8.8 Geometry: Properties of Shapes and Angles (Year 6): 30-minute Pack

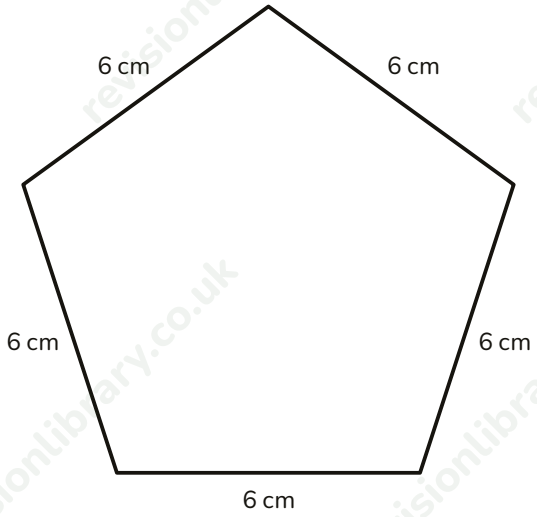
Calculators not allowed · about 30 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A regular pentagon has side length 6 cm. Calculate the sum of its interior angles, then give the size of one interior angle.



(2)

2 In a circle, an arc has a central angle of 140 degrees. What is the size of the reflex angle outside that arc (the larger angle around the circle)?

(2)

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3 A quadrilateral has sides of equal length and opposite angles equal. Is this enough to say it is a parallelogram, a rhombus, or both? Give the correct name and a short explanation.

(3)

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4 One angle in a triangle is 90 degrees and the other two angles are equal. Work out the size of each of the equal angles.

(2)

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5 Four angles meet at a point and add up to 360 degrees. Three of the angles are 64, 41 and 82 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

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6 Four angles meet at a point and add up to 360 degrees. Three of the angles are 102, 71 and 48 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

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7 An isosceles triangle has an angle of 40 degrees between its two equal sides.

What size is each of the other two angles?

Answer: ___ degrees

(2)

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8 A circle has a diameter of 36 cm. What is its radius?

Answer: ___ cm

(1)

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9 An isosceles triangle has two equal angles of 52 degrees each.

What is the third angle?

Answer: ___ degrees

(2)

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10 An angle measures 2 degrees. Is it acute, obtuse or reflex?

Answer: ___

(1)

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11 4 identical circles are drawn in a straight row, touching each other. Each circle has a radius of 38 cm.

How long is the whole row?

Answer: ___ cm

(2)

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12 2 identical circles are drawn in a straight row, touching each other. Each circle has a radius of 17 cm.

How long is the whole row?

Answer: ___ cm

(2)

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13 A circle has a radius of 24 cm. What is its diameter?

Answer: ___ cm

(1)

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Mark scheme · 8.8 Geometry: Properties of Shapes and Angles (Year 6): 30-minute Pack

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

Question 1

Use (n-2)x180 = 3x180 = 540 or show sum of interior angles	M1
One interior angle = 540/5 = 108 degrees cao	B1

Answer: **Sum: 540 degrees; each interior angle: 108 degrees.**

Question 2

Recognise reflex angle = 360 - central angle or show 360 - 140	M1
Reflex angle = 220 degrees cao	B1

Answer: **220 degrees**

Question 3

State that equal side lengths and opposite equal angles imply opposite sides are parallel or argue properties	M1
Name given as rhombus cao	B1
Brief reason: all sides equal and opposite angles equal meet rhombus properties (also is a parallelogram) cao	B1

Answer: **A rhombus. Four equal sides and opposite equal angles fit a rhombus; it is also a parallelogram.**

Question 4

Subtract 90 from 180 to get 90 or equivalent working	M1
Each equal angle 45 degrees cao	B1

Answer: **45 degrees**

Question 5

187 seen	M1
173 degrees cao	A1

Answer: **173 degrees**

Question 6

221 seen	M1
139 degrees cao	A1

Answer: **139 degrees**

Question 7

140 seen	M1
70 degrees cao	A1

Answer: **70 degrees**

Question 8

18 cm cao	B1

Answer: **18 cm**

Question 9

104 seen	M1
76 degrees cao	A1

Answer: **76 degrees**

Question 10

acute cao	B1

Answer: **acute**

Question 11

diameter 76 seen	M1
304 cm cao	A1

Answer: **304 cm**

Question 12

diameter 34 seen	M1
68 cm cao	A1

Answer: **68 cm**

Question 13

48 cm cao	B1

Answer: **48 cm**

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