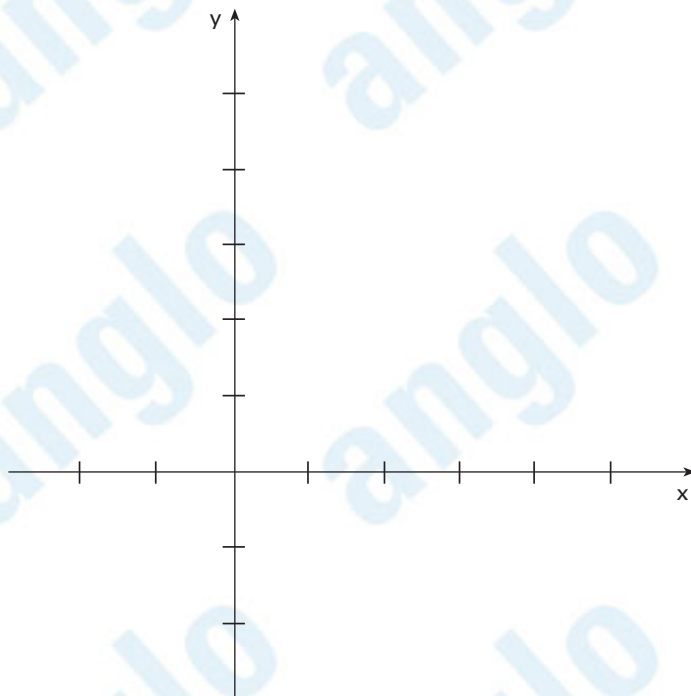


## Questão 2

Determine as coordenadas do ponto  $(x, y)$ , eqüidistante dos pontos  $(0, 0)$ ,  $(3, 2)$  e  $(2, 5)$ .



### Resolução

Seendo  $A = (0, 0)$ ,  $B = (3, 2)$ ,  $C = (2, 5)$  e  $P = (x, y)$  o ponto pedido, temos, do enunciado:

$$\bullet \text{ PA} = \text{PB} \quad \therefore \sqrt{x^2 + y^2} = \sqrt{(x - 3)^2 + (y - 2)^2}$$

$$\begin{aligned} x^2 + y^2 &= x^2 - 6x + 9 + y^2 - 4y + 4 \\ 6x + 4y &= 13 \quad (\text{I}) \end{aligned}$$

$$\bullet \text{ PA} = \text{PC} \quad \therefore \sqrt{x^2 + y^2} = \sqrt{(x - 2)^2 + (y - 5)^2}$$

$$\begin{aligned} x^2 + y^2 &= x^2 - 4x + 4 + y^2 - 10y + 25 \\ 4x + 10y &= 29 \quad (\text{II}) \end{aligned}$$

Multiplicando as equações (I) e (II) por  $-2$  e  $3$ , respectivamente, obtemos:

$$\begin{cases} -12x - 8y = -26 \\ 12x + 30y = 87 \end{cases} \quad \therefore x = \frac{7}{22} \text{ e } y = \frac{61}{22}$$

**Resposta:**  $\left(\frac{7}{22}, \frac{61}{22}\right)$