



1.12D Coordinates: Fluency and Exam Drill

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 40 minutes

Total Marks

--

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** Point A is at the intersection of the vertical line $x = -2$ and the horizontal line $y = 5$. Write down the coordinates of A.

(Total for Question 1 is 1 mark)

- 2** Point B is 3 units to the right of the origin and 4 units below the origin. Give the coordinates of B.

(Total for Question 2 is 1 mark)

- 3** Which quadrant contains the point C with coordinates $(-6, 2)$?

(Total for Question 3 is 1 mark)

- 4** Find the midpoint of the line segment with endpoints A(2, -3) and B(6, 5).

(Total for Question 4 is 2 marks)

- 5** Find the midpoint of P(-7, -1) and Q(5, 3).

(Total for Question 5 is 2 marks)

- 6** Work out the length of the horizontal segment joining the points $(-4, 2)$ and $(3, 2)$.

(Total for Question 6 is 2 marks)

- 7** A rectangle has vertices at $A(2, 1)$, $B(6, 1)$ and $C(6, 4)$. Find the coordinates of the fourth vertex D .

(Total for Question 7 is 3 marks)

- 8** Given points $A(-1, 2)$, $B(3, 5)$ and $C(6, 1)$ are three consecutive vertices of a parallelogram $ABCD$ in that order. Find the coordinates of D .

(Total for Question 8 is 3 marks)

- 9** Show that the midpoint of the diagonal AC is $(1, 2)$ for the rectangle with vertices $A(-3, 0)$, $B(5, 0)$, $C(5, 4)$ and $D(-3, 4)$.

(Total for Question 9 is 3 marks)

- 10** Point $P(-2, 3)$ is translated by the vector $(5, -7)$. Find the coordinates of the image of P after the translation.

(Total for Question 10 is 3 marks)

- 11** Find the coordinates of D to complete the rectangle with vertices A(-2, 1), B(4, 1) and C(4, 6).

(Total for Question 11 is 3 marks)

- 12** A(1, 2), B(4, 5) and C(7, 2) are three vertices of a rectangle in that order. Find the coordinates of the fourth vertex D. Show your working.

(Total for Question 12 is 4 marks)

Mark scheme · 1.12D Coordinates: Fluency and Exam Drill

Question 1

- **B1** (-2, 5) cao
- **Answer:** (-2, 5)

Question 2

- **B1** (3, -4) cao
- **Answer:** (3, -4)

Question 3

- **B1** Quadrant II or Q2 oe
- **Answer:** Quadrant II

Question 4

- **M1** add x-coordinates and divide by 2, and add y-coordinates and divide by 2 (method shown)
- **A1** (4, 1) cao
- **Answer:** (4, 1)

Question 5

- **M1** calculate midpoint: $((-7+5)/2, (-1+3)/2)$ shown
- **A1** (-1, 1) cao
- **Answer:** (-1, 1)

Question 6

- **M1** find difference in x-coordinates: $3 - (-4)$ or equivalent
- **A1** 7 cao
- **Answer:** 7

Question 7

- **M1** recognise x-coordinate of D equals x of A (2) or use vector method
- **M1** recognise y-coordinate of D equals y of C (4)
- **A1** (2, 4) cao
- **Answer:** (2, 4)

Question 8

- **M1** calculate vector $BC = C - B = (3, -4)$ or show method
- **M1** apply vector to A: $D = A + BC$ shown
- **A1** (2, -2) cao
- **Answer:** (2, -2)

Question 9

- **M1** show x-midpoint: $(-3 + 5)/2 = 1$
- **M1** show y-midpoint: $(0 + 4)/2 = 2$
- **A1** (1, 2) cso
- **Answer:** (1, 2)

Question 10

- **M1** add vector components: x: $-2 + 5$ shown
- **M1** add vector components: y: $3 + (-7)$ shown
- **A1** (3, -4) cao
- **Answer:** (3, -4)

Question 11

- **M1** recognise x-coordinate of D equals x of A (-2) or vector method
- **M1** recognise y-coordinate of D equals y of C (6)
- **A1** (-2, 6) cao
- **Answer:** (-2, 6)

Question 12

- **M1** calculate vector $BC = C - B = (3, -3)$ or show equivalent method
- **M1** state $D = A + BC$ or show applying vector to A
- **M1** compute coordinates: $(1+3, 2+(-3))$ shown
- **A1** (4, -1) cao
- **Answer:** (4, -1)