8.6 Geometry: Angles, Shapes and Reflection: Test Pack

Calculators not allowed · about 40 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 The corner of a square is a right angle. What is the size of a right angle in degrees?

(1)

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2 Here is a kite. Two opposite angles of a kite are equal. If one angle is 72 degrees and an angle next to it is 108 degrees, explain why the angle opposite the 72 degree angle is also 72 degrees, and then work out the size of the fourth angle.

(3)

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3 An angle on a diagram is 176 degrees. What is the size of the angle needed to complete a full turn?

Answer: ___ degrees

(1)

---

4 How many edges does a pentagonal-based pyramid have?

Answer: ___

(1)

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5 Three corners of a rectangle are (7, 3), (9, 3) and (9, 9). The sides are parallel to the axes.

What are the coordinates of the fourth corner?

Answer: (___, ___)

(1)

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6 Three angles in a quadrilateral are 114, 120 and 90 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

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7 An isosceles triangle has two equal angles of 47 degrees each.

What is the third angle?

Answer: ___ degrees

(2)

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8 A shape has vertices A(1, 3), B(0, 3), C(2, 4). It is translated 2 units down.

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

Answer: ___

(2)

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9 A right angle is split into two angles. One of them is 48 degrees.

What is the other?

Answer: ___ degrees

(1)

---

10 A shape has vertices A(0, 3), B(1, 6), C(5, 4). It is translated 4 units right and 1 unit down.

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

Answer: ___

(2)

---

11 An isosceles triangle has an angle of 136 degrees between its two equal sides.

What size is each of the other two angles?

Answer: ___ degrees

(2)

---

12 An isosceles triangle has two equal angles of 32 degrees each.

What is the third angle?

Answer: ___ degrees

(2)

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13 Two angles in a triangle are 57 degrees and 54 degrees.

What is the third angle?

Answer: ___ degrees

(2)

---

14 How many faces does a prism with a rectangular cross-section (4 sides) have?

Answer: ___

(1)

---

15 An angle on a diagram is 251 degrees. What is the size of the angle needed to complete a full turn?

Answer: ___ degrees

(1)

---

16 Use a protractor to draw an angle of 135 degrees. You do not need to show ruler or protractor marks, but show the angle clearly.

(2)

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17 Three angles in a quadrilateral are 96, 86 and 128 degrees.

What is the fourth angle?

Answer: ___ degrees

(2)

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18 Point B is at (8, 5). It is reflected in the mirror line x = 4.

What are the coordinates of the image of B?

Answer: (___, ___)

(2)

---

19 A line segment AB has A at (2, 3) and B at (5, 3). The segment is reflected across the vertical mirror line x = 6 to make A'B'. Calculate the coordinates of A' and B' after the reflection.

(2)

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20 A right angle is split into two angles. One of them is 64 degrees.

What is the other?

Answer: ___ degrees

(1)

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Mark scheme · 8.6 Geometry: Angles, Shapes and Reflection: Test Pack

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

Question 1

90 degrees cao	B1

Answer: **90 degrees**

Question 2

States property: a kite has a pair of opposite equal angles (identifies which angles are equal)	M1
Uses angle sum 72 + 108 + 72 + ? = 360 or equivalent reasoning to find the missing angle	M1
Fourth angle 108 degrees cao	B1

Answer: **108 degrees**

Question 3

184 degrees cao	B1

Answer: **184 degrees**

Question 4

10 cao	B1

Answer: **10**

Question 5

(7, 9) cao	B1

Answer: **(7, 9)**

Question 6

324 seen	M1
36 degrees cao	A1

Answer: **36 degrees**

Question 7

94 seen	M1
86 degrees cao	A1

Answer: **86 degrees**

Question 8

two vertices correct	M1
(1, 1), (0, 1), (2, 2) cao	A1

Answer: **(1, 1), (0, 1), (2, 2)**

Question 9

42 degrees cao	B1

Answer: **42 degrees**

Question 10

two vertices correct	M1
(4, 2), (5, 5), (9, 3) cao	A1

Answer: **(4, 2), (5, 5), (9, 3)**

Question 11

44 seen	M1
22 degrees cao	A1

Answer: **22 degrees**

Question 12

64 seen	M1
116 degrees cao	A1

Answer: **116 degrees**

Question 13

111 seen	M1
69 degrees cao	A1

Answer: **69 degrees**

Question 14

6 cao	B1

Answer: **6**

Question 15

109 degrees cao	B1

Answer: **109 degrees**

Question 16

Arm placement roughly correct showing one arm as reference and the other at appropriate obtuse position	M1
Clear angle close to 135 degrees (within drawing tolerance) oe	B1

Answer: **135 degrees**

Question 17

310 seen	M1
50 degrees cao	A1

Answer: **50 degrees**

Question 18

same distance from the mirror line	M1
(0, 5) cao	A1

Answer: **(0, 5)**

Question 19

Recognises reflection in x = 6 keeps each y-coordinate and reflects each x-coordinate about 6	M1
A' = (10, 3) and B' = (7, 3) cao	B1

Answer: **A' = (10, 3), B' = (7, 3)**

Question 20

26 degrees cao	B1

Answer: **26 degrees**

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