8.9 Geometry: Coordinates and Transformations: 30-minute Pack

Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A line joins (0, 2) and (2, 2).

What are the coordinates of the midpoint of the line?

Answer: (___, ___)

(1)

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2 Point A is at (7, 2). It is translated by the vector (-2, 5), where the first number is the move to the right and the second is the move up.

What are the coordinates of the image of A?

Answer: (___, ___)

(2)

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3 Two angles in a triangle are 28 degrees and 48 degrees.

What is the third angle?

Answer: ___ degrees

(2)

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4 An isosceles triangle has two equal angles of 23 degrees each.

What is the third angle?

Answer: ___ degrees

(2)

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5 Point B is at (5, -2). It is reflected in the y-axis.

What are the coordinates of the image of B?

Answer: (___, ___)

(2)

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6 Point B is at (-6, 3). It is reflected in the y-axis.

What are the coordinates of the image of B?

Answer: (___, ___)

(2)

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7 Points C and D are at (-4, 0) and (-1, 0). Each grid square is 1 unit wide.

How far is C from D?

Answer: ___ units

(1)

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8 A shape has vertices A(1, 1), B(3, 5), C(5, 3). It is translated 4 units right and 1 unit down.

Write the coordinates of the translated vertices in the same order.

Answer: ___

(2)

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9 Point P is at (6, 3). It moves 2 units right.

What are the coordinates of the new point?

Answer: (___, ___)

(2)

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10 Point N lies on the y-axis at (0, 4). Explain why a reflection of N in the y-axis maps N to itself.

(2)

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11 The line x = 1 is a line of reflection. Point S at (3, -2) is reflected in the line x = 1. What are the coordinates of S'?

(2)

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12 Plot point C at (2, 3) and point D at (-1, 3) on a set of axes. What is the distance between C and D along the horizontal direction?

(2)

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13 Point B is at (0, 0). It is reflected in the mirror line x = 2.

What are the coordinates of the image of B?

Answer: (___, ___)

(2)

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14 Point E is at (-3, -4). Translate E by the vector (5, 0). What are the coordinates of the new point?

(1)

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Mark scheme · 8.9 Geometry: Coordinates and Transformations: 30-minute Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

(1, 2) cao — **B1**

Answer: **(1, 2)**

Question 2

adds the vector — **M1**

(5, 7) cao — **A1**

Answer: **(5, 7)**

Question 3

76 seen — **M1**

104 degrees cao — **A1**

Answer: **104 degrees**

Question 4

46 seen — **M1**

134 degrees cao — **A1**

Answer: **134 degrees**

Question 5

one coordinate correct — **M1**

(-5, -2) cao — **A1**

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

Question 6

one coordinate correct — **M1**

(6, 3) cao — **A1**

Answer: **(6, 3)**

Question 7

3 units cao — **B1**

Answer: **3 units**

Question 8

two vertices correct — **M1**

(5, 0), (7, 4), (9, 2) cao — **A1**

Answer: **(5, 0), (7, 4), (9, 2)**

Question 9

one coordinate correct — **M1**

(8, 3) cao — **A1**

Answer: **(8, 3)**

Question 10

State that reflecting in y-axis changes x to -x — **M1**

Conclude (0, 4) -> (-0, 4) which is same point so it maps to itself cao — **B1**

Answer: **(0, 4) maps to (-0, 4) which is (0, 4); x becomes -x so 0 stays 0**

Question 11

Recognise distance from x=1 is 2 units to the right so image is 2 units left of x=1 — **M1**

S' at (-1, -2) cao — **B1**

Answer: **(-1, -2)**

Question 12

Find horizontal difference, 2 - (-1) or |-1 to 2| seen — **M1**

3 cao — **B1**

Answer: **3**

Question 13

same distance from the mirror line — **M1**

(4, 0) cao — **A1**

Answer: **(4, 0)**

Question 14

(2, -4) cao — **B1**

Answer: **(2, -4)**

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