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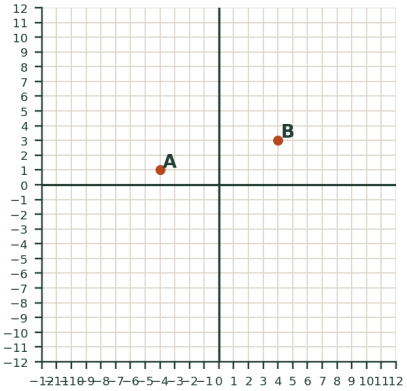
Midpoint of a Line Segment

Grade 5 topic · Foundation and Higher · Edexcel and AQA

How to use this pack
20 questions that get harder as you go. Foundation students: aim for Questions 1–15 (45 marks) and have a go at the rest. Higher students: complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 67 marks.

Warm-up

1 Find the midpoint of A(−4, 1) and B(4, 3). **[2 marks]**

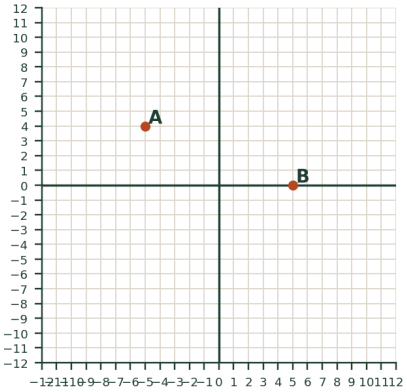


Answer _____

2 Find the midpoint of the line segment joining (−5, −2) and (−3, 0). **[2 marks]**

Answer _____

3 Find the midpoint of A(−5, 4) and B(5, 0). **[2 marks]**

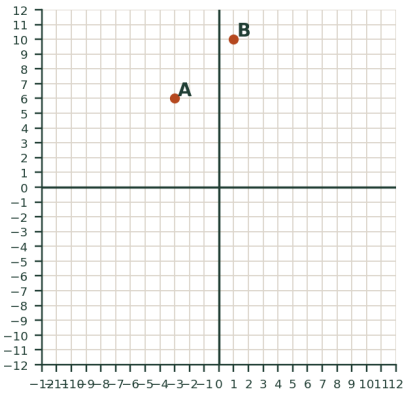


Answer _____

4 Find the midpoint of the line segment joining (−4, 4) and (4, 8). **[2 marks]**

Answer _____

5 Find the midpoint of A(−3, 6) and B(1, 10). **[2 marks]**



Answer _____

Core

6 The midpoint of PQ is (10, −3). P is (15, −5). Find Q. **[3 marks]**

Answer _____

7 M(6, 2) is the midpoint of AB. A is (5, 5). Find the coordinates of B. **[3 marks]**

Answer _____

8 The midpoint of PQ is (0, 5). P is (1, 6). Find Q. **[3 marks]**

Answer _____

9 M(−4, 5) is the midpoint of AB. A is (−6, 4). Find the coordinates of B. **[3 marks]**

Answer _____

10 The midpoint of PQ is (4, −2). P is (5, 2). Find Q. **[3 marks]**

Answer _____

Stretch

11 A is (1, 1) and B is (11, −1). Work out the length of AB to 3 s.f. **[4 marks]**

Answer _____

12 The midpoint of AB is (−2, −1). A is (−5, −5). Work out the length of AB. **[4 marks]**

Answer _____

13 ABCD is a parallelogram. A is (0, 0), B is (6, 2), D is (2, 4). Find the midpoint of the diagonal AC. **[4 marks]**

Answer _____

14 The endpoints of a diameter of a circle are (3, −5) and (11, 3). Find the centre of the circle. **[3 marks]**

Answer _____

15 A is (−5, −6) and B is (−3, −8). Find the radius of the circle with diameter AB to 3 s.f. **[5 marks]**

Answer _____

Challenge

16 A triangle has vertices A(0, 0), B(8, 0) and C(4, 6). Find the midpoint of each side. **[5 marks]**

Answer _____

17 The midpoint of AB is (−1, −1). The x-coordinate of A is -5 and the y-coordinate of B is -5. Find the other two coordinates (the y of A and the x of B). **[5 marks]**

Answer _____

18 Find the equation of the perpendicular bisector of A(0, 0) and B(8, 4). **[6 marks]**

Answer _____

19 A is (4, −5) and the midpoint of AB is (6, −7). Show that B is (8, −9). **[4 marks]**

Answer _____

20 Find the midpoint of $(-6, -4)$ and $(2, -10)$. **[2 marks]**

Answer _____