

$$A\left(\frac{4}{3}, -2\right) \quad B\left(\frac{5}{2}, 6\right)$$

$$M_{AB}\left(\frac{3}{2}, 2\right)$$

$$y - 2 = m\left(x - \frac{3}{2}\right)$$

$$P\left(\frac{5}{2}, -1\right)$$

$$-1 - 2 = m\left(\frac{5}{2} - \frac{3}{2}\right)$$

$$-3 = m \Rightarrow m = -3$$

$$y - 2 = -3\left(x - \frac{3}{2}\right)$$

$$y - 2 = -3x + \frac{9}{2}$$

$$y = -3x + \frac{9}{2} + 2$$

$$y = -3x + \frac{13}{2}$$

$$M\left(\frac{3}{2}, 2\right)$$

$$P\left(\frac{5}{2}, -1\right)$$

$$\frac{y - y_p}{y_m - y_p} = \frac{x - x_p}{x_m - x_p}$$

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

~~$$\frac{y + 1}{3} = \frac{x - \frac{5}{2}}{-1}$$~~

$$-y - 1 = 3x - \frac{15}{2}$$

$$y = -3x + \frac{15}{2} - 1$$

$$y = -3x + \frac{13}{2}$$

$$m = \frac{2}{3}$$

$$y - 2 = \frac{2}{3} \left(x - \frac{3}{2} \right)$$

$$y - 2 = \frac{2}{3}x - 1$$

$$y = \frac{2}{3}x + 1 \Rightarrow 2x - 3y + 3 = 0$$

$$A(2k-3, 2k) \quad y = \frac{1}{2}$$

$$\underline{3hx + 2hy + 5 - 3h = 0}$$

$$m = \frac{-3h}{2h} = -\frac{3}{2} \quad \uparrow \quad \underline{P(0, \frac{1}{2})}$$

$$0 + h + 5 - 3h = 0$$

$$-2h = -5 \rightarrow h = \frac{5}{2}$$

$$\frac{15}{2}x + 5y + 5 - \frac{15}{2} = 0$$

$$\frac{15}{2}(2k-3) + 5(2k) - \frac{5}{2} = 0$$

$$30k - 45 + 20k - 5 = 0$$

$$50k = 50 \quad k = 1$$

$$-2x + 3y + 6 = 0 \quad P(0, -\frac{1}{4})$$

$$m = \frac{+2}{3} \quad m_{\perp} = -\frac{3}{2}$$

$$y + \frac{1}{4} = \underline{m}(x - 0) \quad y = mx - \frac{1}{4}$$

$$y + \frac{1}{4} = -\frac{3}{2}x \Rightarrow y = -\frac{3}{2}x - \frac{1}{4}$$

$$(2k+1)x + (k-3)y + 1 - k = 0$$

$$m = -\frac{2k+1}{k-3}$$

$$k = -\frac{1}{2} \left\{ \begin{array}{l} (-\frac{1}{2} - 3)y + 1 + \frac{1}{2} = 0 \end{array} \right.$$

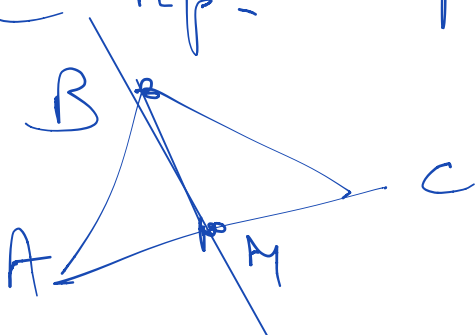
$$k = 3 \left\{ \begin{array}{l} (6+1)x + 1 - 3 = 0 \end{array} \right.$$

$$A(-2, 4) \quad B(-\frac{1}{2}, -\frac{1}{2}) \quad c(4, 1)$$

$$\overline{AB} = \sqrt{\left(-\frac{1}{2} + 2\right)^2 + \left(-\frac{1}{2} - 4\right)^2} = \sqrt{\frac{9}{4} + \frac{81}{4}} =$$

$$= \sqrt{\frac{90}{4}} = \frac{\sqrt{90}}{2} = \frac{\sqrt{3^2 \cdot 2 \cdot 5}}{2} = \frac{3}{2}\sqrt{10}$$

$$\overline{AC} \text{ ip. } M_{AC} \left(1, \frac{5}{2}\right)$$



n. 15 $3x - 4y + 5 - 2k = 0$

$m = \frac{3}{4}$ improprio
perché m non
dipende da k .

a) $(0, 0)$

$$5 - 2k = 0 \Rightarrow k = 5/2$$

b) $y = \frac{1 - 3x}{4}$ $m = -\frac{3}{4}$

$\nexists k \in \mathbb{R}$

c) $(-3, 0)$ $-9 + 5 - 2k = 0$

$$-4 = 2k \Rightarrow k = -2$$

d) $4x + 3y + 6 = 0$

$$m = -\frac{4}{3} \quad m_{\perp} = \frac{3}{4}$$

$\forall k \in \mathbb{R}$

n. 41 $A \begin{pmatrix} 2 & 5 \\ -1 & 6 \end{pmatrix}$ $B \begin{pmatrix} 12 & 5 \\ -1 & - \end{pmatrix}$ $C \begin{pmatrix} k & k \\ -1 & - \end{pmatrix}$

$$A = \frac{1}{2} \begin{vmatrix} 2 & 5/6 & 1 & | & 2 & 5/6 \\ 12 & 5 & 1 & | & 12 & 5 \\ k & k & 1 & | & k & k \end{vmatrix} =$$

$$= \frac{1}{2} \begin{vmatrix} \cancel{10} + 5k + 12k - 5k - 2k - \cancel{10} \\ 6 \end{vmatrix} =$$

$$= \frac{1}{2} \begin{vmatrix} 5k + 5k \\ 6 \end{vmatrix} = \frac{1}{2} \begin{vmatrix} 35k \\ 6 \end{vmatrix}$$

$$\frac{1}{2} \begin{vmatrix} 35k \\ 63 \end{vmatrix} = \frac{175}{4}$$

$$\begin{vmatrix} k \\ 3 \end{vmatrix} = 5 \Rightarrow k = 15$$

$C \begin{pmatrix} 15 & 15 \\ -1 & - \end{pmatrix}$

$$y - 15 = m(x - 15)$$

$$m_{AB} = \frac{5 - \frac{5}{6}}{12 - 2} = \frac{\frac{25}{6}}{10} = \frac{5}{12}$$

$$y - 15 = -\frac{12}{5}(x - 15)$$