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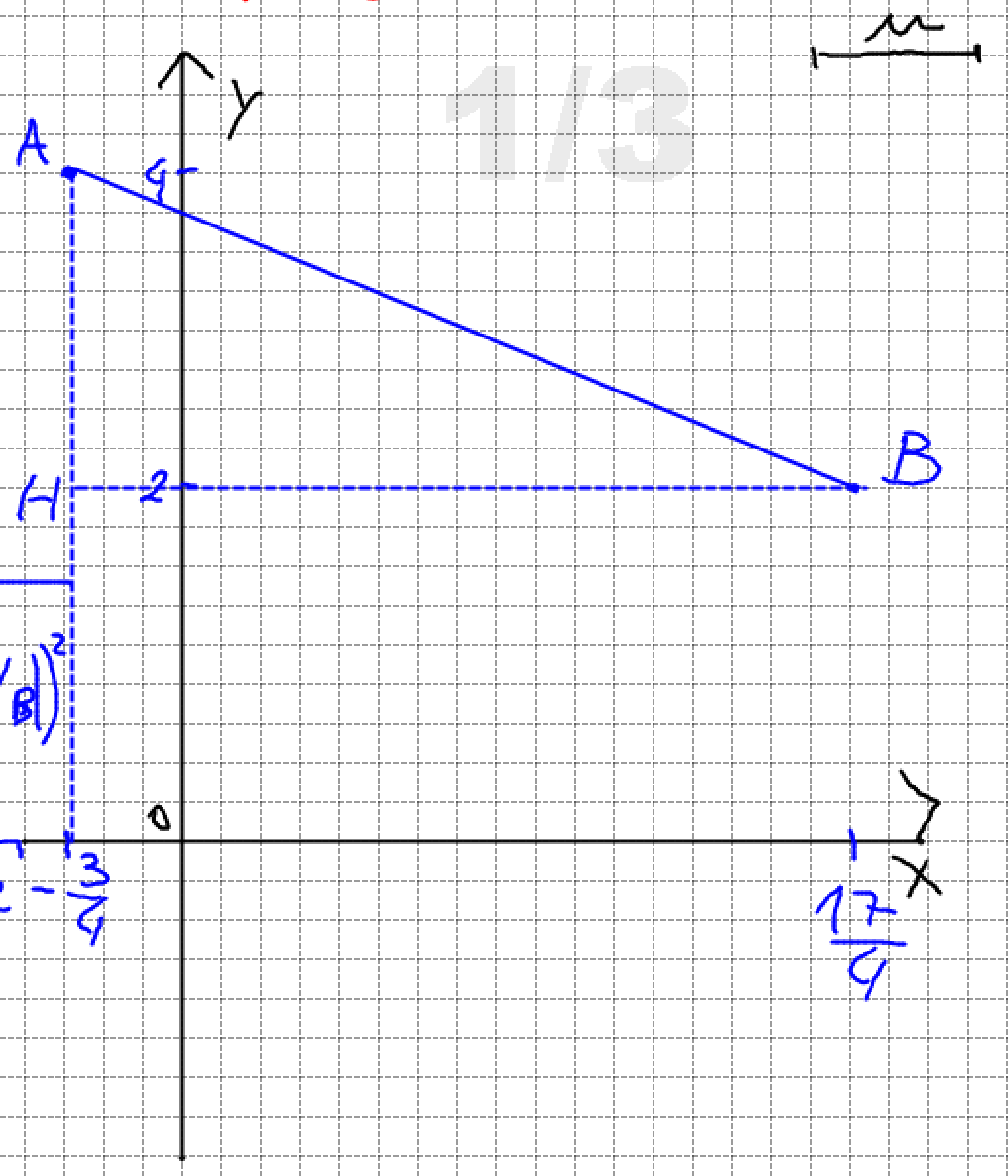
$A\left(-\frac{3}{4}; 4\right)$

$B\left(\frac{17}{4}; 2\right)$



$$\overline{AB} = \sqrt{\left(|x_B - x_A|\right)^2 + \left(|y_A - y_B|\right)^2}$$

$$= \sqrt{\left[\frac{17}{4} - \left(-\frac{3}{4}\right)\right]^2 + (4-2)^2}$$

$$= \sqrt{25 + 4} = \sqrt{29}$$

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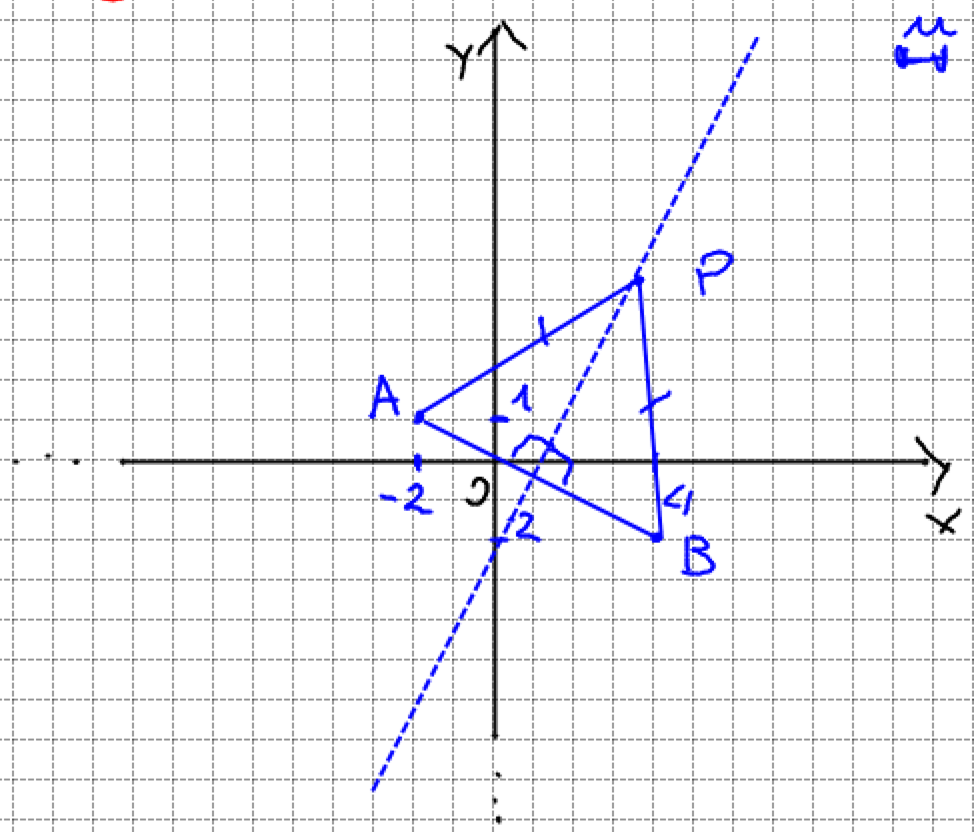
$P(k+2; k+1)$

$A(-2; 1)$

$B(4; -2)$

$\overline{AP} = \overline{BP}$



$$\sqrt{\left(|x_P - x_A|\right)^2 + \left(|y_P - y_A|\right)^2} = \sqrt{\left(|x_P - x_B|\right)^2 + \left(|y_P - x_B|\right)^2}$$

$$\sqrt{(x_P + 2)^2 + (y_P - 1)^2} = \sqrt{(x_P - 4)^2 + (y_P + 2)^2}$$

$$x_P^2 + 4x_P + 4 + y_P^2 - 2y_P + 1 = x_P^2 - 8x_P + 16 + y_P^2 + 4y_P + 4$$

$$12x_P - 6y_P = 15$$

$$4x_P - 2y_P = 5$$

$$4(k+2) - 2(k+1) = 5$$

$$4k + 8 - 2k - 2 = 5$$

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

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$A(2a+3;2)$

$B(1;2a)$

$\overline{AB}=4$

$\overline{AB}=4$

$$\sqrt{(x_B-x_A)^2+(y_B-y_A)^2}=4$$

$$\sqrt{(1-2a-3)^2+(2a-2)^2}=4$$

$$\sqrt{(-2a-2)^2+4a^2+4-8a}=4$$

$$\sqrt{4a^2+4+8a+4a^2+4-8a}=4$$

$$\sqrt{8a^2+8}=4$$

$$\begin{cases} 8a^2+8\geq 0 \\ 8a^2+8=16 \end{cases}$$

$$\begin{cases} \forall a\in\mathbb{R} \\ a^2=1 \rightarrow a=\pm 1 \end{cases}$$

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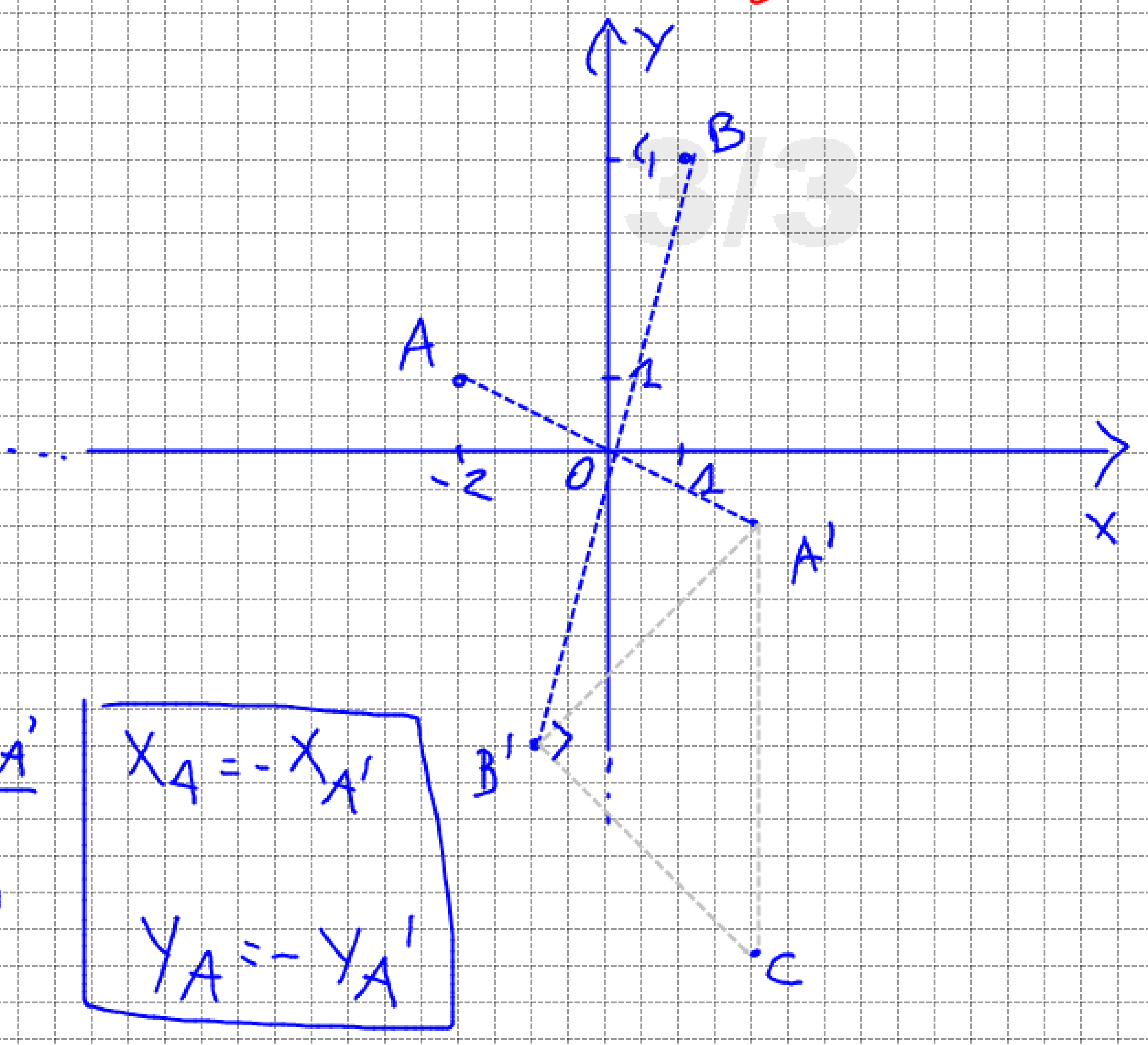
$A(-2;1)$

$B(1;4)$



$AO = OA'$

$BO = OB'$

$$\begin{cases} \overset{x_M}{0} = \dfrac{x_A + x_{A'}}{2} \\ \overset{y_M}{0} = \dfrac{y_A + y_{A'}}{2} \end{cases}$$

$$\boxed{\begin{array}{l} x_A = -x_{A'} \\ y_A = -y_{A'} \end{array}}$$

$$\boxed{\begin{array}{l} x_B = -x_{B'} \\ y_B = -y_{B'} \end{array}}$$

$A'(2;-1)$ $B'(-1;-4)$

$C \in$ IV quadrante

$$\begin{cases} x_C > 0 \\ y_C < 0 \\ Area_{A'B'C} = 12 \\ A'\hat{B'}C = 90° \rightarrow \text{teorema di Pitagora} \end{cases}$$

$$\begin{cases} ① \ \dfrac{\overline{A'B'} \cdot \overline{B'C}}{2} = 12 \\ ② \ (\overline{A'C})^2 = (\overline{A'B'})^2 + (\overline{B'C})^2 \end{cases}$$

① $\sqrt{[2-(-1)]^2 + [-1-(-4)]^2}\left(\sqrt{(x_C+1)^2+(y_C+4)^2}\right) = 24$

$$\left(\sqrt{18}\right)\left(\sqrt{(x_C+1)^2+(y_C+4)^2}\right) = 24$$

$$\left(\sqrt{(x_C+1)^2+(y_C+4)^2}\right) = \frac{8}{\sqrt{2}}$$

② $(x_C-2)^2 + (y_C+1)^2 = 18 + (x_C+1)^2 + (y_C+4)^2$

$$-4x_C + 4 + 2y_C + 1 = 18 + 2x_C + 1 + 8y_C + 16$$

$$-6x_C - 6y_C = 29$$

$$x_C = \frac{-29 + 6y_C}{+6}$$