Q1.

Here is a square on coordinate axes.

(−12, 20)

Not to scale

×C
(13, −5)

P

Q
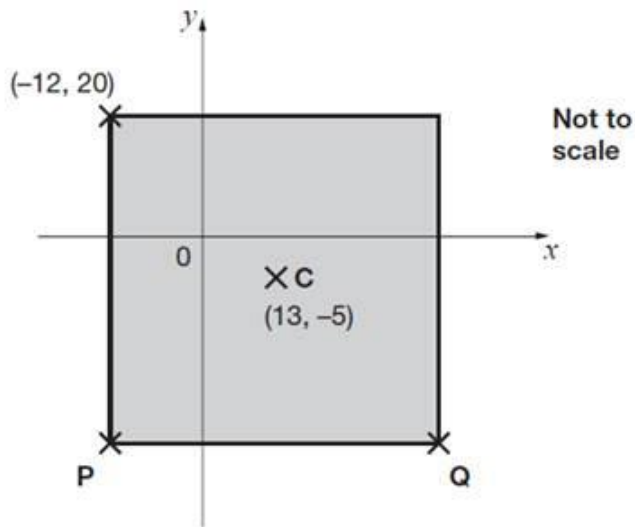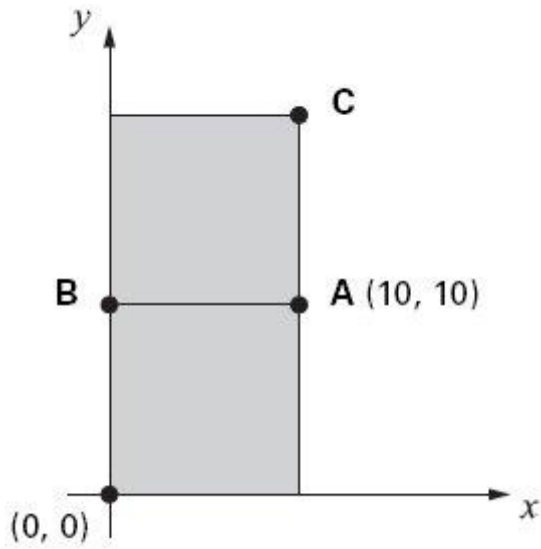
C is the centre of the square.

Find the coordinates of **P** and **Q**.

P is (,)

1 mark

Q is (,)

1 mark

Q2.

The diagram shows two identical squares.
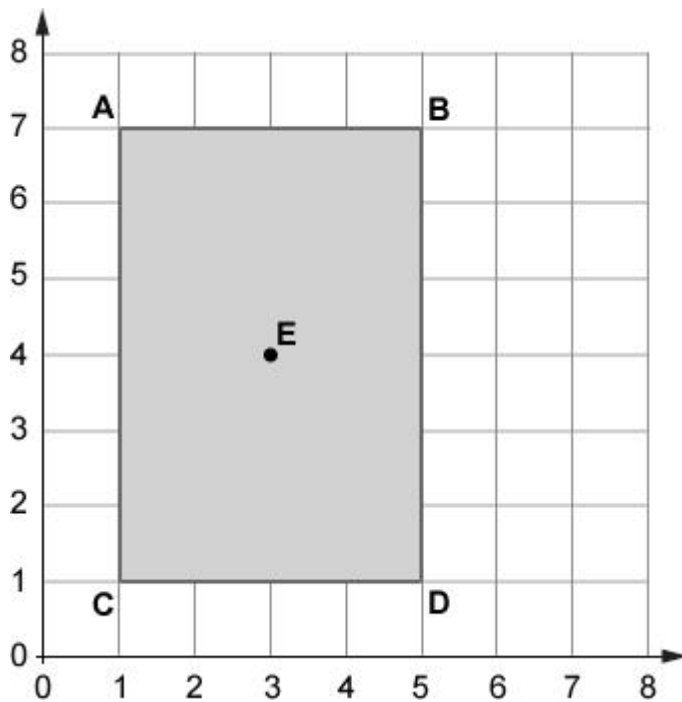
A is the point (10, 10)

What are the coordinates of **B** and **C**?

B is (,)

1 mark

C is (,)

1 mark

Q3.

A, **B**, **C** and **D** are the vertices of a rectangle.

Write the coordinates of point **B**.
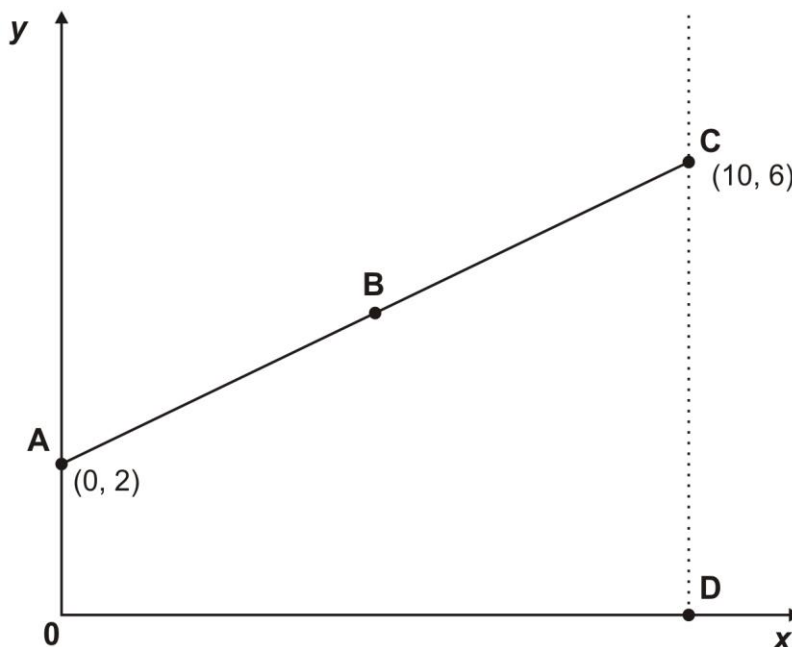
(,   )

1 mark

Point **E** is the centre of the rectangle.
Write the coordinates of point **E**.

(,   )

1 mark

Q4.

Here is a graph

The points **A**, **B** and **C** are **equally spaced**.

What are the **co-ordinates** of the **point B**?

(,   )

1 mark
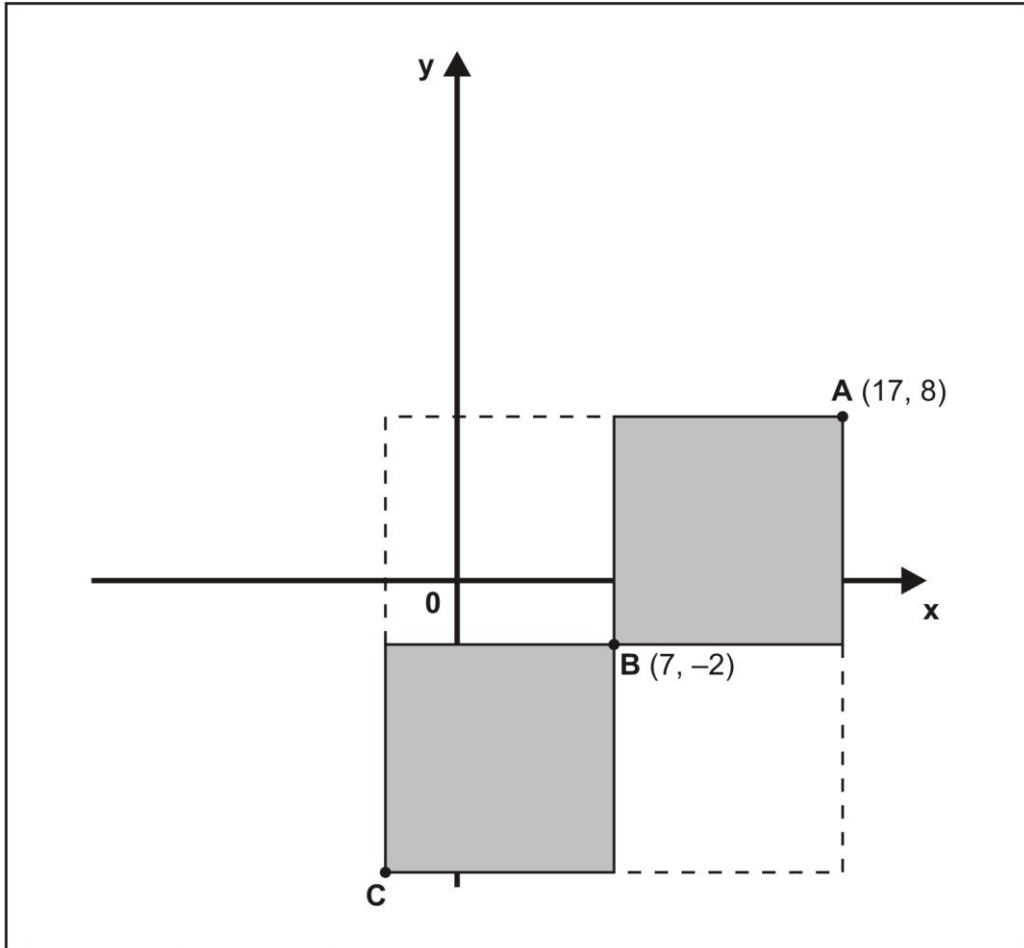
Point **D** is directly below point **C**.

What are the **co-ordinates** of the **point D**?

Q5.

The two **shaded squares** below are **the same size**.

A is the point **(17, 8)**.

B is the point **(7, −2)**.

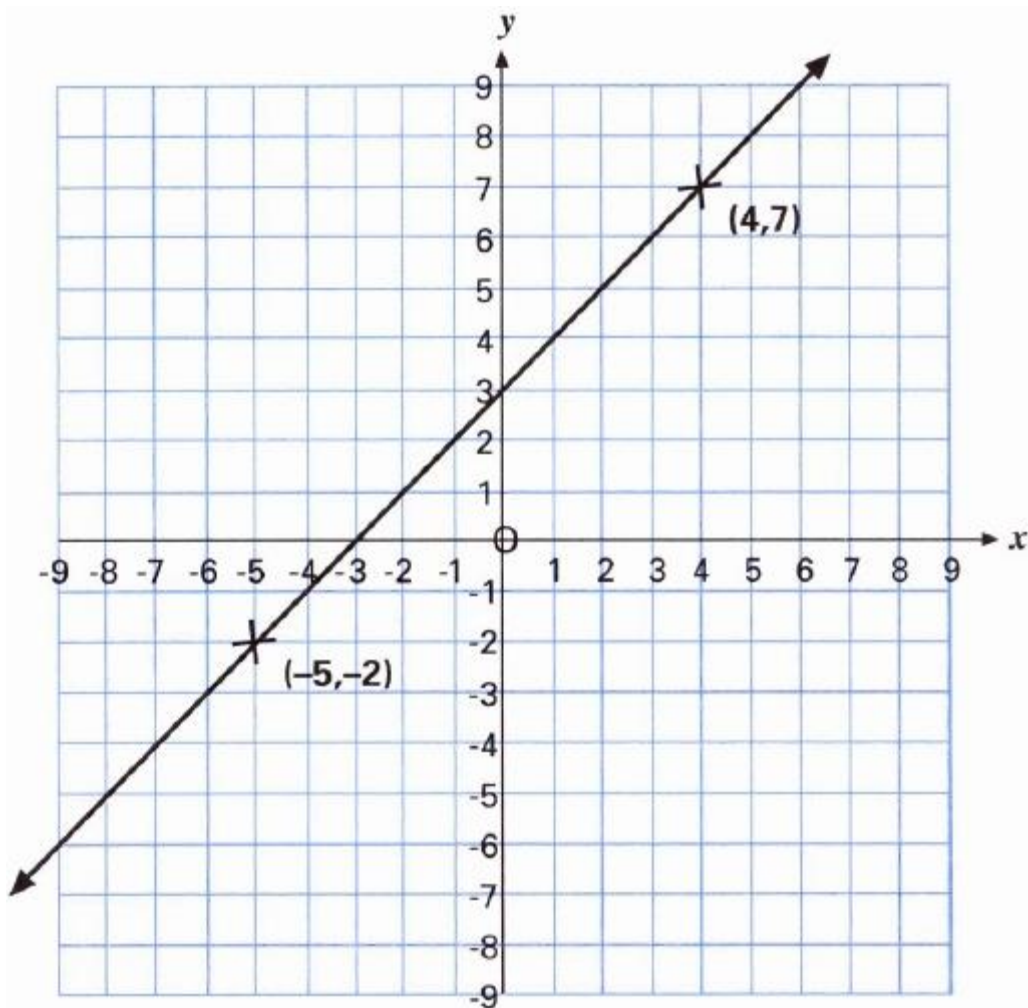What are the **co-ordinates** of the point **C**?

Show your method

(,   )

2 mark

Q6.

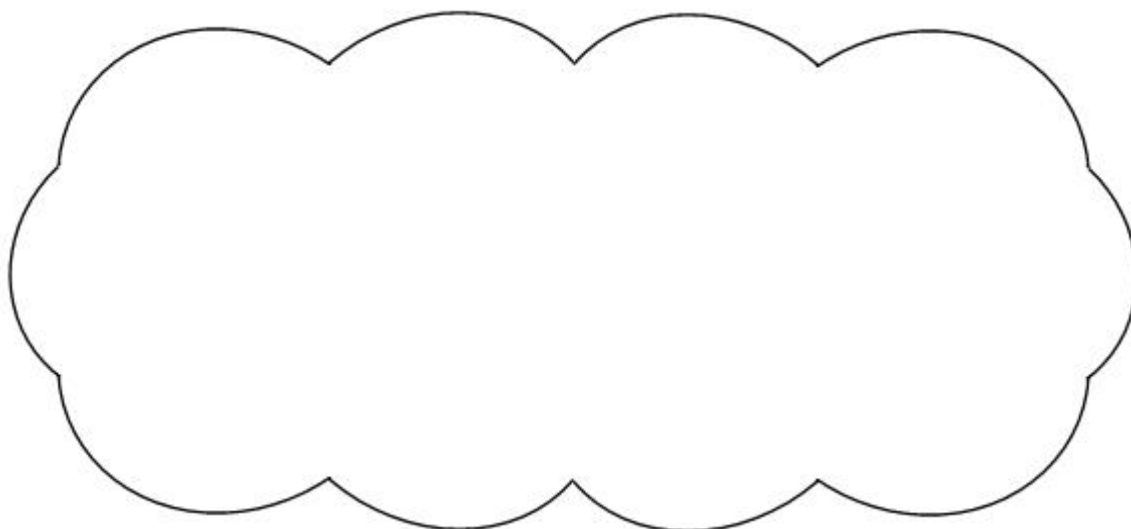The points **(−5, −2)** and **(4, 7)** lie on the same line.

If the line were extended, would it pass through point **(−100, −103)**?

Circle **Yes** or **No**.

Explain how you know.

1 mark

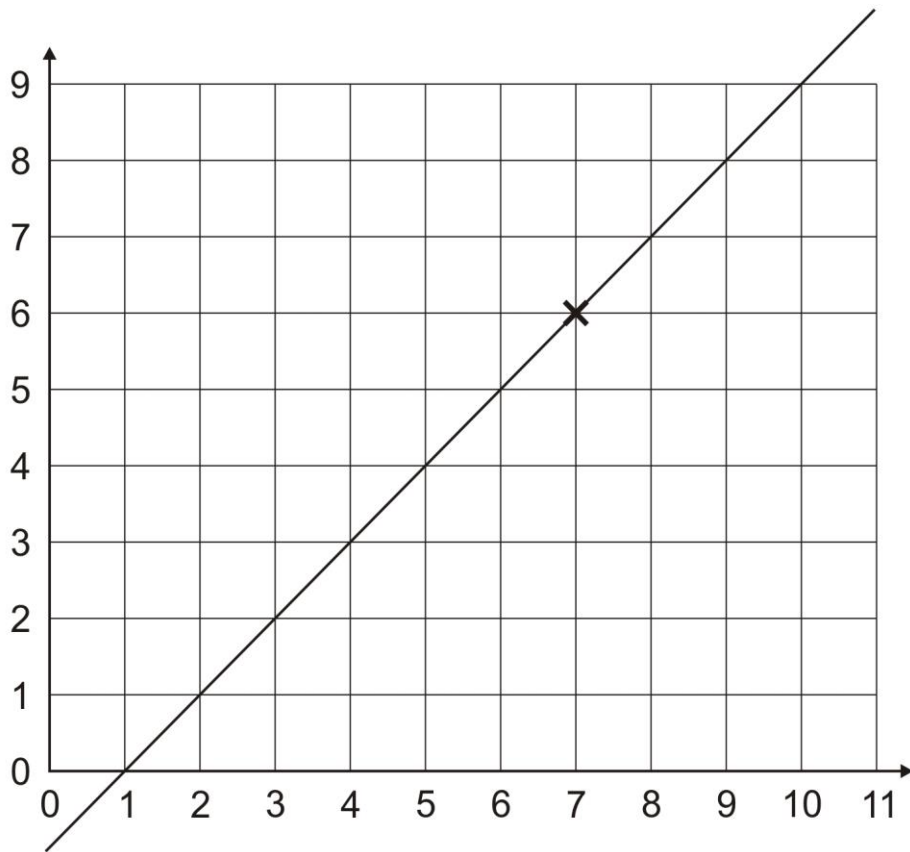Use x and y to write the **equation** of the line.

$y =$

1 mark

Q7.

(7, 6) are coordinates of a point on the line.

Tick (✓) which of these are coordinates of other points on the line.

(3, 2) ☐   (9, 10) ☐   (5, 4) ☐

(4, 2) ☐   (10, 9) ☐   (7, 9) ☐

1 mark

How do you know that point (11, 12) would not be on this line?

_____

_____

_____

1 mark

Q8.

Here is a graph.
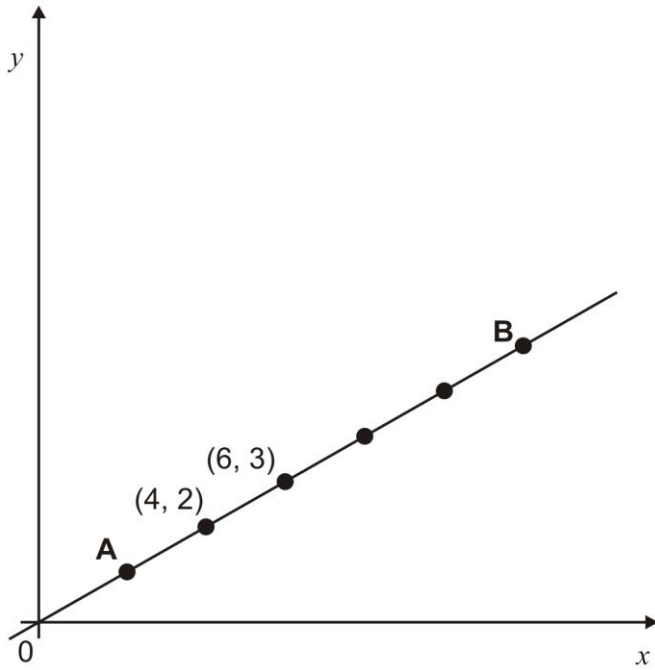
The dots (●) on the line are **equally spaced.**

What are the **coordinates** of the point **A**?

(,   )

1 mark

Megan says,

'The point B has coordinates (11,5).'

Use the graph to explain why she **cannot** be correct.
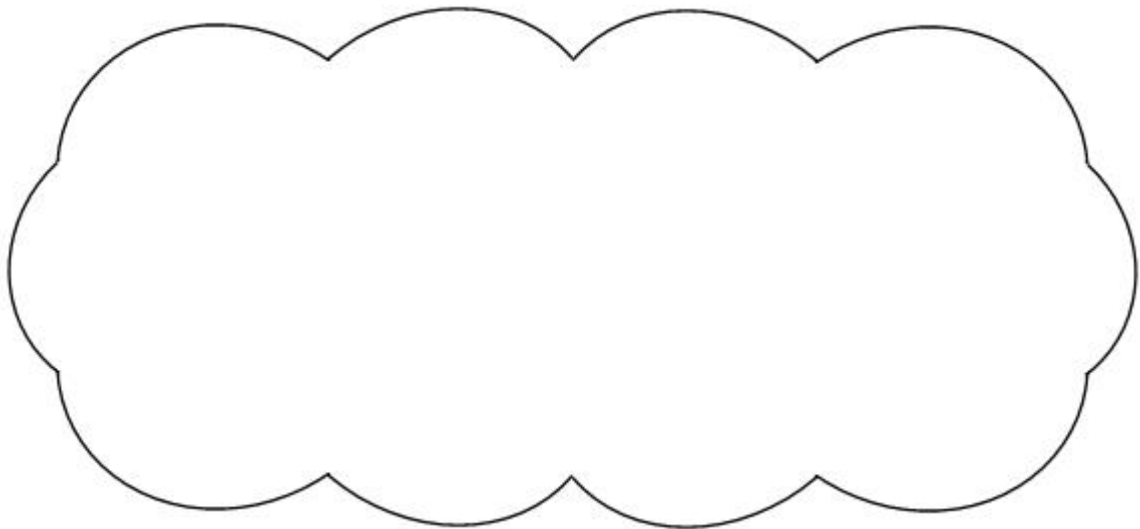
1 mark

Q9.

Here is a shaded **rectangle**.
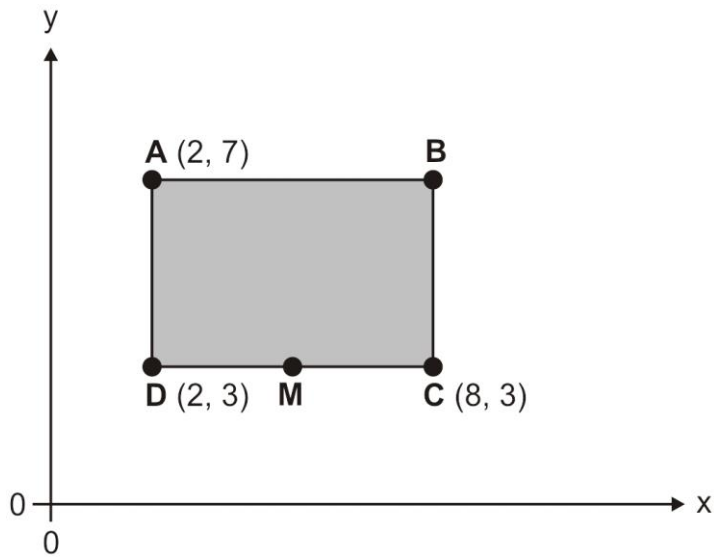
What are the co-ordinates of **B**?

(,   )

1 mark

M is half way between **D** and **C**.

What are the co-ordinates of **M**?

(,   )

1 mark

Q10.

Here is a shaded square on x and y axes.

For each of these points, put a tick (✓) to show if it is inside the square or outside the square.

	inside the square	outside the square
(50, 70)	☐	☐
(60, −30)	☐	☐
(−10, 50)	☐	☐
(−30, −30)	☐	☐

2 marks

Mark schemes

Q1.

(a)   P is (−12, −30)

> *!   Coordinates*
> *Accept unambiguous answers written on the diagram*

1

(b)   Q is (38, −30)

> *!   Answers for P and Q transposed*
> *Award 1 mark for Q only, ie:*
> • *P is (38, −30)*
>   *Q is (−12, −30)*
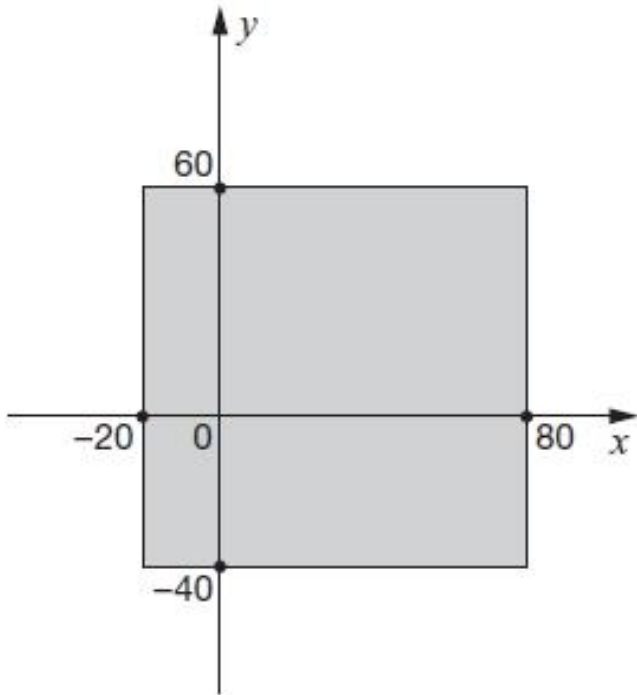> *!   Answer for Q correctly follows through from an incorrect answer for P*
> *Award 1m for Q for follow-through from P as*
> *('their x' + 50, 'their y')*

1

[2]

Q2.

(a)   (0, 10)

> *Coordinates must be written in the correct order.*
> *Accept unambiguous answers written on the diagram.*

1

(b)   (10, 20)

> *If the answer for part (a) is (10, 0) **AND** the answer to (b) is (20, 10), award **ONE** mark only, in the part (b) box.*

1

[2]

Q3.

(5, 7)

1

(3, 4)

1

[2]

Q4.

(a)   (5, 4)

> *Both co-ordinates must be correct and in the correct order.*
> *Accept unambiguous answers written on the diagram (with or without brackets or commas).*

1

(b)   (10, 0)

Both co-ordinates must be correct and in the correct order.

Accept unambiguous answers written on the diagram (with or without brackets or commas).

1

[2]

Q5.

Award **TWO** marks for the correct answer of (– 3, –12),

If the answer is incorrect award **ONE** mark for evidence of an appropriate method, such as deduction of the length of the square from the co-ordinates given **AND** subtraction of this amount from the co-ordinates of B, eg

7 – 10

–2 – 10

Accept appropriate indications on the diagram as evidence of the method.

*Accept for **ONE** mark (–12, –3).*

Up to 2

[2]

Q6.

(a)   No **AND** appropriate supporting reason, eg

'Because the **y** number must be 3 bigger than the **x** number'
'**y** is always bigger than **x** but 103 is less than 100 when you are minus'
'Because the co-ordinates are the wrong way round'

No mark is awarded for 'No' alone.

*If the child has not ticked 'No' award one mark only if the explanation makes it clear why the line does **not** pass through the point (–100, –103).*

Do not accept a correct explanation if 'Yes' has been clearly indicated.

1

(b) $y = x + 3$ OR $y = 3 + x$

1

[2]

Q7.

(a)   ✓ boxes for: (3,2), (5,4) and (10,9).

All three coordinates must be ticked for the mark to be awarded.

1

(b)   Explains that (11,12) cannot be on the line because the value of the first number is always one more than the value of the second number in the coordinate, eg (9,8), or similar explanation.

Explanation can use words or diagrams.

1

[2]

Q8.

(a)   (2, 1)

> *Both the numbers must be correct and in the correct order.*
> *Acceot (2, 1) on diagram with or without comma and brackets.*

1

(b)   Explanation which either implies that **B** has the coordinates (12, 6) **OR** that (11, 5) cannot be on the line because of the general relationship between the points, eg:

- 'Because it's 12, 6'

- 'If you count up in 2's and 1's it doesn't come to 11, 5'

- 'The first numbers are always even'

- 'First should be twice the second number'
    > ***Do not*** *accept arbitrary or vague reasons, such as:*
    > *'She miscounted';*
    > *'Because the bottom line doesn't go up to 11';*
    > *'Because it's in a pattern'.*

1

[2]

Q9.

(a)   (8, 7)   ***Do not*** *accept (7, 8).*

> *Accept co-ordinates written on diagram with or without commas and brackets, eg:*
> - ***(8 7)***
> - ***8 7***
> - ***8,7***

1

(b)   (5, 3)   ***Do not*** *accept (3, 5).*

> *Accept co-ordinates written on diagram with or without commas and brackets, eg:*
> - ***(5 3)***
> - ***5 3***
> - ***5,3***

1

[2]

Q10.

Award **TWO** marks for four rows ticked correctly, as shown:

	✔
✔	

✔	
	✔

If the answer is incorrect, award **ONE** mark for three rows ticked correctly.

Accept: alternative unambiguous indications such as ✘ or Y.

Up to 2

[2]