

9/12/2022

333

$$\frac{1}{x^2 - 1} + \frac{1}{x^2 + 3x + 2} = \frac{5}{2x^2 + 4x + 2}$$

$$\frac{1}{(x-1)(x+1)} + \frac{1}{(x+2)(x+1)} = \frac{5}{2(x^2 + 2x + 1)}$$

$$\frac{1}{(x-1)(x+1)} + \frac{1}{(x+2)(x+1)} = \frac{5}{2(x+1)^2}$$

C.E.

 $x \neq \pm 1$ $x \neq -2$

$$\frac{2(x+1)(x+2) + 2(x-1)(x+1)}{2(x+1)^2(x-1)(x+2)} = \frac{5(x-1)(x+2)}{2(x+1)^2(x-1)(x+2)}$$

$$2(x^2 + 3x + 2) + 2(x^2 - 1) = 5(x^2 + 2x - x - 2)$$

$$2x^2 + 6x + 4 + 2x^2 - 2 = 5x^2 + 10x - 5x - 10$$

$$-x^2 + x + 12 = 0$$

$$x^2 - x - 12 = 0$$

$$(x-4)(x+3) = 0$$

$$x = 4$$

$$\vee x = -3$$

does not control C.E.

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

$$-\frac{b}{2a} = -\frac{-3}{-4} = -\frac{3}{4} \quad \Delta = 9 + 40 = 49$$

$$-\frac{\Delta}{4a} = -\frac{49}{-8} = \frac{49}{8}$$

$$V\left(-\frac{3}{4}, \frac{49}{8}\right)$$

$$\rightarrow \text{ oppure } -2\left(-\frac{3}{4}\right)^2 - 3\left(-\frac{3}{4}\right) + 5 = -2\frac{9}{16} + \frac{9}{4} + 5 = \frac{-9 + 18 + 40}{8} = \frac{49}{8}$$

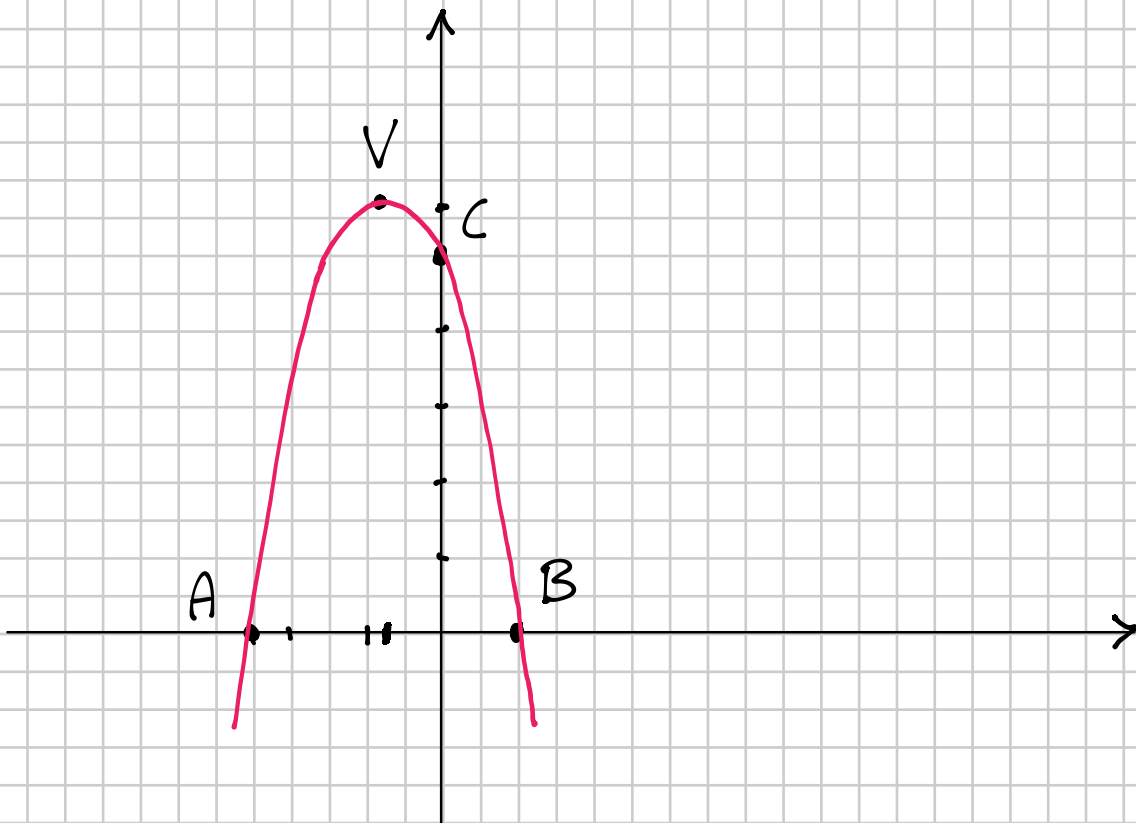
$$\begin{cases} y = 0 \text{ (axe } x) \end{cases}$$

$$\begin{cases} -2x^2 - 3x + 5 = 0 \Rightarrow 2x^2 + 3x - 5 = 0 \quad x = \frac{-3 \pm 7}{4} = \begin{cases} -\frac{5}{2} \\ 1 \end{cases} \end{cases}$$

$$A\left(-\frac{5}{2}, 0\right) \quad B(1, 0)$$

$$\begin{cases} x = 0 \\ y = 5 \end{cases}$$

$$C(0, 5)$$



$$y = x^2 + 4x + 5$$

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

$$y_v = (-2)^2 + 4(-2) + 5 = 4 - 8 + 5 = 1$$

$$V(-2, 1)$$

$$\begin{cases} y=0 \text{ (axe } x) \\ y=x^2+4x+5 \end{cases}$$

$$\Rightarrow x^2 + 4x + 5 = 0 \quad \Delta = 16 - 20 = -4$$

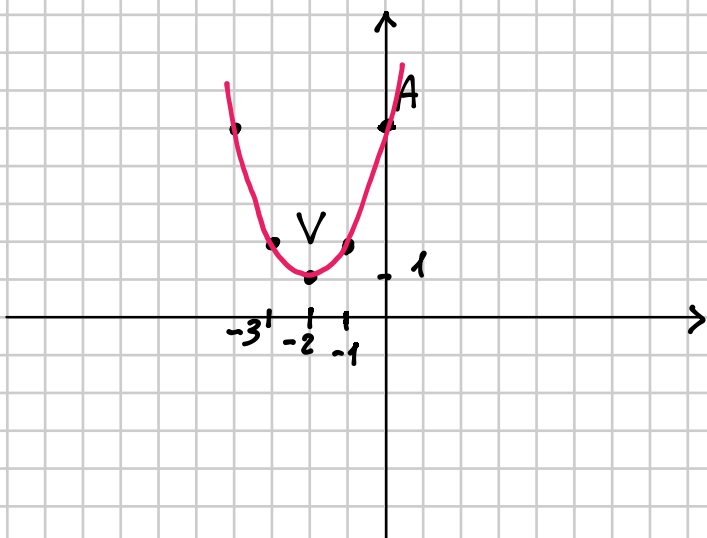
IMPOSS. IN \mathbb{R}

la parabola NON interseca
l'axe x

$$\begin{cases} x=0 \text{ (axe } y) \\ y=x^2+4x+5 \end{cases}$$

$$\begin{cases} x=0 \\ y=5 \end{cases}$$

$$A(0, 5)$$



x	y
-1	2
-3	2

649 Il quadrato della metà di un numero, diminuito del numero stesso, è uguale a 1. Qual è il numero?

$$[2 - 2\sqrt{2} \text{ o } 2 + 2\sqrt{2}]$$

$x = \text{numero da trovare}$

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

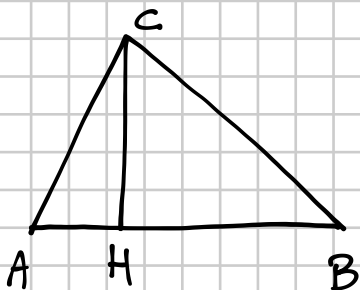
$$\frac{x^2}{4} - x - 1 = 0$$

$$x^2 - 4x - 4 = 0 \quad \Delta = 4 + 4 = 8$$

$$x = 2 \pm \sqrt{8} = 2 \pm 2\sqrt{2}$$

694 In un triangolo ABC , l'altezza CH relativa alla base AB è 5 cm in meno della base stessa. L'area del triangolo è 42 cm^2 . Determina le lunghezze del lato AB e dell'altezza CH .

$$[AB = 12 \text{ cm}, CH = 7 \text{ cm}]$$



$$\overline{CH} = \overline{AB} - 5$$

$$A_{ABC} = 42$$

$$\overline{AB} = x \quad \overline{CH} = x - 5$$

$$\frac{1}{2} x (x - 5) = 42$$

$$\frac{1}{2} x^2 - \frac{5}{2} x - 42 = 0$$

$$x^2 - 5x - 84 = 0$$

$$\Delta = 25 + 336 = 361 = 19^2$$

$$x = \frac{5 \pm 19}{2} = \begin{cases} -\frac{14}{2} = -7 \text{ N.A.} \\ \frac{24}{2} = 12 \end{cases}$$

$$\boxed{\overline{AB} = 12 \quad \overline{CH} = 12 - 5 = 7}$$