

Question 1.4.15

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Question:

The point which divides the line segment joining the points **P**(7, −6) and **Q**(3, 4) in the ratio 1 : 2 internally lies in which quadrant?

Solution:

The point **C** that divides points **P** and **Q** in the ratio $l : m$ is

$$\mathbf{C} = \frac{m\mathbf{P} + l\mathbf{Q}}{l + m} \quad (1)$$

$$\therefore \text{The point } \mathbf{R} \text{ dividing } \mathbf{P} \text{ and } \mathbf{Q} \text{ in that ratio is } \mathbf{R} = \left(\frac{\frac{17}{3}}{-\frac{8}{3}} \right) \quad (2)$$

Clearly this point lies in the 4th quadrant.

Plot:

