

# Fully-Worked Solutions

## PRACTICE 10

### Section A

1  $QR$  = Horizontal distance

$PQ$  = Vertical distance

Answer: **B**

2 Angle of inclination of  $JL$  is the largest.

Answer: **A**

$$\begin{aligned}\text{3 Gradient} &= \frac{\text{Vertical distance}}{\text{Horizontal distance}} \\ &= \frac{8}{3}\end{aligned}$$

Answer: **D**

$$\begin{aligned}\text{4 Gradient} &= \frac{7 - (-5)}{6 - 2} \\ &= \frac{12}{4} \\ &= 3\end{aligned}$$

Answer: **C**

$$\begin{aligned}\text{5 Gradient} &= \frac{-15 - 5}{2 - (-3)} \\ &= -\frac{20}{5} \\ &= -4\end{aligned}$$

Answer: **A**

$$\begin{aligned}\text{6 Gradient} &= -\frac{8}{12} \\ &= -\frac{2}{3}\end{aligned}$$

Answer: **B**

$$\begin{aligned}\text{7 Gradient} &= -\frac{-12}{6} \\ &= 2\end{aligned}$$

Answer: **D**

$$\begin{aligned}\text{8 Gradient of } PQ &= 0 \\ \frac{y - 5}{12 - 8} &= 0 \\ y - 5 &= 0 \\ y &= 5\end{aligned}$$

Answer: **C**

9 Straight line  $SQ$  is the steepest.

Answer: **C**

$$\begin{aligned}\text{10 Gradient} &= -3 \\ -\frac{12}{x} &= -3 \\ -3x &= -12 \\ 3x &= 12 \\ x &= 4\end{aligned}$$

Answer: **B**

$$\text{11 Gradient} = \frac{2}{5}$$

$$\frac{-y}{-10} = \frac{2}{5}$$

$$y = \frac{2}{5} \times 10 = 4$$

Answer: **C**

12 Gradient = -4

$$\frac{2 - (-4)}{m - 3} = -4$$

$$6 = -4(m - 3)$$

$$6 = -4m + 12$$

$$4m = 6$$

$$m = \frac{6}{4} = \frac{3}{2}$$

Answer: **B**

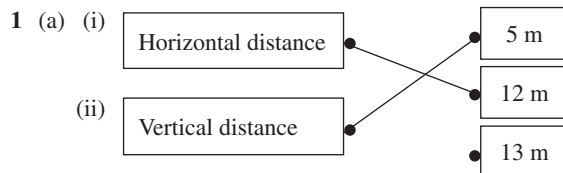
13 Gradient =  $\frac{2}{3}$

$$-\frac{y}{6} = \frac{2}{3}$$

$$\begin{aligned}y &= \frac{2}{3} \times (-6) \\ &= -4\end{aligned}$$

Answer: **A**

### Section B



$$\begin{aligned}\text{(b) (i) Gradient} &= \frac{\text{Vertical distance}}{\text{Horizontal distance}} \\ &= \frac{3}{4}\end{aligned}$$

$$\begin{aligned}\text{(ii) Gradient} &= \frac{\text{Vertical distance}}{\text{Horizontal distance}} \\ &= \frac{15}{8}\end{aligned}$$

$$\begin{aligned}\text{2 (a) (i) Gradient of } PQ &= \frac{-7 - 8}{2 - (-3)} \\ &= \frac{-15}{5} \\ &= -3\end{aligned}$$

$$\begin{aligned}\text{(ii) Gradient of } RS &= \frac{-1 - 5}{6 - 9} \\ &= \frac{-6}{-3} \\ &= 2\end{aligned}$$

$$\begin{aligned} \text{(b) (i) Gradient} &= -\frac{10}{5} \\ &= -2 \quad [\checkmark] \end{aligned}$$

$$\begin{aligned} \text{(ii) Gradient} &= -\frac{-4}{8} \\ &= \frac{1}{2} \end{aligned}$$

$$\begin{aligned} \text{(iii) Gradient} &= -\frac{-6}{-3} \\ &= -2 \quad [\checkmark] \end{aligned}$$

3 (a) ✗ (b) ✓ (c) ✗ (d) ✓

### Section C

- 1 (a) (i) 24 cm (ii) 7 cm  
(b) (i) 15 (ii) 6

$$\begin{aligned} \text{(iii) Gradient} &= \frac{\text{y-intercept}}{\text{x-intercept}} \\ &= -\frac{6}{15} \\ &= -\frac{2}{5} \end{aligned}$$

$$\begin{aligned} \text{(c) (i) } OP &= \frac{5}{3} OR \\ &= \frac{5}{3} \times 6 \\ &= 10 \end{aligned}$$

$$\therefore P(-10, 0)$$

$$\text{(ii) } R(0, 6)$$

$$\begin{aligned} S &= \left( \frac{-10+0}{2}, \frac{0+0}{2} \right) \\ &= (-5, 0) \end{aligned}$$

$$\begin{aligned} Q(-10, 6) \\ \text{Gradient of } QS \\ &= \frac{6-0}{-10-(-5)} \\ &= -\frac{6}{5} \end{aligned}$$

- 2 (a) Vertical distance = 4  
Horizontal distance = 8

$$\begin{aligned} \text{Gradient} &= \frac{4}{8} \\ &= \frac{1}{2} \end{aligned}$$

- (b) (i) Gradient = -3

$$\begin{aligned} \frac{15-3}{-2-k} &= -3 \\ 12 &= -3(-2-k) \\ 12 &= 6+3k \\ 3k &= 6 \\ k &= 2 \end{aligned}$$

- (ii)  $P(-8, 0), Q(0, -4)$

$$\begin{aligned} \text{Gradient} &= -\frac{-4}{-8} \\ &= -\frac{1}{2} \end{aligned}$$

- (c)  $OK = 8, JK = 17, OJ = 15, KL = 10, OL = 6$

$$\begin{aligned} \text{(i) Gradient of } JK &= -\frac{8}{-15} \\ &= \frac{8}{15} \end{aligned}$$

$$\begin{aligned} \text{(ii) Gradient of } KL &= -\frac{8}{6} \\ &= -\frac{4}{3} \end{aligned}$$