8.2 Geometry: Properties of Shapes and Angles: Test 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 Write down the name of a 2D shape that has exactly 3 straight sides.

(1)

---

2 For each angle below, write down whether it is acute, right angle, obtuse or reflex.

(a) 35 degrees **(1)**

(b) 90 degrees **(1)**

(c) 152 degrees **(1)**

(d) 278 degrees **(1)**

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3 An isosceles triangle has one angle of 40 degrees, which is the angle between the two equal sides. Work out the size of each of the other two angles.

(3)

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4 A cuboid is a 3D shape.

(a) Write down the number of flat faces a cuboid has. **(1)**

.....

(b) Write down the number of edges a cuboid has. **(1)**

.....

(c) Write down the number of vertices a cuboid has. **(1)**

.....

---

5 How many lines of symmetry does a regular hexagon have?

Answer: ___

(1)

---

6 A circle has a diameter of 68 cm. What is its radius?

Answer: ___ cm

(1)

---

7 A circle has a radius of 7 cm. What is its diameter?

Answer: ___ cm

(1)

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8 Point A is at (2, 1). It is translated by the vector (2, -1), 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)

---

9 Four angles meet at a point and add up to 360 degrees. Three of the angles are 74, 110 and 48 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

---

10 A right angle is split into two angles. One of them is 53 degrees.

What is the other?

Answer: ___ degrees

(1)

---

11 Tick the shape that has two pairs of parallel sides and no right angles.

- ☐ A) Square
- ☐ B) Parallelogram
- ☐ C) Kite
- ☐ D) Right-angled triangle

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12 An isosceles triangle has two equal angles of 50 degrees each.

What is the third angle?

Answer: ___ degrees

(2)

---

13 How many lines of symmetry does a isosceles triangle have?

Answer: ___

(1)

---

14 I am a quadrilateral. I have 2 lines of symmetry and 4 right angles.

What shape am I?

Answer: ___

(2)

---

15 What is the name of a polygon with 5 sides?

Answer: ___

(1)

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16 Through how many degrees is a turn of 1/4 of a full turn?

Answer: ___ degrees

(2)

---

17 Four angles meet at a point and add up to 360 degrees. Three of the angles are 118, 93 and 49 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

---

18 How many faces does a prism with a pentagonal cross-section (5 sides) have?

Answer: ___

(2)

---

19 3 identical circles are drawn in a straight row, touching each other. Each circle has a radius of 12 cm.

How long is the whole row?

Answer: ___ cm

(2)

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20 Point B is at (7, 5). It is reflected in the mirror line x = 4.

What are the coordinates of the image of B?

Answer: (___, ___)

(2)

---

21 How many edges does a prism with a hexagonal cross-section (6 sides) have?

Answer: ___

(2)

---

22 Three angles in a quadrilateral are 76, 57 and 73 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

---

23 I am a quadrilateral. I have 4 right angles and 4 lines of symmetry.

What shape am I?

Answer: ___

(2)

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24 How many vertices does a pentagonal-based pyramid have?

Answer: ___

(2)

---

25 Classify each triangle using its properties.

(a) A triangle has sides of length 6 cm, 6 cm and 6 cm. Write down the name of this type of triangle. **(1)**

.....

(b) A triangle has angles of 90 degrees, 45 degrees and 45 degrees. Write down the name of this type of triangle, giving both of its properties. **(1)**

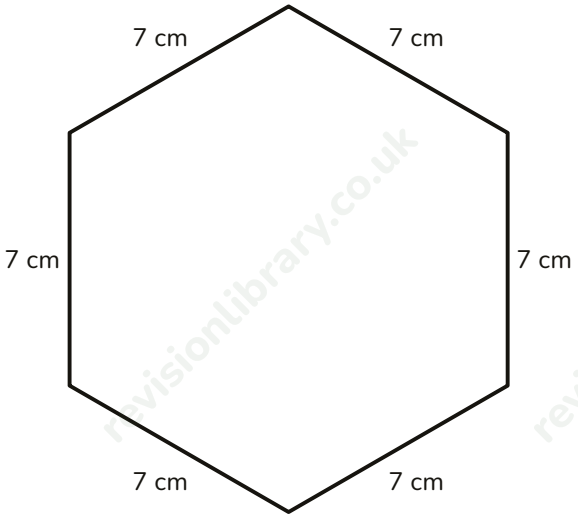
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26 A regular hexagon has all sides equal. Each side is 7 cm.

What is its perimeter?

Answer: ___ cm



(1)

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Mark scheme · 8.2 Geometry: Properties of Shapes and Angles: Test Pack

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

Question 1

triangle oe (any named type, e.g. equilateral, isosceles, scalene or right-angled triangle) **B1**

Answer: **Triangle**

Question 2

(a) acute cao **B1**

(a) Answer: **Acute**

(b) right angle cao **B1**

(b) Answer: **Right angle**

(c) obtuse cao **B1**

(c) Answer: **Obtuse**

(d) reflex cao **B1**

(d) Answer: **Reflex**

Question 3

180 - 40 (= 140) seen or implied **M1**

140 / 2, dependent on the previous method mark **dM1**

70 degrees each cao **A1**

Answer: **70 degrees each**

Question 4

(a) 6 cao **B1**

(a) Answer: **6**

(b) 12 cao **B1**

(b) Answer: **12**

(c) 8 cao **B1**

(c) Answer: **8**

Question 5

6 cao **B1**

Answer: **6**

Question 6

34 cm cao **B1**

Answer: **34 cm**

Question 7

14 cm cao **B1**

Answer: **14 cm**

Question 8

(4, 0) cao **B1**

Answer: **(4, 0)**

Question 9

232 seen **M1**

128 degrees cao **A1**

Answer: **128 degrees**

Question 10

37 degrees cao **B1**

Answer: **37 degrees**

Question 11

B (parallelogram) cao **B1**

Answer: **B) Parallelogram**

Question 12

100 seen **M1**

80 degrees cao **A1**

Answer: **80 degrees**

Question 13

1 cao **B1**

Answer: **1**

Question 14

eliminates at least one shape **M1**

rectangle cao **A1**

Answer: **rectangle**

Question 15

pentagon cao **B1**

Answer: **pentagon**

Question 16

360 divided by the denominator **M1**

90 degrees cao **A1**

Answer: **90 degrees**

Question 17

260 seen **M1**

100 degrees cao **A1**

Answer: **100 degrees**

Question 18

uses a rule or counts carefully **M1**

7 cao **A1**

Answer: **7**

Question 19

diameter 24 seen **M1**

72 cm cao **A1**

Answer: **72 cm**

Question 20

same distance from the mirror line **M1**

(1, 5) cao **A1**

Answer: **(1, 5)**

Question 21

uses a rule or counts carefully **M1**

18 cao **A1**

Answer: **18**

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Question 22

206 seen	M1
154 degrees cao	A1

Answer: **154 degrees**

Question 23

eliminates at least one shape	M1
square cao	A1

Answer: **square**

Question 24

uses a rule or counts carefully	M1
6 cao	A1

Answer: **6**

Question 25

(a) equilateral triangle cao	B1

(a) Answer: **Equilateral triangle**

(b) right-angled isosceles triangle oe (both properties required)	B1

(b) Answer: **Right-angled isosceles triangle**

Question 26

42 cm cao	B1

Answer: **42 cm**

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