2.95 Coordinates, Reflection and Translation: 10-minute Pack

Total Marks

GL ASSESSMENT GL-11PLUS-MATHS · Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 What are the coordinates of the midpoint of the line joining (0, -6) and (10, -10)?

- ☐ A) (10, -16)
- ☐ B) (10, -4)
- ☐ C) (-8, 5)
- ☐ D) (5, 2)
- ☐ E) (5, -8)

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2 The point P is at (-5, -6). P is translated 4 right and 5 up. What are the new coordinates of P?

- ☐ A) (-1, -1)
- ☐ B) (4, 5)
- ☐ C) (-9, -11)
- ☐ D) (-9, -1)
- ☐ E) (0, -2)

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3 Three corners of a rectangle are at (0, 7), (0, 2) and (2, 2). What are the coordinates of the fourth corner?

- ☐ A) (-2, 7)
- ☐ B) (2, -3)
- ☐ C) (2, 8)
- ☐ D) (2, 7)
- ☐ E) (3, 7)

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4 Point H is at (-2, 0). Which reflection will move H to (2, 0)?

- ☐ A) Reflect in the x-axis
- ☐ B) Reflect in the y-axis
- ☐ C) Reflect in the line y = x
- ☐ D) Translate by (4, 0)
- ☐ E) Rotate 180 degrees about the origin

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5 Reflect point C(-5, 2) in the x-axis. Give the coordinates of the image.

(1)

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6 Point G is at (3, -5). It is reflected in the x-axis, then translated by (-2, 3). Work out the final coordinates.

(2)

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7 Triangle with vertex A(-1, 2) is reflected in the x-axis to form A1, then A1 is translated by (4, -1) to form A2. Find the coordinates of A2.

(2)

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8 A point starts at (1, 1). It is translated by (2, -1), then reflected in the y-axis, then translated by (-3, 5). What are the final coordinates?

(2)

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Mark scheme · 2.95 Coordinates, Reflection and Translation: 10-minute Pack

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

Question 1

correct option E ((5, -8)) cao **B1**

Answer: E) (5, -8)

Question 2

correct option A ((-1, -1)) cao **B1**

Answer: A) (-1, -1)

Question 3

correct option D ((2, 7)) cao **B1**

Answer: D) (2, 7)

Question 4

correct option B (reflect in the y-axis) cao **B1**

Answer: B) Reflect in the y-axis. Reflection in y-axis changes (-2,0) to (2,0). A would give (-2,0) -> (-2,0) as y=0 unchanged; C swaps coordinates; D gives (2,0) only if translate by (4,0) from (-2,0) but that is also correct numerically; however translation is not a reflection so B is correct reflection. (Note: D would move H to (2,0) but the question asks which reflection.)

Question 5

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

Answer: (-5, -2). Reflection in the x-axis changes y to its negative; x stays the same.

Question 6

Reflect then translate method seen, e.g. (3, -5) -> (3, 5) -> (1, 8) **M1**

(1, 8) cao **A1**

Answer: (1, 8). Reflection in x-axis gives (3, 5); adding (-2, 3) gives (1, 8).

Question 7

Reflect then translate method shown, e.g. (-1,2) -> (-1,-2) -> (3,-3) **M1**

(3, -3) cao **A1**

Answer: (3, -3). Reflection in x-axis gives (-1, -2); adding (4, -1) gives (3, -3).

Question 8

Method showing sequence applied correctly, e.g. (1,1)-> (3,0)->(-3,0)->(-6,5) **M1**

(-6, 5) cao **A1**

Answer: (-6, 5). Steps: (1,1)+(2,-1) = (3,0); reflect in y-axis -> (-3,0); add (-3,5) -> (-6,5).

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