

Exam Questions

Coordinate Geometry

Coordinates / Midpoint of a Line / Gradient of a Line

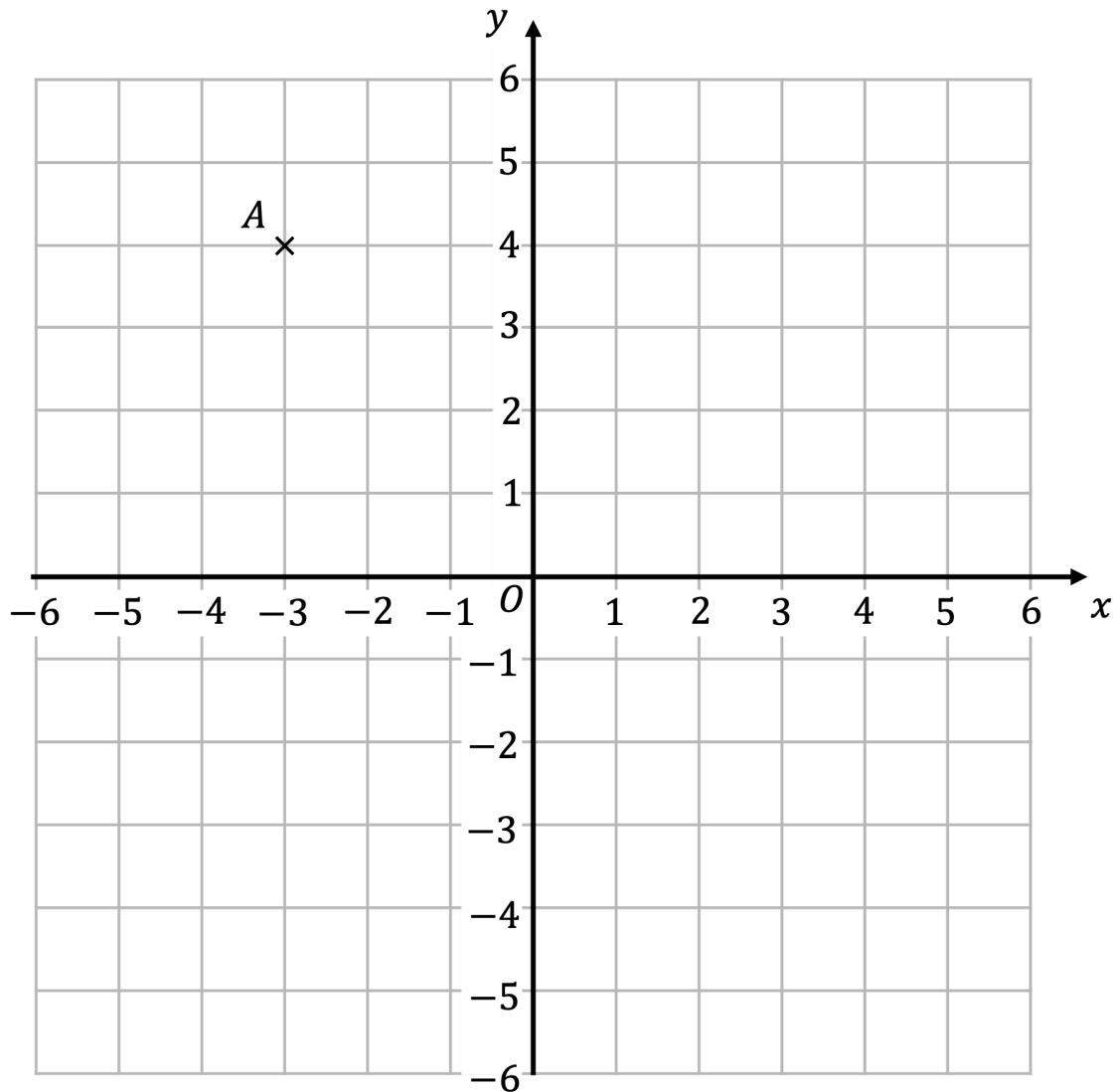
Easy (5 questions)	/11
Medium (7 questions)	/14
Hard (7 questions)	/18
Total Marks	/43

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Easy Questions

1 (a) Here is a centimetre grid.



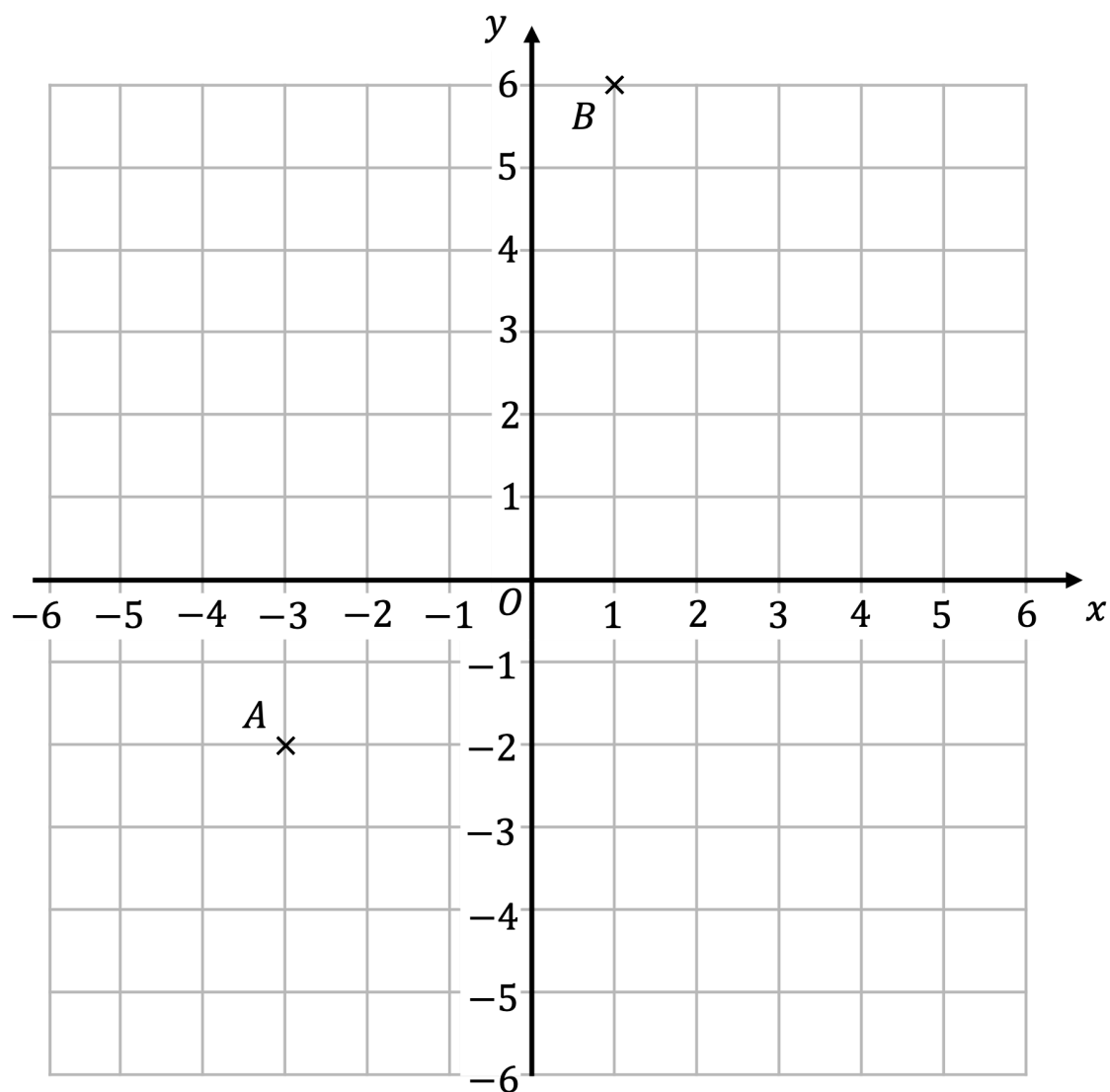
Write down the coordinates of point A.

(1 mark)

(b) On the grid, mark with a cross (x) the point with coordinates (5, -2)
Label this point B.

(1 mark)

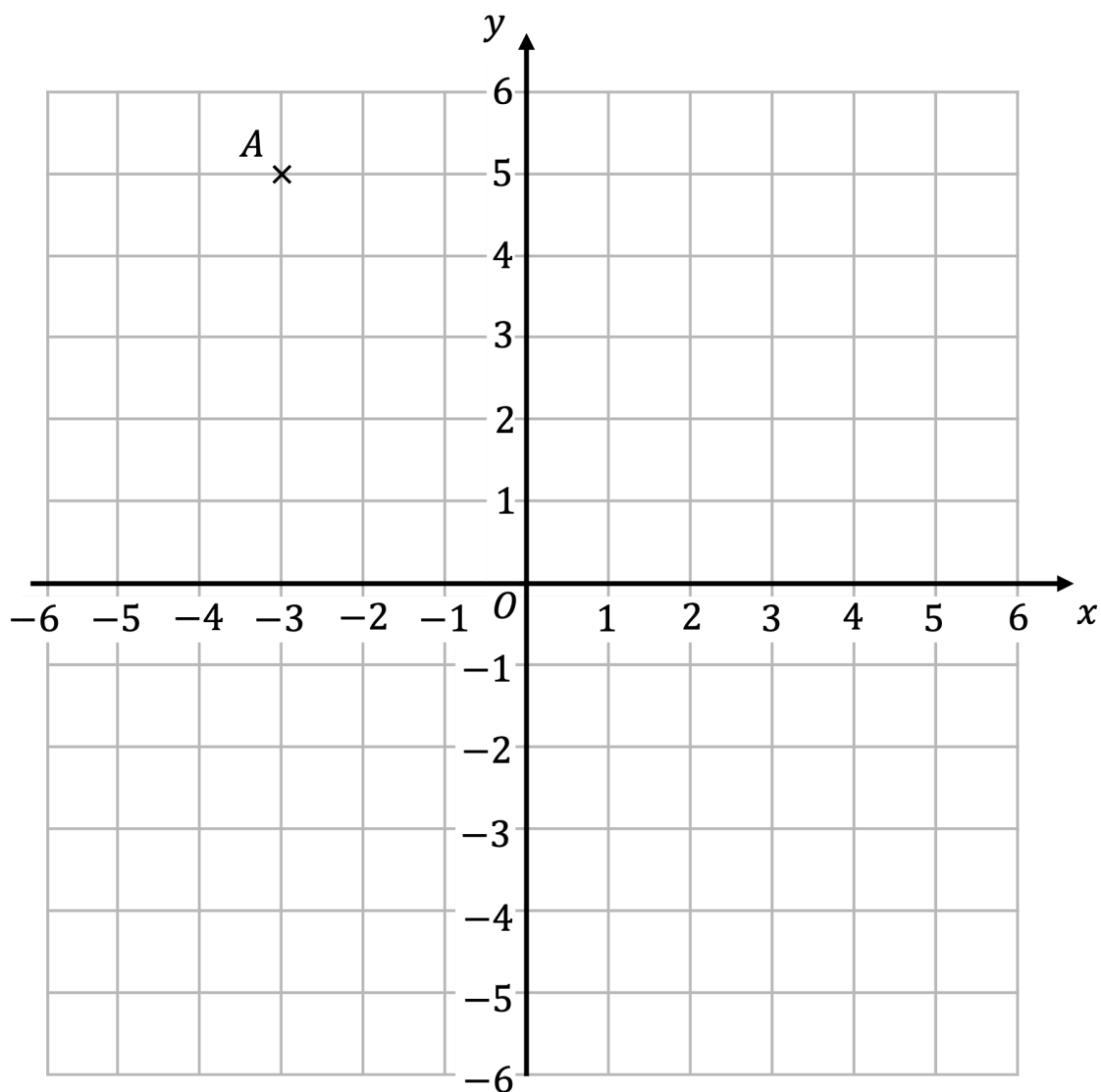
2 Points A and B are marked on the grid below.



Write down the coordinates of the midpoint of AB .

(1 mark)

3 (a)



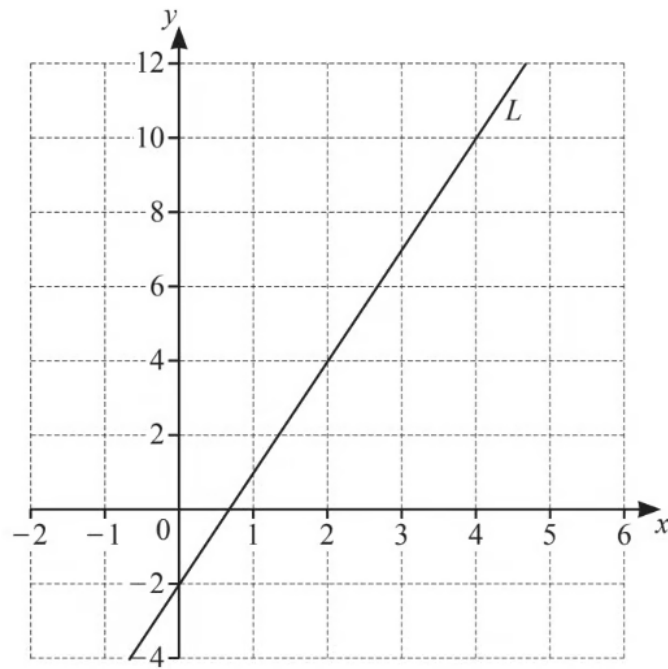
On the grid, mark with a cross (×) the point $(1, -3)$
Label the point B .

(1 mark)

(b) Write down the gradient of the line that passes through the points A and B .

(2 marks)

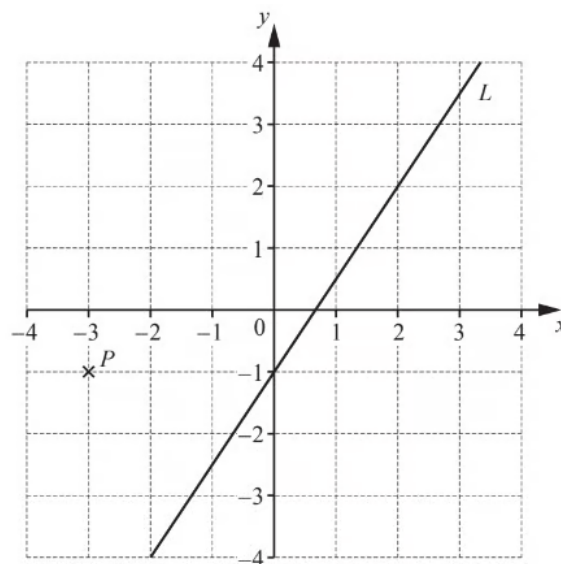
4



Find the gradient of line L .

(2 marks)

5 (a) The diagram shows a point P and a line L .



Write down the co-ordinates of point P .

(1 mark)

(b) Find the gradient of line L .

(2 marks)

Medium Questions

- 1 A is the point with coordinates $(3, 5)$.
 B is the point with coordinates $(d, 13)$.

The gradient of the line AB is 2.

Work out the value of d .

(3 marks)

- 2 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 .

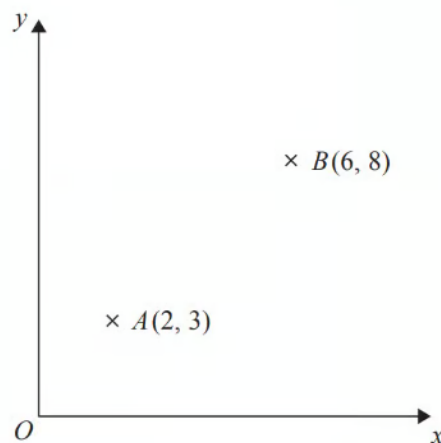


Diagram **NOT**
accurately drawn

(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** A is $(2, 13)$ and B is $(10, 1)$

Choose the midpoint of AB .

- A.** $(4, 6)$
- B.** $(5, 6.5)$
- C.** $(6, 7)$
- D.** $(8, 12)$

(1 mark)

- 6** P is $(4, 9)$ and Q is $(-2, 1)$
Choose the midpoint of PQ .

- A.** $(1, 5)$
- B.** $(3, 4)$

C. (3, 5)

D. (6, 8)

(1 mark)

7 Work out the gradient of the straight line through $(-2, 3)$ and $(1, 9)$

(2 marks)

Hard Questions

- 1 The coordinates A , B and C are such that ABC is a straight line.

The coordinates of A are $(2, -6)$

The coordinates of C are $(18, 2)$

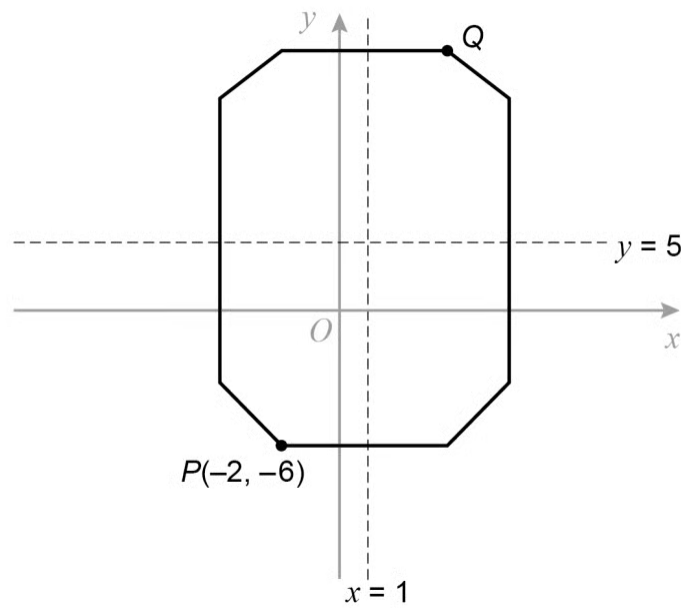
Given that $AB:BC = 3:5$, find the coordinates of B .

(4 marks)

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

(2 marks)

3 The diagram shows an octagon



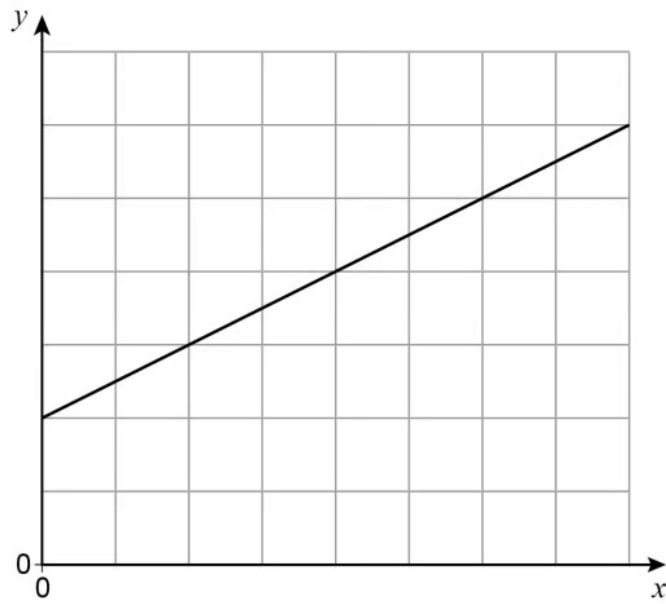
Not drawn
accurately

$x = 1$ and $y = 5$ are lines of symmetry.

Work out the coordinates of point Q .

(2 marks)

4 (a) A straight line is drawn on the centimetre grid.



Fay assumes that the scale is 1 cm represents 1 unit.

Use her assumption to work out the gradient of the line.

(1 mark)

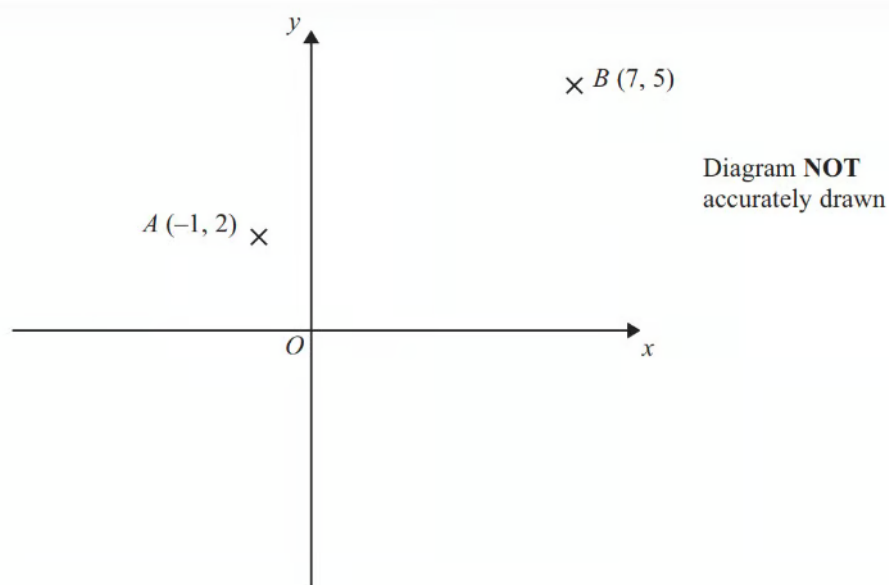
(b) In fact, the scale is 1 cm represents 2 units.

Which statement is correct? Tick **one** box.

- ☐ The answer to part (a) is too big
- ☐ The answer to part (a) stays the same
- ☐ The answer to part (a) is too small

(1 mark)

5 (a)



A is the point $(-1, 2)$

B is the point $(7, 5)$

Find the coordinates of the midpoint of AB .

(2 marks)

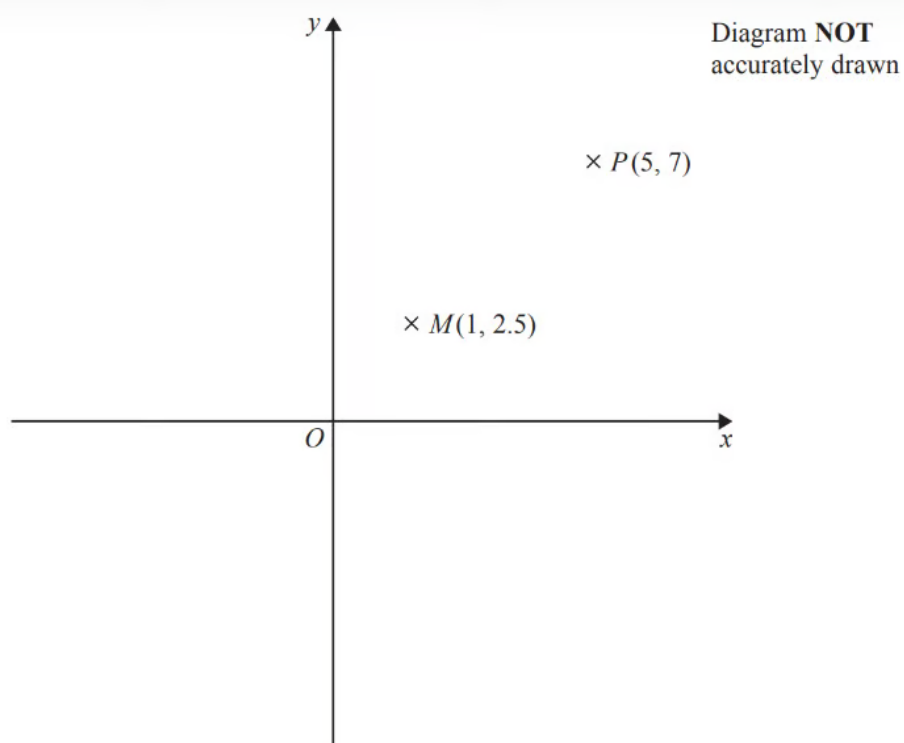
(b) P is the point $(-4, 4)$

Q is the point $(1, -5)$

Find the gradient of PQ .

(2 marks)

6



Point P has coordinates $(5, 7)$.

Point M has coordinates $(1, 2.5)$.

Point M is the midpoint of the line PQ .

Find the coordinates of point Q .

(2 marks)

7 Point A has coordinates $(-3, 11)$

Point B has coordinates $(47, b)$

The midpoint of AB has coordinates $(a, -19)$

Find the value of a and the value of b .

$a = \dots\dots\dots$

$b = \dots\dots\dots$

(2 marks)