9}{4} + 5 \\ x = \frac{3}{4} \end{cases} \quad \begin{cases} y = \frac{-9 + 18 + 40}{8} \\ x = \frac{3}{4} \end{cases}$$

$$\begin{cases} y = \frac{49}{8} \\ x = \frac{3}{4} \end{cases}$$



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

$$y = \frac{1}{2}x^2 - x + \frac{1}{2}$$

$$\begin{cases} y = \frac{1}{2}x^2 - x + \frac{1}{2} \\ x = 0 \end{cases} \quad \begin{cases} y = \frac{1}{2} \\ x = 0 \end{cases} \quad (0; \frac{1}{2})$$

$$\begin{cases} y = \frac{1}{2}x^2 - x + \frac{1}{2} \\ y = 0 \end{cases} \quad \begin{cases} \frac{1}{2}x^2 - x + \frac{1}{2} = 0 \\ y = 0 \end{cases} \quad \begin{cases} x = 1 \text{ doppia} \\ y = 0 \end{cases}$$

$$(1; 0)$$

asse di simmetria

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

$$x = 1$$

Vertice $(1; 0)$

$$\Delta = b^2 - 4ac$$

$$= 1 - 1 = 0$$

$$x_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{1 \pm 0}{1}$$

$$= \begin{matrix} / \\ \backslash \end{matrix} \begin{matrix} 1 \\ 1 \end{matrix}$$

più semplicemente

$$\begin{aligned} \frac{1}{2}x^2 - x + \frac{1}{2} &= \frac{1}{2}(x^2 - 2x + 1) = \\ &= \frac{1}{2}(x-1)^2 \end{aligned}$$

oppure

$$\frac{1}{2}x^2 - \frac{1}{2}x - \frac{1}{2}x + \frac{1}{2}$$

$$\frac{1}{2}x(x-1) - \frac{1}{2}(x-1)$$

$$(x-1)\left(\frac{1}{2}x - \frac{1}{2}\right)$$