8.5 Geometry: Symmetry, Coordinates and Translation: 1-hour Pack

Total Marks

Calculators not allowed · about 60 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Draw a rectangle with vertices at (2, 2), (6, 2), (6, 5) and (2, 5). A translation moves every point 4 right and 2 up. What are the coordinates of the translated rectangle's vertices?

(2)

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2 Four angles meet at a point and add up to 360 degrees. Three of the angles are 90, 86 and 30 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

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3 A rectangle has sides of different lengths. How many lines of symmetry does it have? Write the number.

(2)

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4 A right angle is split into two angles. One of them is 16 degrees.

What is the other?

Answer: ___ degrees

(1)

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5 Angles on a straight line add up to 180 degrees. Two angles on a straight line are 110 degrees and 24 degrees. A third angle fills the rest of the line.

What is the third angle?

Answer: ___ degrees

(2)

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6 Points C and D are at (5, 0) and (9, 0). Each grid square is 1 unit wide.

How far is C from D?

Answer: ___ units

(1)

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7 Angles on a straight line add up to 180 degrees. One angle is 87 degrees.

What is the other angle?

Answer: ___ degrees

(1)

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8 A shape has vertices A(3, 2), B(2, 6), C(5, 4), D(6, 5). It is translated 1 unit left and 1 unit down.

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

Answer: ___

(2)

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9 Points C and D are at (7, 6) and (7, 9). Each grid square is 1 unit wide.

How far is C from D?

Answer: ___ units

(1)

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10 An angle measures 226 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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11 An angle measures 29 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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12 An angle measures 155 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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13 A robot turns 4 quarter turns clockwise. Through how many degrees has it turned altogether?

Answer: ___ degrees

(1)

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14 Point P is at (3, 6). It moves 3 units right and 1 unit up.

What are the coordinates of the new point?

Answer: (___, ___)

(2)

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15 A right angle is split into two angles. One of them is 41 degrees.

What is the other?

Answer: ___ degrees

(1)

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16 A shape has vertices A(1, 2), B(4, 5), C(3, 5), D(3, 1). It is translated 1 unit right and 1 unit up.

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

Answer: ___

(2)

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17 A shape has vertices A(5, 2), B(3, 1), C(0, 4), D(2, 1). It is translated 4 units right and 2 units up.

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

Answer: ___

(2)

---

18 An angle measures 351 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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19 Point P is at (5, 2). It moves 4 units left and 2 units down.

What are the coordinates of the new point?

Answer: (___, ___)

(2)

---

20 An angle measures 199 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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21 On a grid, a point A is at (2, 5). Translate A 3 right and 2 down. Write the coordinates of the new point.

(2)

22 Point P is at (9, 3). It moves 1 unit up.

What are the coordinates of the new point?

Answer: (___, ___)

(2)

23 A shape has vertices A(2, 6), B(6, 0), C(0, 6). It is translated 3 units up.

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

Answer: ___

(2)

24 An angle measures 289 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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25 Point A is at (5, 1). It is translated by the vector (0, 4), 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: (___, ___)

(1)

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26 Four angles meet at a point and add up to 360 degrees. Three of the angles are 104, 56 and 37 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

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27 A shape has vertices A(0, 1), B(6, 4), C(6, 0). It is translated 4 units up.

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

Answer: ___

(2)

---

28 Four angles meet at a point and add up to 360 degrees. Three of the angles are 102, 52 and 73 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

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29 An angle measures 5 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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30 Point A is at (9, 2). It is translated by the vector (-4, 3), 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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31 An angle measures 82 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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Mark scheme · 8.5 Geometry: Symmetry, Coordinates and Translation: 1-hour Pack

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

Question 1

Add 4 to x and 2 to y for each vertex — M1
(6, 4), (10, 4), (10, 7), (6, 7) cao — B1
Answer: **(6, 4), (10, 4), (10, 7), (6, 7)**

Question 2

206 seen — M1
154 degrees cao — A1
Answer: **154 degrees**

Question 3

1 mark for recognising the two axes (vertical and horizontal) as possible — B1
1 mark for two lines of symmetry cao — B1
Answer: **2**

Question 4

74 degrees cao — B1
Answer: **74 degrees**

Question 5

134 seen — M1
46 degrees cao — A1
Answer: **46 degrees**

Question 6

4 units cao — B1
Answer: **4 units**

Question 7

93 degrees cao — B1
Answer: **93 degrees**

Question 8

two vertices correct — M1
(2, 1), (1, 5), (4, 3), (5, 4) cao — A1
Answer: **(2, 1), (1, 5), (4, 3), (5, 4)**

Question 9

3 units cao — B1
Answer: **3 units**

Question 10

reflex cao — B1
Answer: **reflex**

Question 11

acute cao — B1
Answer: **acute**

Question 12

obtuse cao — B1
Answer: **obtuse**

Question 13

360 degrees cao — B1
Answer: **360 degrees**

Question 14

one coordinate correct — M1
(6, 7) cao — A1
Answer: **(6, 7)**

Question 15

49 degrees cao — B1
Answer: **49 degrees**

Question 16

two vertices correct — M1
(2, 3), (5, 6), (4, 6), (4, 2) cao — A1
Answer: **(2, 3), (5, 6), (4, 6), (4, 2)**

Question 17

two vertices correct — M1
(9, 4), (7, 3), (4, 6), (6, 3) cao — A1
Answer: **(9, 4), (7, 3), (4, 6), (6, 3)**

Question 18

reflex cao — B1
Answer: **reflex**

Question 19

one coordinate correct — M1
(1, 0) cao — A1
Answer: **(1, 0)**

Question 20

reflex cao — B1
Answer: **reflex**

Question 21

Addition of 3 to x and subtraction of 2 from y shown — M1
(5, 3) cao — B1
Answer: **(5, 3)**

Question 22

one coordinate correct — M1
(9, 4) cao — A1
Answer: **(9, 4)**

Question 23

two vertices correct — M1
(2, 9), (6, 3), (0, 9) cao — A1
Answer: **(2, 9), (6, 3), (0, 9)**

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Question 24

reflex cao — **B1**

Answer: **reflex**

Question 25

(5, 5) cao — **B1**

Answer: **(5, 5)**

Question 26

197 seen — **M1**

163 degrees cao — **A1**

Answer: **163 degrees**

Question 27

two vertices correct — **M1**

(0, 5), (6, 8), (6, 4) cao — **A1**

Answer: **(0, 5), (6, 8), (6, 4)**

Question 28

227 seen — **M1**

133 degrees cao — **A1**

Answer: **133 degrees**

Question 29

acute cao — **B1**

Answer: **acute**

Question 30

adds the vector — **M1**

(5, 5) cao — **A1**

Answer: **(5, 5)**

Question 31

acute cao — **B1**

Answer: **acute**

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