4.13 Coordinates and Line Geometry: 30-minute Pack

Calculators not allowed · about 30 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A is the point (8, -1) and B is the point (4, 5). Work out the coordinates of the midpoint of AB.

(2)

2 M is the midpoint of AB. A is (0, -4) and M is (-3.5, -4.5). Work out the coordinates of B.

(3)

3 Write down the equation of (a) the horizontal line and (b) the vertical line that pass through the point (4, 3).

(2)

4 M is the midpoint of AB. A is (-8, 7) and M is (-8, 5.5). Work out the coordinates of B.

(3)

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5 Does the point (-4, -18) lie on the line y = 5x? You must show your working.

(2)

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6 In which quadrant does the point P (-8, -1) lie?

(1)

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7 The point (k, -2) lies on the line y = x - 4. Find the value of k.

(2)

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8 Three corners of a rectangle are (-6, -1), (0, -1) and (0, 2). Write down the coordinates of the fourth corner and work out the area of the rectangle.

(3)

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9 A straight line passes through (1, -9) and (2, -12). Find the equation of the line.

(3)

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10 Calculate the distance between the points that lie on the same horizontal or vertical line.

(a) Distance between E(3, 7) and F(3, -2). **(1)**

(b) Distance between G(-6, 4) and H(2, 4). **(1)**

11 Look at the point P(-6, 3). State which quadrant P lies in.

(1)

12 Reflect the point R(5, -3) in the x-axis. Write down the coordinates of the image.

(1)

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Mark scheme · 4.13 Coordinates and Line Geometry: 30-minute Pack

Question 1

adds the x-coordinates (or y-coordinates) and halves **M1**

(6, 2) cao **A1**

Answer: **(6, 2)**

Question 2

uses the change from A to M **M1**

applies the same change again from M **M1**

(-7, -5) cao **A1**

Answer: **(-7, -5)**

Question 3

(a) y = 3 **B1**

(b) x = 4 **B1**

Answer: **(a) y = 3, (b) x = 4**

Question 4

uses the change from A to M **M1**

applies the same change again from M **M1**

(-8, 4) cao **A1**

Answer: **(-8, 4)**

Question 5

substitutes x = -4 to get y = -20 **M1**

No with comparison **A1**

Answer: **No**

Question 6

third quadrant cao **B1**

Answer: **third quadrant**

Question 7

-2 = k - 4 (or equivalent) **M1**

2 cao **A1**

Answer: **2**

Question 8

uses matching x and y values **M1**

(-6, 2) **A1**

area 18 **A1**

Answer: **(-6, 2), area 18**

Question 9

gradient found **M1**

substitutes a point to find c **M1**

y = -3x - 6 cao **A1**

Answer: **y = -3x - 6**

Question 10

(a) 9 cao (difference in y: 7 - (-2) = 9) **B1**

(a) Answer: **9**

(b) 8 cao (difference in x: 2 - (-6) = 8) **B1**

(b) Answer: **8**

Question 11

second quadrant cao **B1**

Answer: **second quadrant**

Question 12

(5, 3) cao **B1**

Answer: **(5, 3)**

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