8.2 Geometry: Properties of Shapes and Angles: 1-hour Pack

NCETM National Curriculum (2014) Mathematics - KS2 Geometry: Properties of Shapes · Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A circle has a diameter of 18 cm. Work out the radius of the circle.

(2)

---

2 How many lines of symmetry does a equilateral triangle have?

Answer: ___

(1)

---

3 The minute hand of a clock turns clockwise from 12 to the number 1.

Through how many degrees has it turned?

Answer: ___ degrees

(2)

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4 Four angles meet at a point and add up to 360 degrees. Three of the angles are 80, 90 and 82 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

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5 Point B is at (-4, 4). It is reflected in the y-axis.

What are the coordinates of the image of B?

Answer: (___, ___)

(2)

---

6 How many sides does a quadrilateral have?

Answer: ___

(1)

---

7 An angle measures 127 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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8 A shape has vertices A(2, 0), B(6, 6), C(0, 1), D(3, 2). It is translated 2 units right and 2 units up.

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

Answer: ___

(2)

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9 A circle has a radius of 6.5 cm. Work out the diameter of the circle.

(2)

---

10 4 identical circles are drawn in a straight row, touching each other. Each circle has a radius of 5 cm.

How long is the whole row?

Answer: ___ cm

(2)

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11 Three corners of a rectangle are (7, 5), (9, 5) and (9, 9). The sides are parallel to the axes.

What are the coordinates of the fourth corner?

Answer: (___, ___)

(2)

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

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

Answer: ___

(2)

---

13 A circle has a diameter of 6 cm. What is its radius?

Answer: ___ cm

(1)

---

14 A circle has a radius of 17 cm. What is its diameter?

Answer: ___ cm

(1)

---

15 The minute hand of a clock turns clockwise from 12 to the number 9.

Through how many degrees has it turned?

Answer: ___ degrees

(2)

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16 Two straight lines cross at a point, making four angles. One of the angles is 73 degrees.

(a) Write down the size of the angle vertically opposite the 73 degree angle. **(1)**

.....

(b) Work out the size of one of the angles next to the 73 degree angle, on the same straight line. **(2)**

.....

17 A robot turns 7 quarter turns clockwise. Through how many degrees has it turned altogether?

Answer: ___ degrees

(1)

18 A regular hexagon has an interior angle of 120 degrees. Work out the sum of all six interior angles of the hexagon.

(2)

19 A regular pentagon is drawn.

(a) Write down the number of lines of symmetry a regular pentagon has. **(1)**

.....

(b) Write down the order of rotational symmetry of a regular pentagon. **(1)**

.....

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20 A circle has a diameter of 62 cm. What is its radius?

Answer: ___ cm

(1)

---

21 An angle measures 153 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

---

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

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

Answer: ___

(2)

---

23 An isosceles triangle has an angle of 80 degrees between its two equal sides.

What size is each of the other two angles?

Answer: ___ degrees

(2)

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24 A robot turns 3 quarter turns clockwise. Through how many degrees has it turned altogether?

Answer: ___ degrees

(1)

---

25 An angle measures 81 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

---

26 How many vertices does a triangular-based pyramid have?

Answer: ___

(2)

---

27 A shape has vertices A(5, 5), B(1, 3), C(1, 6), D(2, 6). It is translated 3 units right and 1 unit down.

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

Answer: ___

(2)

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28 What is the name of a polygon with 7 sides?

Answer: ___

(1)

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29 I am a quadrilateral. I have 1 pair of parallel sides and 0 lines of symmetry.

What shape am I?

Answer: ___

(1)

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Mark scheme · 8.2 Geometry: Properties of Shapes and Angles: 1-hour Pack

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

Question 1

18 / 2 seen or implied — M1
9 cm cao — A1
Answer: **9 cm**

Question 2

3 cao — B1
Answer: **3**

Question 3

30 degrees for each number — M1
30 degrees cao — A1
Answer: **30 degrees**

Question 4

252 seen — M1
108 degrees cao — A1
Answer: **108 degrees**

Question 5

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

Question 6

4 cao — B1
Answer: **4**

Question 7

obtuse cao — B1
Answer: **obtuse**

Question 8

two vertices correct — M1
(4, 2), (8, 8), (2, 3), (5, 4) cao — A1
Answer: **(4, 2), (8, 8), (2, 3), (5, 4)**

Question 9

6.5 x 2 seen or implied — M1
13 cm cao — A1
Answer: **13 cm**

Question 10

diameter 10 seen — M1
40 cm cao — A1
Answer: **40 cm**

Question 11

one coordinate correct — M1
(7, 9) cao — A1
Answer: **(7, 9)**

Question 12

two vertices correct — M1
(7, 9), (6, 6), (2, 7), (5, 8) cao — A1
Answer: **(7, 9), (6, 6), (2, 7), (5, 8)**

Question 13

3 cm cao — B1
Answer: **3 cm**

Question 14

34 cm cao — B1
Answer: **34 cm**

Question 15

30 degrees for each number — M1
270 degrees cao — A1
Answer: **270 degrees**

Question 16

(a) 73 degrees cao — B1
(a) Answer: **73 degrees**
(b) 180 - 73 seen or implied — M1
(b) 107 degrees cao — A1
(b) Answer: **107 degrees**

Question 17

630 degrees cao — B1
Answer: **630 degrees**

Question 18

120 x 6 seen or implied — M1
720 degrees cao — A1
Answer: **720 degrees**

Question 19

(a) 5 cao — B1
(a) Answer: **5**
(b) 5 cao — B1
(b) Answer: **5**

Question 20

31 cm cao — B1
Answer: **31 cm**

Question 21

obtuse cao — B1
Answer: **obtuse**

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Question 22

two vertices correct	M1
(4, 6), (5, 7), (3, 4) cao	A1

Answer: **(4, 6), (5, 7), (3, 4)**

Question 23

100 seen	M1
50 degrees cao	A1

Answer: **50 degrees**

Question 24

270 degrees cao	B1

Answer: **270 degrees**

Question 25

acute cao	B1

Answer: **acute**

Question 26

uses a rule or counts carefully	M1
4 cao	A1

Answer: **4**

Question 27

two vertices correct	M1
(8, 4), (4, 2), (4, 5), (5, 5) cao	A1

Answer: **(8, 4), (4, 2), (4, 5), (5, 5)**

Question 28

heptagon cao	B1

Answer: **heptagon**

Question 29

trapezium cao	B1

Answer: **trapezium**

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