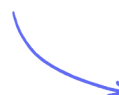


Coordinate Geometry

Coordinates / Midpoint of a Line / Gradient of a Line / Length of a Line

Easy (6 questions)	/15
Medium (8 questions)	/28
Hard (4 questions)	/18
Total Marks	/61

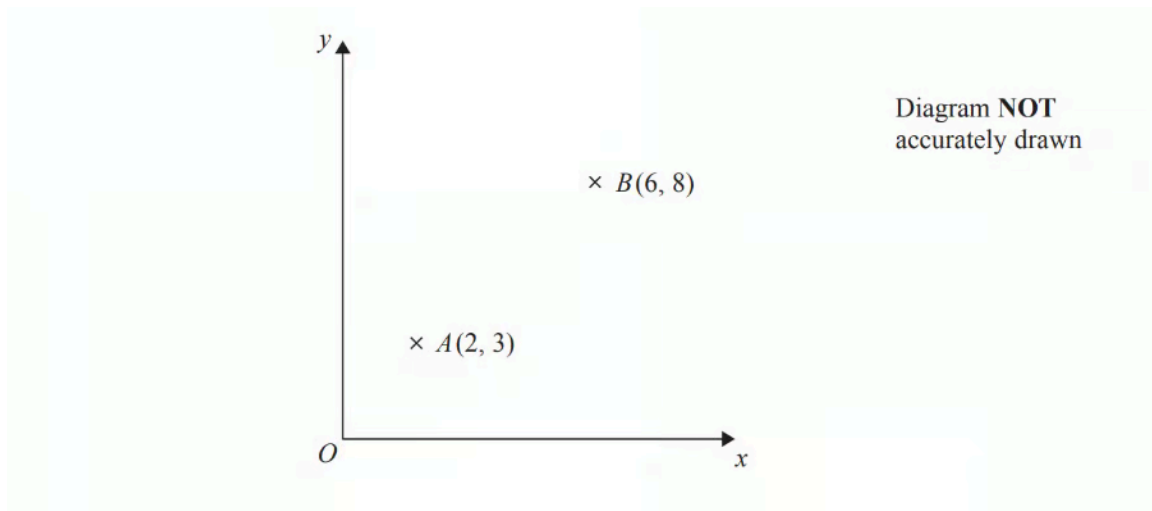
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Easy Questions

- 1 The point A has coordinates $(2, 3)$.
The point B has coordinates $(6, 8)$.

M is the midpoint of the line AB .
Find the coordinates of M .



(2 marks)

- 2 The straight line L has equation $2y + 7x = 10$

Find the gradient of L .

(2 marks)

- 3 Point A has coordinates $(5, 8)$
Point B has coordinates $(9, -4)$

Work out the gradient of AB .

(2 marks)

- 4 (a)** The point A has coordinates $(5, -4)$
The point B has coordinates $(13, 1)$

Work out the coordinates of the midpoint of AB .

(2 marks)

- (b)** Line L has equation $y = 2 - 3x$

Write down the gradient of line L .

(1 mark)

- 5** Find the gradient of the straight line with equation $5x + 2y = 7$

(2 marks)

- 6 (a)** Point A has coordinates $(-3, 5)$.

Point B has coordinates $(9, 10)$.

Work out the midpoint of the two points.

(2 marks)

- (b)** Find the length between the points A and B .

(2 marks)

Medium Questions

- 1 A is the point $(7, 2)$ and B is the point $(-5, 8)$.

Calculate the length of AB .

(3 marks)

- 2 A rhombus $ABCD$ has a diagonal AC where A is the point $(-3, 10)$ and C is the point $(4, -4)$.

Calculate the length AC .

(3 marks)

- 3 The coordinates of P are $(-3, 8)$ and the coordinates of Q are $(9, -2)$.

Calculate the length PQ .

(3 marks)

- 4 A is the point $(2, 1)$ and B is the point $(9, 4)$.

Find the length of AB .

(3 marks)

5 (a) A is the point $(8,5)$ and B is the point $(-4,1)$.

Calculate the length of AB .

(3 marks)

(b) Find the co-ordinates of the midpoint of AB .

(..... ,)

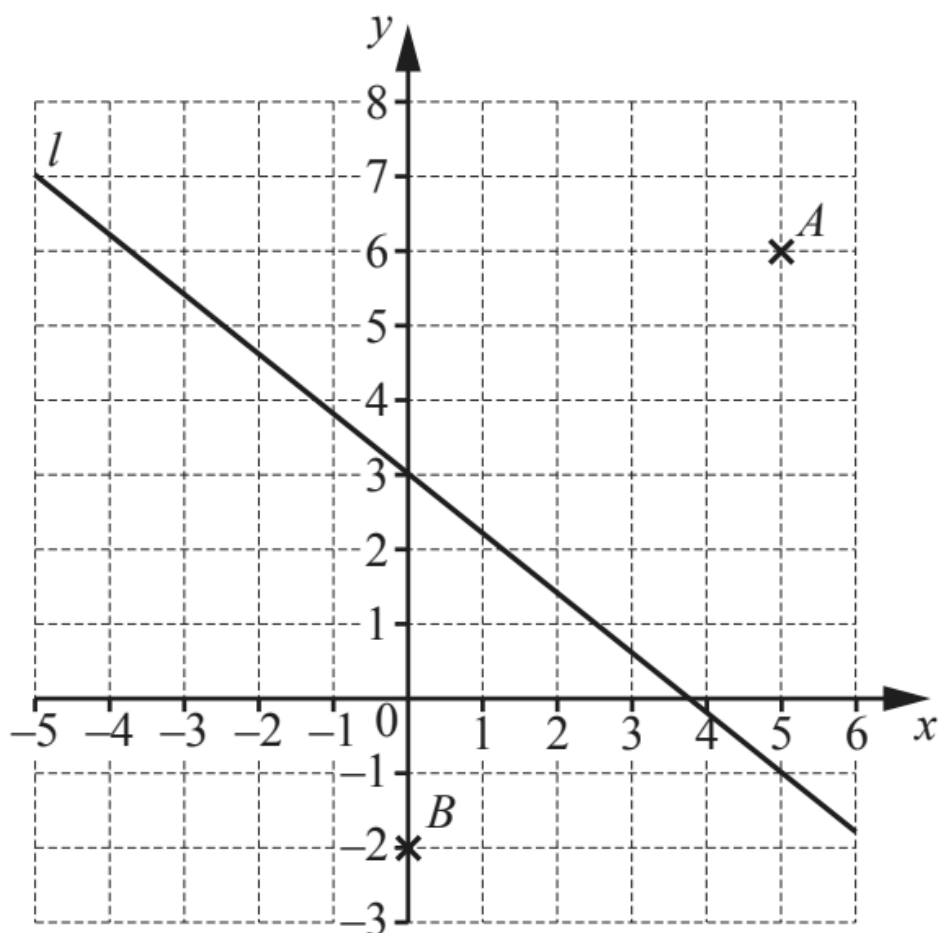
(2 marks)

6 A is the point $(7,12)$ and B is the point $(2, -1)$.

Find the length of AB .

(3 marks)

7 (a)



C is the point $(8, 14)$.

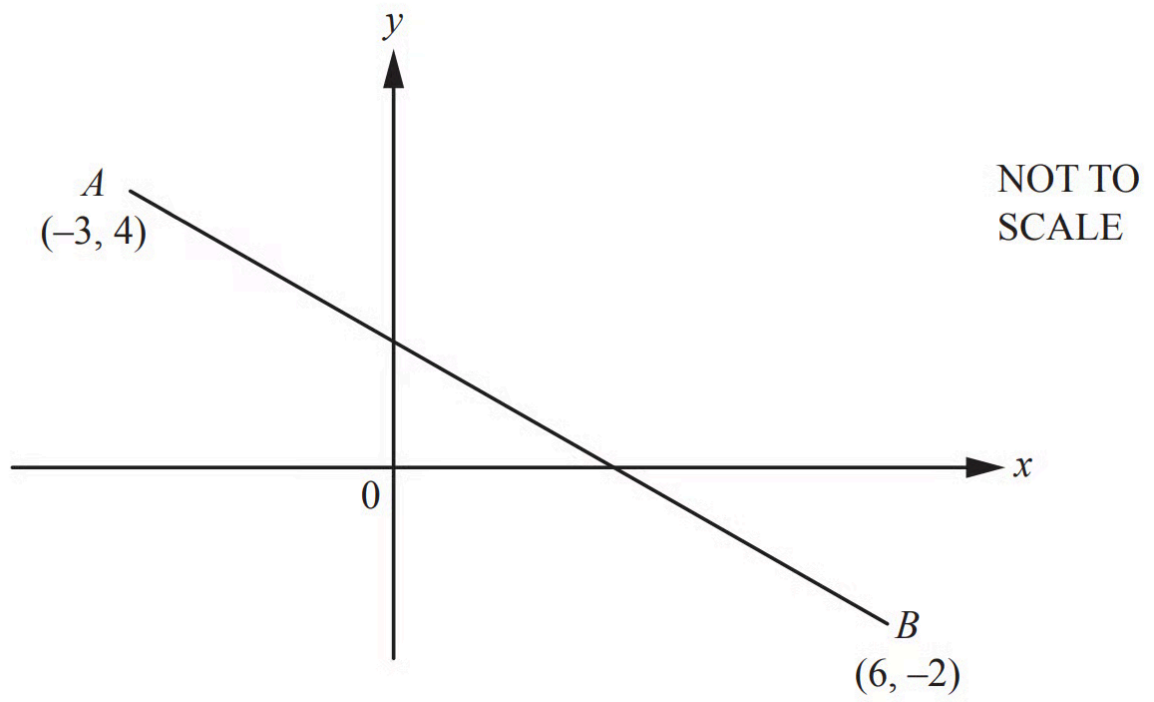
Calculate the length of AC .

(3 marks)

(b) Find the co-ordinates of the mid-point of BC .

(..... ,)

(2 marks)



Calculate the length of AB .

(3 marks)

Hard Questions

- 1 The graphs of $y = (x - 1)^2$ and $y = \frac{1}{2}x + 1$ intersect at A and B .

Find the length of AB .

$AB = \dots\dots\dots$

(7 marks)

- 2 A triangle has vertices P , Q and R .

The coordinates of P are $(-3, -6)$

The coordinates of Q are $(1, 4)$

The coordinates of R are $(5, -2)$

M is the midpoint of PQ .

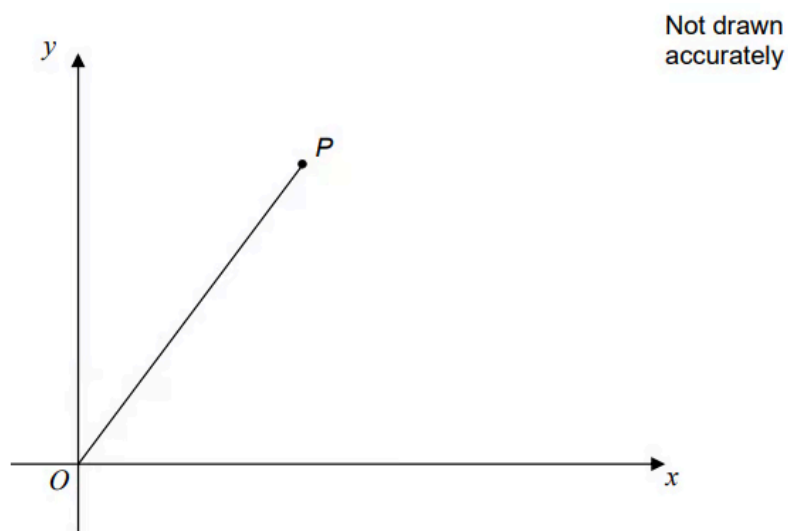
N is the midpoint of QR .

Prove that MN is parallel to PR .

You must show each stage of your working.

(4 marks)

- 3 The diagram shows a line joining O to P .



The gradient of the line is 2

The length of the line is $\sqrt{2645}$

Work out the coordinates of P .

(4 marks)

- 4 A straight line goes through the points (p, q) and (r, s) , where

- $p + 2 = r$
- $q + 4 = s$.

Find the gradient of the line.

(3 marks)