

7.33

$$2kx + 2y + 6 - k = 0 \quad m_k = \frac{-2k}{2} = -k$$

a) $P\left(-\frac{3}{2}; 2\right)$

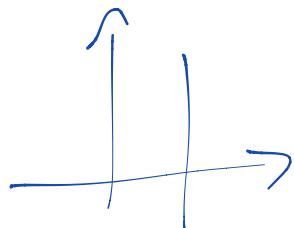
$$2k\left(-\frac{3}{2}\right) + 2 \cdot 2 + 6 - k = 0$$

$$-3k + 4 + 6 - k = 0 \quad ; \quad -4k = -10 \quad | : (-4) \quad k = \frac{5}{2}$$

b) $2k = 0 \Rightarrow k = 0$

c) $\exists k \in \mathbb{R}$

d) $A(1, \frac{2}{3}) \quad B\left(-\frac{1}{2}, \frac{5}{3}\right)$

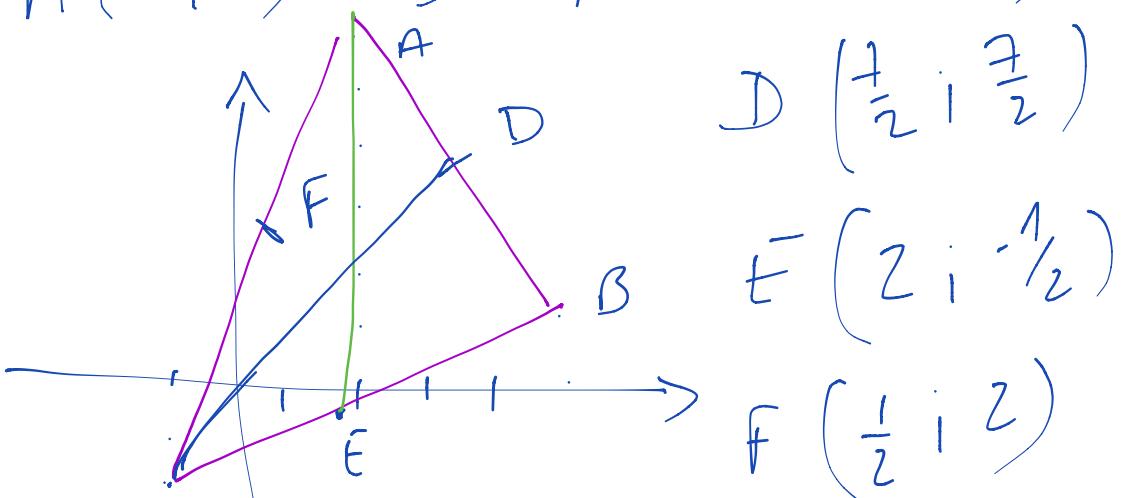


$$m_{AB} = \frac{\Delta y}{\Delta x} = \frac{\frac{5}{3} - \frac{2}{3}}{-\frac{1}{2} - 1} = \frac{1}{-\frac{3}{2}} = -\frac{2}{3}$$

$$m_k = m_{AB} \Rightarrow -k = -\frac{2}{3} \Rightarrow k = \frac{2}{3}$$

A. 39

$$A(2, 6) \quad B(5, 1) \quad C(-1, -2)$$



$$D\left(\frac{7}{2}, \frac{7}{2}\right)$$

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

$$F\left(\frac{1}{2}, 2\right)$$

$$\overline{AE} = \sqrt{\left(6 + \frac{1}{2}\right)^2} = \frac{13}{2}$$

$$\begin{aligned}\overline{CD} &= \sqrt{\left(-1 - \frac{7}{2}\right)^2 + \left(-2 - \frac{7}{2}\right)^2} = \\ &= \sqrt{\frac{81}{4} + \frac{121}{4}} = \sqrt{\frac{202}{4}}\end{aligned}$$

$$\frac{x - x_B}{x_A - x_B} = \frac{y - y_B}{y_A - y_B}$$

$$\frac{x - 5}{2 - 5} = \frac{y - 1}{6 - 1}; \quad \frac{x - 5}{-3} = \frac{y - 1}{5}$$

$$5x - 25 = -3y + 3$$

$$5x + 3y - 28 = 0 \quad D(2; \frac{5}{3})$$

$$5 \cdot 2 + 3 \cdot \frac{5}{3} - 28 = 0$$

$$10 + 5 - 28 = 0 \text{ false } \oplus \notin K_{AB}$$

$$B(5; 1) \quad f\left(\frac{1}{2}; 2\right)$$

$$\frac{x - x_B}{x_F - x_B} = \frac{y - y_B}{y_F - y_B}$$

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

$$\frac{x - 5}{-\frac{9}{2}} = y - 1 ; -\frac{2}{9}(x - 5) = y - 1$$

$$-2x + 10 = 9y - 9$$

$$2x + 9y - 19 = 0 \quad D(2; \frac{5}{3})$$

$$2 \cdot 2 + \cancel{x} \cdot \frac{5}{\cancel{3}} - 19 = 0$$

$$4 + 15 - 19 = 0 \Rightarrow 0 = 0$$

A.23 $(k-1)x + 3y - 2 = 0$

a) $y + 2 = 0$
 $k - 1 = 0 \Rightarrow k = 1$

b) $x - 3y = 0$

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

$$\frac{-k+1}{3} = \frac{k}{3} \Rightarrow k = 0$$

b) $x + 2y = 0 \quad m = -\frac{1}{2}$

$$\frac{-k+1}{3} = 2 \quad | -k+1=6 \\ | k=-5$$

$$r: 2x - \cancel{y} + 3 = 0$$
$$s: x - 2\cancel{y} + 1 = 0 \quad P(x, y)$$

$$d(P, r) = d(P, s)$$

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

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

$$2) 2x - y + 3 = -x + 2y - 1$$
$$3x - 3y + 4 = 0$$

Esercitazione

n.18 $y - 2 = m(x + 5)$

a) $y - y_0 = m(x - x_0)$

C(-5; 2)

b) B(-1; -2)

$$-2 - 2 = m(-1 + 5)$$

$$-4 = 4m \Rightarrow m = -1$$

$$y - 2 = -(x + 5)$$

$$x + y + 3 = 0$$

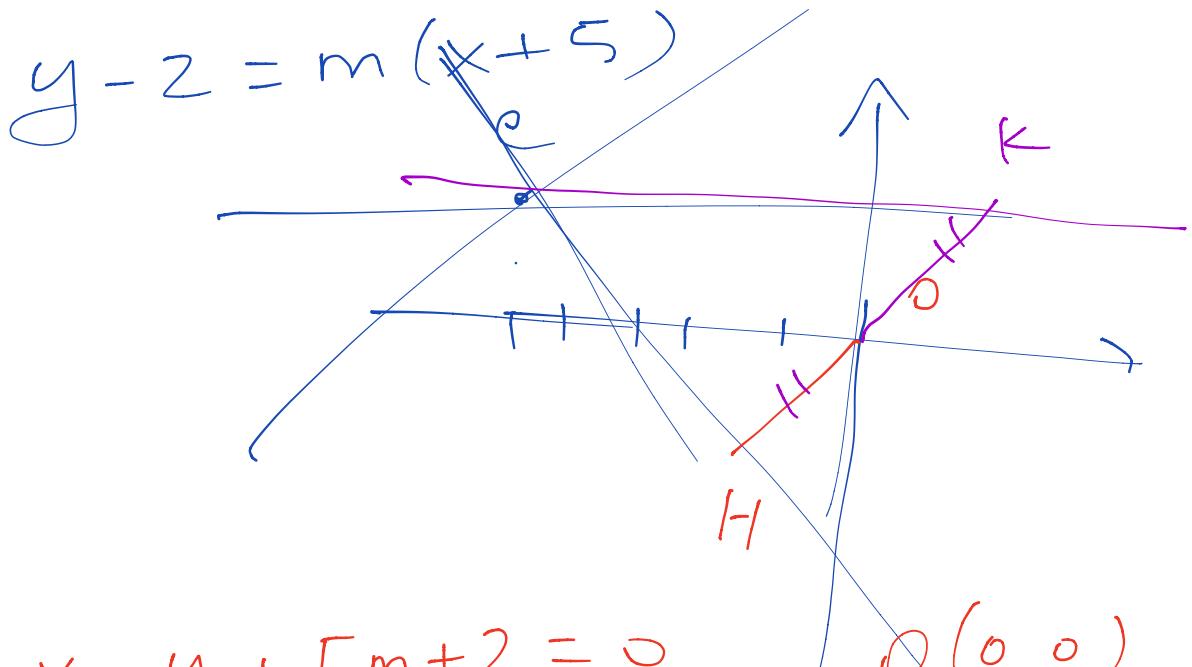
c) $3x + 8y + 2 = 0 \quad m' = -\frac{3}{8}$

$$y - 2 = \frac{8}{3}(x + 5)$$

$$3y - 6 = 8x + 40$$

$$3x - 3y + 46 = 0$$

$$d) \quad d(r_1, o) = \frac{7\sqrt{2}}{2}$$



$$\underline{m}x - y + 5m + 2 = 0 \quad O(\underline{0}, \underline{0})$$

$$\frac{|5m+2|}{\sqrt{m^2+1}} = \frac{7}{\sqrt{2}}$$

$$\frac{25m^2 + 20m + 4}{m^2 + 1} = \frac{49}{2}$$

$$50m^2 + 40m + 8 = 49m^2 + 49$$

$$m^2 + 40m - 41 = 0$$

$$(m + 41)(m - 1) = 0$$

$$m_1 = -41 \quad m_2 = 1$$