8.8 Geometry: Properties of Shapes and Angles (Year 6): Test Pack

Calculators not allowed · about 35 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Name the shape that has exactly four equal sides and four right angles.

(1)

2 A student draws a quadrilateral with three right angles. Explain whether the fourth angle must be a right angle. Give a short reason.

(2)

3 Triangle ABC is isosceles with AB = AC. The angle at A is 40 degrees. Find the size of each base angle at B and C.

(2)

4 A student says that a regular polygon with each interior angle 150 degrees must be a regular dodecagon. Is the student correct? Explain your answer and show how you decide which regular polygon it is.

(2)

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5 An angle on a diagram is 298 degrees. What is the size of the angle needed to complete a full turn?

Answer: ___ degrees

(1)

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6 A circle has a radius of 5 cm. What is its diameter?

Answer: ___ cm

(1)

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7 An isosceles triangle has an angle of 134 degrees between its two equal sides.

What size is each of the other two angles?

Answer: ___ degrees

(2)

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8 Two angles in a triangle are 46 degrees and 31 degrees.

What is the third angle?

Answer: ___ degrees

(2)

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9 Angles on a straight line add up to 180 degrees. One angle is 51 degrees.

What is the other angle?

Answer: ___ degrees

(1)

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10 A circle is split into three parts. Two central angles are 110 degrees and 85 degrees. What is the size of the third central angle?

(2)

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11 How many faces does a triangular-based pyramid have?

Answer: ___

(2)

---

12 An angle measures 344 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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13 Two angles in a triangle are 83 degrees and 62 degrees.

What is the third angle?

Answer: ___ degrees

(2)

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14 Draw a shape with exactly one pair of parallel sides and no right angles. Give the name of the shape.

(2)

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15 An isosceles triangle has two equal angles of 80 degrees each.

What is the third angle?

Answer: ___ degrees

(2)

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16 5 identical circles are drawn in a straight row, touching each other. Each circle has a radius of 19 cm.

How long is the whole row?

Answer: ___ cm

(2)

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17 A circle has a diameter of 70 cm. What is its radius?

Answer: ___ cm

(1)

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Mark scheme · 8.8 Geometry: Properties of Shapes and Angles (Year 6): Test Pack

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

Question 1

square cao — **B1**

Answer: **square**

Question 2

State that angles in quadrilateral sum to 360 degrees or show 90+90+90 = 270 — **M1**

Fourth angle = 360 - 270 = 90 degrees, so it must be a right angle cao — **B1**

Answer: **Yes. The angles sum to 360 so fourth angle = 360 - 270 = 90 degrees**

Question 3

Use sum of angles in triangle: 180 - 40 = 140 seen — **M1**

Base angles each 70 degrees cao — **B1**

Answer: **70 degrees**

Question 4

Show relationship interior angle = 180 - (360/n) or compute exterior angle 30 degrees — **M1**

n = 360/30 = 12; student is correct that it is a dodecagon cao — **B1**

Answer: **Yes. Exterior angle = 180 - 150 = 30, so n = 360/30 = 12**

Question 5

62 degrees cao — **B1**

Answer: **62 degrees**

Question 6

10 cm cao — **B1**

Answer: **10 cm**

Question 7

46 seen — **M1**

23 degrees cao — **A1**

Answer: **23 degrees**

Question 8

77 seen — **M1**

103 degrees cao — **A1**

Answer: **103 degrees**

Question 9

129 degrees cao — **B1**

Answer: **129 degrees**

Question 10

Add 110 and 85 to get 195 or equivalent — **M1**

360 - 195 = 165 degrees cao — **B1**

Answer: **165 degrees**

Question 11

uses a rule or counts carefully — **M1**

4 cao — **A1**

Answer: **4**

Question 12

reflex cao — **B1**

Answer: **reflex**

Question 13

145 seen — **M1**

35 degrees cao — **A1**

Answer: **35 degrees**

Question 14

A correct trapezium drawn (one pair of parallel sides, no right angles) or equivalent — **M1**

Name given as trapezium cao — **B1**

Answer: **trapezium**

Question 15

160 seen — **M1**

20 degrees cao — **A1**

Answer: **20 degrees**

Question 16

diameter 38 seen — **M1**

190 cm cao — **A1**

Answer: **190 cm**

Question 17

35 cm cao — **B1**

Answer: **35 cm**

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