

For  $\triangle ABC$  to be isosceles either  $\overline{AB} = \overline{AC}$ ,  $\overline{AB} = \overline{BC}$  or  $\overline{BC} = \overline{AC}$

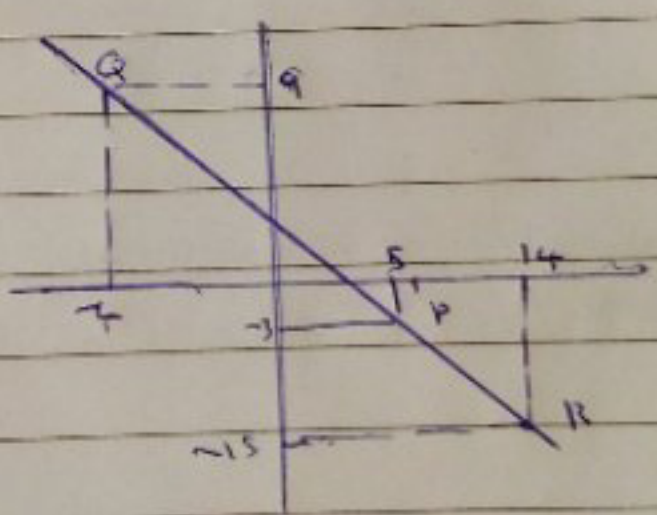
$$\begin{aligned} \overline{AB} &= \sqrt{(6+2)^2 + (-5)^2} \\ &= \sqrt{8^2 + 5^2} \\ &= \sqrt{64 + 25} = 10 \end{aligned}$$

$$\begin{aligned} \overline{AC} &= \sqrt{(6)^2 + (-5-3)^2} \\ &= \sqrt{6^2 + (-8)^2} \\ &= \sqrt{36 + 64} = 10 \end{aligned}$$

$\therefore \overline{AB} = \overline{AC}$

$\therefore$  It is an isosceles triangle QED

②



P divides  $\overline{QR}$  internally

$\therefore \frac{KQ}{KR} + \frac{Lx_1}{Lx_2} = (5, -3)$

$\frac{K}{K+L} \quad \frac{L}{K+L}$

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$$= \frac{K(14) + L(-5)}{K+L} = 5$$

$$14K - 5L = 5K + 5L$$

$$9K - 10L = 5L \quad \text{CLT}$$

$$9K = 15L$$

$$3K = 5L$$

$$\frac{K}{L} = \frac{5}{3}$$

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The ratio in which P divides QR is 1:1

R divides PQ externally

$$Kx_2 - Rx_1 = \frac{Kx_2 - Lx_1}{K-L} = (14, -10)$$

$$K-L$$

$$K(14) - L(-10) = -15$$

$$K-L$$

$$9K + 10L = -15$$

$$K-L$$

$$9K + 10L = -15K + 10L$$

CLT

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$$9K + 15L = 15L - 3L$$

$$24K = 12L$$

$$\frac{K}{L} = \frac{24}{12}$$

$$\frac{K}{L} = \frac{2}{1}$$

$$K:L = 2:1$$

∴ R divides  $\overline{PQ}$  in the ratio 2:1.