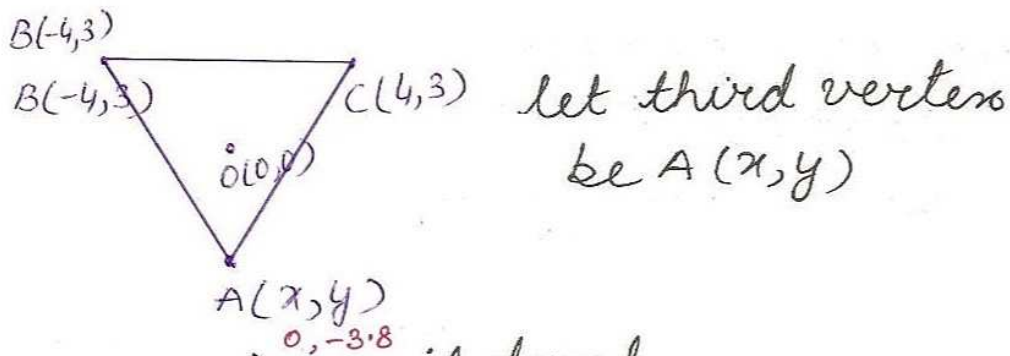


$$A(0, 9.8)$$

①



$\triangle ABC$  is equilateral

$$\therefore AB = BC = CA$$

$$\Rightarrow AB^2 = BC^2 = CA^2$$

$$(-4-x)^2 + (3-y)^2 = (4+4)^2 + (3-3)^2 = (x-4)^2 + (y-3)^2$$

$$(-4-x)^2 + (3-y)^2 = (x-4)^2 + (y-3)^2 \quad [\because (a-b)^2 = (b-a)^2]$$

$$\Rightarrow 16 + x^2 + 8x = x^2 + 16 - 8x$$

$$\Rightarrow x = 0$$

$$(4+4)^2 + (3-3)^2 = (x-4)^2 + (y-3)^2$$

$$64 + 0 = (0-4)^2 + (y-3)^2$$

$$\Rightarrow (y-3)^2 = -16 + 64$$

$$\Rightarrow y-3 = \pm \sqrt{48}$$

$$\Rightarrow y-3 = \pm 4\sqrt{3}$$

$$\Rightarrow y = 3 \pm 4\sqrt{3}$$

$$\begin{aligned} y &= 3 + 4\sqrt{3} \\ &= 3 + 4 \times 1.7 \\ &= 3 + 6.8 \\ &= 9.8 \end{aligned}$$

$$\begin{aligned} y &= 3 - 4\sqrt{3} \\ &= 3 - 4 \times 1.7 \\ &= 3 - 6.8 \\ &= -3.8 \end{aligned}$$

$$A(3 - 4\sqrt{3})$$

$$\therefore A(0, 9.8) \text{ or } A(0, -3.8)$$

$\therefore$  origin lies in the interior of  $\triangle ABC$

$$\therefore A(3 - 4\sqrt{3}) \quad \text{NCERT Exemplar Sols by Dev Anoop (Bathinda)}$$