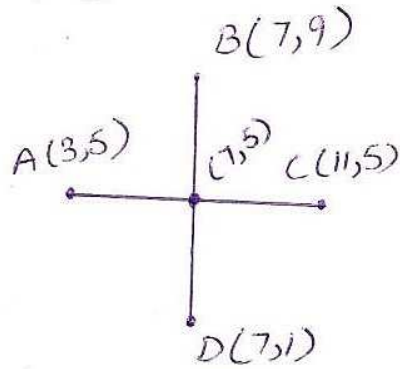


⑤



let $E(x_1, y_1)$ be midpt of AC

$$\begin{aligned} x_1 &= \frac{3+11}{2}, & y_1 &= \frac{5+5}{2} \\ &= \frac{14}{2} & &= \frac{10}{2} \\ &= 7 & &= 5 \end{aligned}$$

$$\therefore E(7,5)$$

let $F(x_2, y_2)$ be midpoint of BD

$$\begin{aligned} x_2 &= \frac{7+7}{2} & y_2 &= \frac{9+1}{2} \\ &= 7 & &= 5 \end{aligned}$$

$$\therefore F(7,5)$$

\therefore Midpoints of AC, BD coincide
 \therefore AC, BD bisect each other

$$\begin{aligned} AC &= \sqrt{(11-3)^2 + (5-5)^2} & BD &= \sqrt{(7-7)^2 + (1-9)^2} \\ &= \sqrt{64} & &= \sqrt{64} \\ &= 8 & &= 8. \end{aligned}$$

Since $AC = BD$ and midpoints of AC and BD coincide

$(7,5)$ is equidistant from A, B, C, D

\therefore gaspal's position is $(7,5)$