Maths Worksheet

Find the Midpoint of a Line on a Grid

In this worksheet, students will find the coordinates of the midpoint of a horizontal or vertical line, given its endpoints.

Key Information

Topic	Graphs and Coordinates
Level (1-3)	●○○
Questions	10
Key Stage	KS 3
Year	8
Curriculum Coverage	Algebra
Curriculum Skill	Use Coordinates in All Four Quadrants

Name

Date

Introduction

This activity is about identifying the **midpoints** of a line on a coordinate grid.

The lines will be horizontal or vertical.

You will be given the endpoints of the line.

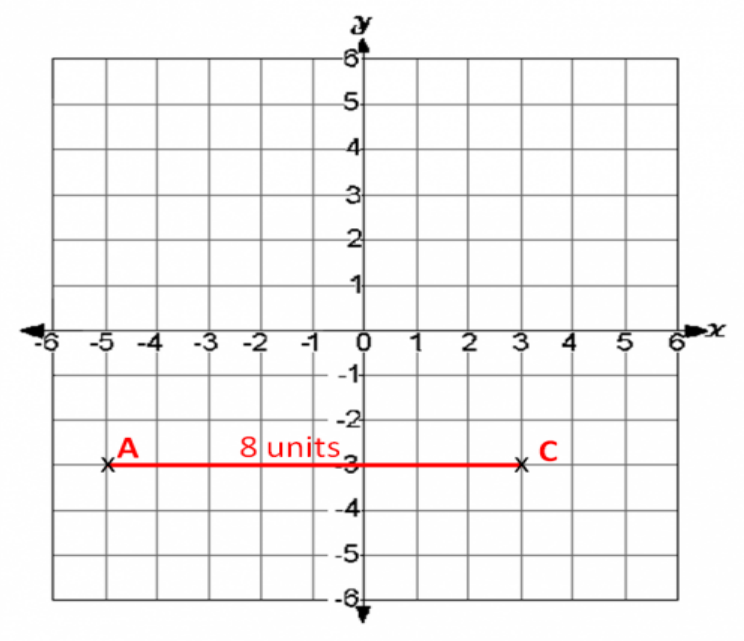
Remember **the x number comes *before* the y number*.***

To find the midpoint

- Find the length of the whole line.
- Halve this length.
- Move along this half-distance from either of the endpoints.

Example

Find the coordinates of M, the midpoint of AC shown on the grid below.



Answer

The line AC is 8 units long.

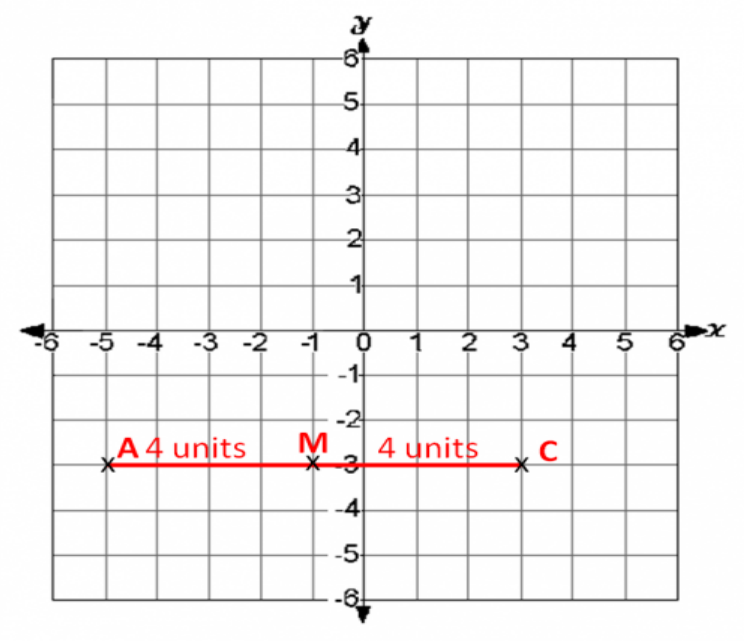
Count the squares to check.

A has an x-coordinate of -5.

B has an x-coordinate of +3.

From -5 up to +3 is 8 units.

The half-distance is 8 ÷ 2 = 4 units.



M is the midpoint on the line AC.

It is 4 units to the right of A and 4 units to the left of C.

The coordinates of M are **(-1, -3)**.

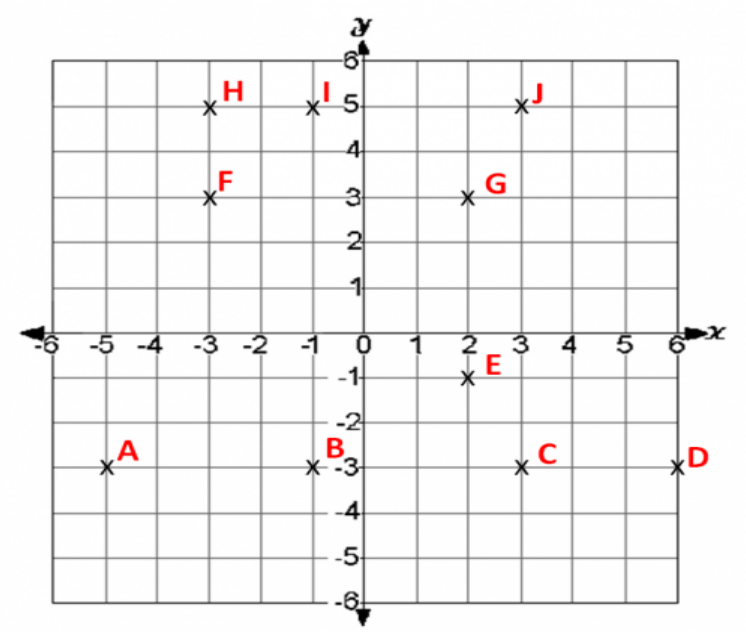
That wasn't too tricky, was it? Let's have a go at some questions now.

QUESTIONS

Question 1

Look at this grid.

Select the coordinates of the midpoint of **AB**.

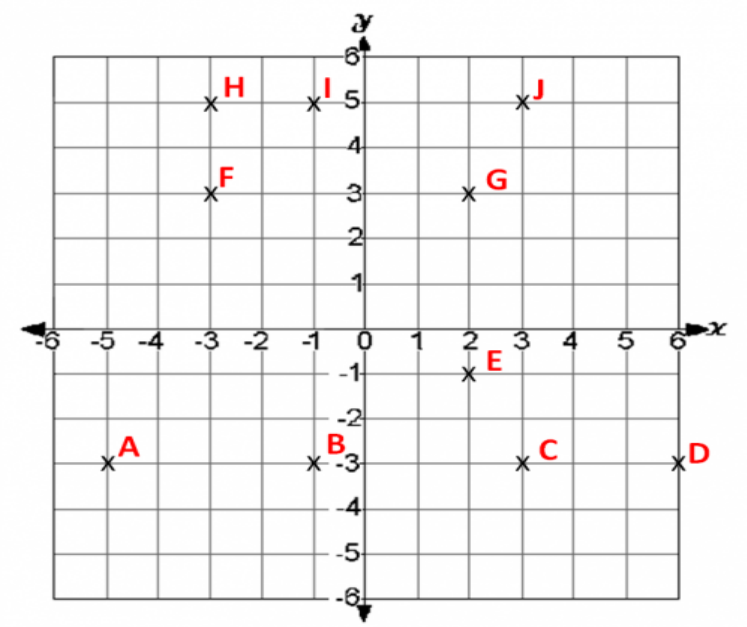


Answer 1	○	(-1, -3)
Answer 2	○	(-3, -3)
Answer 3	○	(2, 1)
Answer 4	○	(-2, 5)
Answer 5	○	(-3, 4)
Answer 6	○	(-1, 1)
Answer 7	○	(4.5, -3)
Answer 8	○	(-0.5, 3)
Answer 9	○	(1, -3)
Answer 10	○	(0, 5)

Question 2

Look at this grid.

Select the coordinates of the midpoint of **HI**.



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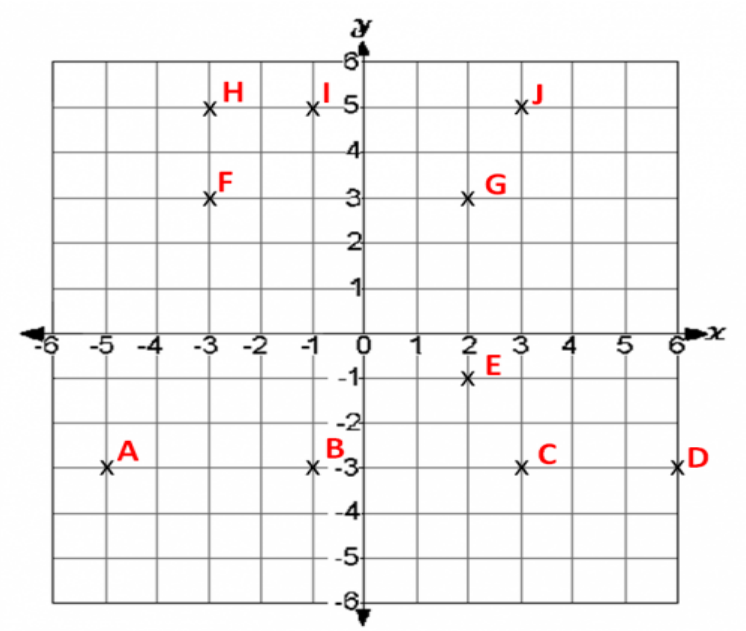
Answer 4	○	(-2, 5)
Answer 5	○	(-3, 4)
Answer 6	○	(-1, 1)
Answer 7	○	(4.5, -3)
Answer 8	○	(-0.5, 3)
Answer 9	○	(1, -3)
Answer 10	○	(0, 5)

Question 3

Look at this grid.

Select the coordinates of the midpoint of **FH**.



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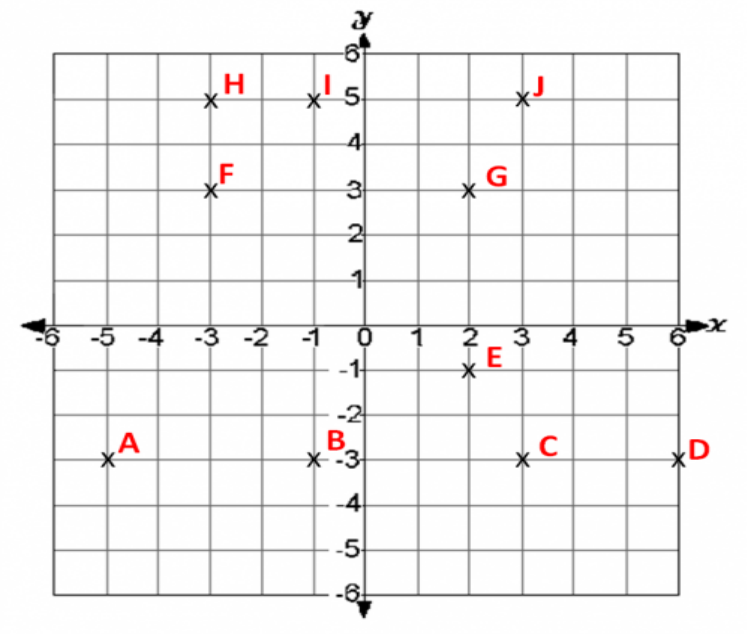
Answer 6	○	(-1, 1)
Answer 7	○	(4.5, -3)
Answer 8	○	(-0.5, 3)
Answer 9	○	(1, -3)
Answer 10	○	(0, 5)

Question 4

Look at this grid.

Select the coordinates of the midpoint of **BC**.

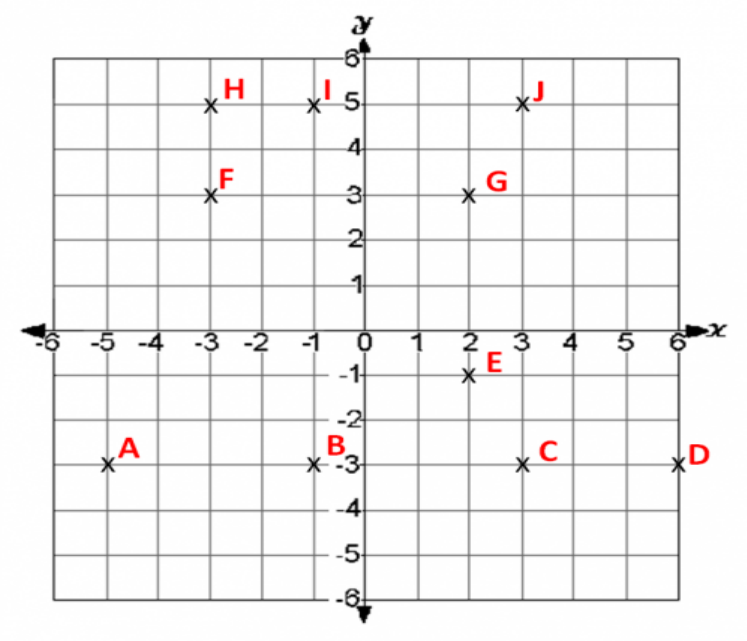


Answer 1	○	(-1, -3)
Answer 2	○	(-3, -3)
Answer 3	○	(2, 1)
Answer 4	○	(-2, 5)
Answer 5	○	(-3, 4)
Answer 6	○	(-1, 1)
Answer 7	○	(4.5, -3)
Answer 8	○	(-0.5, 3)
Answer 9	○	(1, -3)
Answer 10	○	(0, 5)

Question 5

Look at this grid.

Select the coordinates of the midpoint of **EG**.

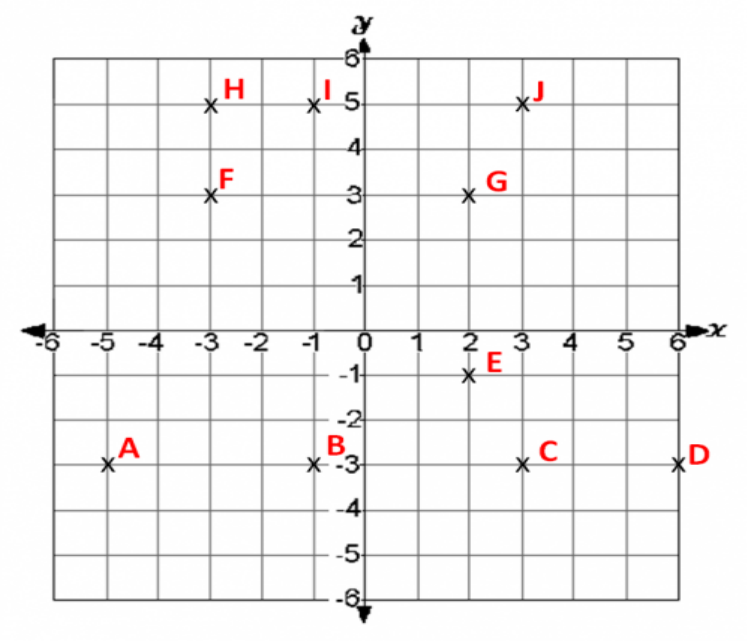


Answer 1	○	(-1, -3)
Answer 2	○	(-3, -3)
Answer 3	○	(2, 1)
Answer 4	○	(-2, 5)
Answer 5	○	(-3, 4)
Answer 6	○	(-1, 1)
Answer 7	○	(4.5, -3)
Answer 8	○	(-0.5, 3)
Answer 9	○	(1, -3)
Answer 10	○	(0, 5)

Question 6

Look at this grid.

Select the coordinates of the midpoint of **HJ**.



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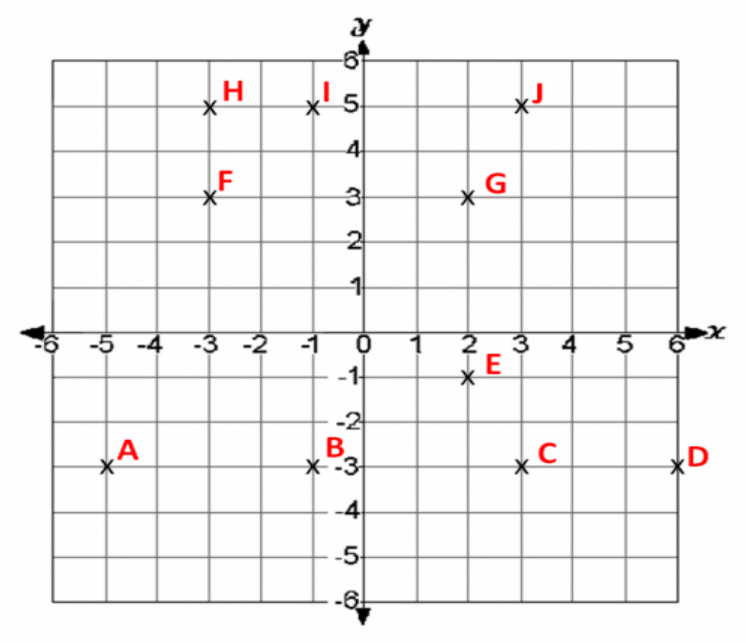
Answer 4	○	(-2, 5)
Answer 5	○	(-3, 4)
Answer 6	○	(-1, 1)
Answer 7	○	(4.5, -3)
Answer 8	○	(-0.5, 3)
Answer 9	○	(1, -3)
Answer 10	○	(0, 5)

Question 7

Look at this grid.

Select the coordinates of the midpoint of **IB**.

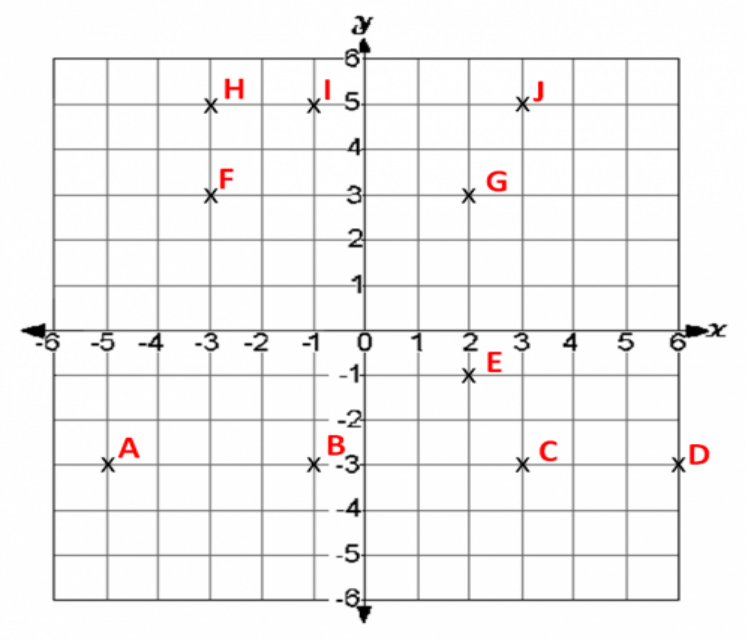


Answer 1	○	(-1, -3)
Answer 2	○	(-3, -3)
Answer 3	○	(2, 1)
Answer 4	○	(-2, 5)
Answer 5	○	(-3, 4)
Answer 6	○	(-1, 1)
Answer 7	○	(4.5, -3)
Answer 8	○	(-0.5, 3)
Answer 9	○	(1, -3)
Answer 10	○	(0, 5)

Question 8

Look at this grid.

Select the coordinates of the midpoint of **AC**.



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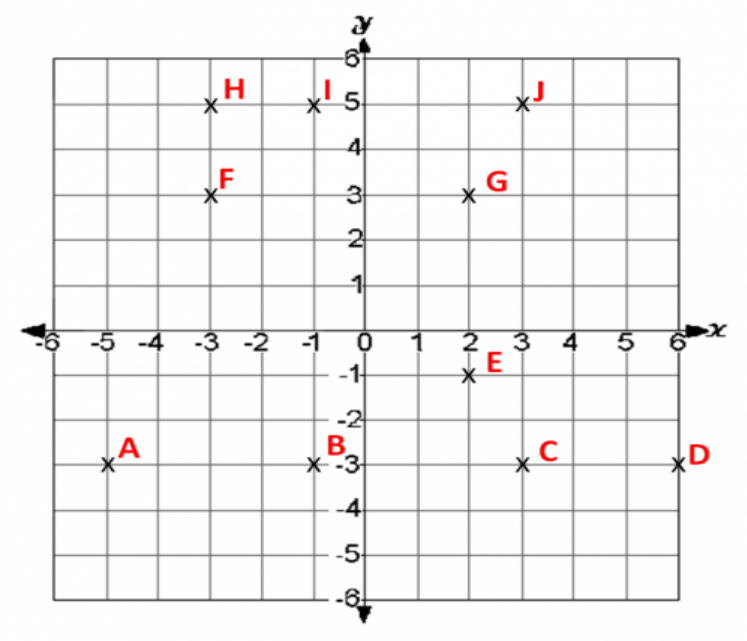
Answer 2	○	(-3, -3)
Answer 3	○	(2, 1)
Answer 4	○	(-2, 5)
Answer 5	○	(-3, 4)
Answer 6	○	(-1, 1)
Answer 7	○	(4.5, -3)
Answer 8	○	(-0.5, 3)
Answer 9	○	(1, -3)
Answer 10	○	(0, 5)

Question 9

Look at this grid.

Select the coordinates of the midpoint of **CD**.

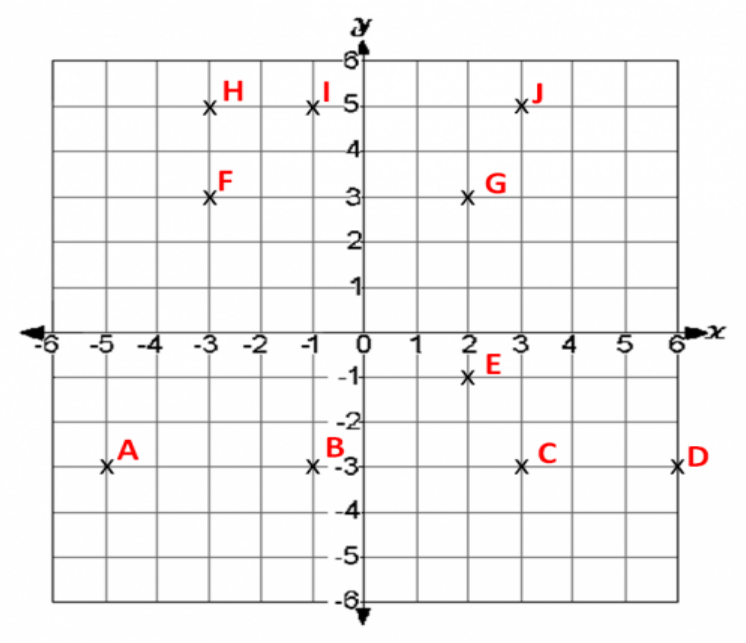


Answer 1	○	(-1, -3)
Answer 2	○	(-3, -3)
Answer 3	○	(2, 1)
Answer 4	○	(-2, 5)
Answer 5	○	(-3, 4)
Answer 6	○	(-1, 1)
Answer 7	○	(4.5, -3)
Answer 8	○	(-0.5, 3)
Answer 9	○	(1, -3)
Answer 10	○	(0, 5)

Question 10

Look at this grid.

Select the coordinates of the midpoint of **FG**.



Answer 1	○	(-1, -3)
Answer 2	○	(-3, -3)
Answer 3	○	(2, 1)
Answer 4	○	(-2, 5)
Answer 5	○	(-3, 4)
Answer 6	○	(-1, 1)
Answer 7	○	(4.5, -3)
Answer 8	○	(-0.5, 3)
Answer 9	○	(1, -3)
Answer 10	○	(0, 5)

ANSWERS

Answer 1

Correct Answers

Answer 1 ⊙ (-3, -3)

Answers Explanation

How did you do? Find points A and B and imagine a line drawn between the two of them. Line AB would be 4 units long. Half the distance is 2 units from either end, count this and read the coordinate. The midpoint is (-3, -3). It is 2 units to the right of A and 2 units to the left of B.

Answer 2

Correct Answers

Answer 1 ⊙ (-2, 5)

Answers Explanation

How did you get on? H to I is 2 units long. Half the distance is 1 unit from either end, count this and read the coordinate. We get (-2, 5)

Answer 3

Correct Answers

Answer 1 ⊙ (-3, 4)

Answers Explanation

Did you spot that it is a vertical line this time? F to H is 2 units long. Half the distance is 1 unit from either end, count this and read the coordinate. The midpoint is (-3, 4)

Answer 4

Correct Answers

Answer 1 (1, -3)

Answers Explanation

B to C is a horizontal line 4 units long. Half the distance is 2 units from either end, count this and read the coordinate. We get (1, -3)

Answer 5

Correct Answers

Answer 1 (2, 1)

Answers Explanation

E to G is a vertical line 4 units long. Half the distance is 2 units from either end, count this and read the coordinate. We get to (2, 1)

Answer 6

Correct Answers

Answer 1 (0, 5)

Answers Explanation

H to J is 6 units long. Half the distance is 3 units from either end, count this and read the coordinate. The midpoint is (0, 5)

Answer 7

Correct Answers

Answer 1 (-1, 1)

Answers Explanation

How are you getting on? I to B is 4 units long. Half the distance is 2 units from either end, count this and read the coordinate. The midpoint is (-1, 1)

Answer 8

Correct Answers

Answer 1 (-1, -3)

Answers Explanation

Are you getting the hang of this yet? A to C is 8 units long. Half the distance is 4 units from either end, count this and read the coordinate. The midpoint is (-1, -3)

Answer 9

Correct Answers

Answer 1 (4.5, -3)

Answers Explanation

This one is a bit harder. C to D is 3 units long Half the distance is 1.5 units from either end, count this and read the coordinate. The midpoint is (4.5, -3)

Answer 10

Correct Answers

Answer 1 (-0.5, 3)

Answers Explanation

The final question! How do you feel about these? F to G is 5 units long. Half the distance is 2.5 units from either end, count this and read the coordinate. The midpoint is (-0.5, 3) Well done - you've completed this activity!