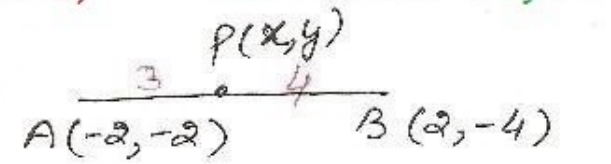


⑧  $A(-2, -2)$ $B(2, -4)$

$$AP = \frac{3}{7} AB$$

$$\Rightarrow \frac{AP}{AB} = \frac{3}{7}$$

$$\text{let } AP = 3x, AB = 7x$$

$$\begin{aligned} \Rightarrow PB &= AB - AP \\ &= 7x - 3x \\ &= 4x \end{aligned}$$

$$\therefore \frac{AP}{PB} = \frac{3x}{4x}$$

$$\Rightarrow AP : PB = 3 : 4$$

$$\begin{aligned} x &= \frac{3 \times 2 + 4(-2)}{3+4}, y = \frac{3(-4) + 4(-2)}{3+4} \\ &= \frac{6-8}{7} = \frac{-2}{7} \\ &= \frac{-2}{7} \end{aligned} \quad \begin{aligned} &= \frac{-12-8}{7} \\ &= \frac{-20}{7} \end{aligned}$$

$$\therefore P\left(-\frac{2}{7}, -\frac{20}{7}\right)$$

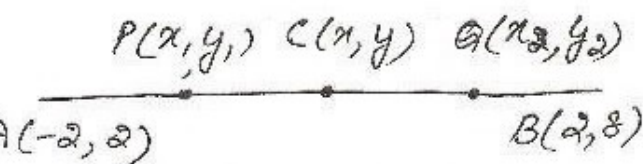
P is midpoint of AC
 $\therefore x_1 = \frac{-2+0}{2}, y_1 = \frac{-2+5}{2}$
 $= -1 \quad = \frac{3}{2}$

$$P\left(-1, \frac{3}{2}\right)$$

Q is midpoint of CB
 $x_2 = \frac{0+2}{2}, y_2 = \frac{5+8}{2}$
 $= 1 \quad = \frac{13}{2}$

$$Q\left(1, \frac{13}{2}\right)$$

coordinates of points are $\left(-1, \frac{3}{2}\right), (0, 5), \left(1, \frac{13}{2}\right)$

⑨  $A(-2, 2)$ $B(2, 8)$

let points P, C and Q divide AB into 4 equal parts.

C is midpoint of AB

$$\begin{aligned} x &= \frac{-2+2}{2}, y = \frac{2+8}{2} \\ &= \frac{0}{2} = 0 \\ &= 0 \end{aligned} \quad \begin{aligned} &= \frac{10}{2} \\ &= 5 \end{aligned}$$

$$C(0, 5)$$