KS2.M-Y5G1 Geometry: Angles, Shapes and Reflection

Total Marks

Calculators not allowed · about 60 minutes

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)

2 A triangle has two angles measuring 50 degrees and 60 degrees. Work out the size of the third angle.

(1)

3 A straight line is split by a point so that one angle on the line is 125 degrees. Write the sum of the two angles that share a straight line and give the size of the other angle.

(1)

4 A reflex angle measures 250 degrees. Calculate the smaller angle made at the same vertex (the reflex complement).

(2)

5 On a straight line, one angle is 35 degrees and the other is x degrees. Work out x.

(2)

6 At a point three angles meet. Two of the angles are 110 degrees and 95 degrees. Calculate the size of the third angle y.

(2)

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7 A regular pentagon has all interior angles equal. Write down the size of one interior angle of a regular pentagon.

(1)

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8 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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9 A line segment AB has A at (2, 3) and B at (5, 3). The segment is reflected across the vertical mirror line x = 0 to make A'B'. Calculate the coordinates of A' and B' after the reflection.

(2)

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10 A shape is reflected across a horizontal mirror line at y = 0. A vertex at (4, -2) moves under the reflection. Give the new coordinates of that vertex.

(2)

11 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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12 A rectangle has one angle marked as 90 degrees and the adjacent angle labelled x. What is the value of x?

(1)

Mark scheme · KS2.M-Y5G1 Geometry: Angles, Shapes and Reflection

Question 1

- **B1** 90 degrees cao
- Answer: **90 degrees**

Question 2

- **B1** 70 degrees cao
- Answer: **70 degrees**

Question 3

- **B1** 180 degrees and 55 degrees cao
- Answer: **180 degrees; other angle 55 degrees**

Question 4

- **M1** Recognises need to subtract from 360 or to find reflex complement, e.g. 360 - 250
- **B1** 110 degrees cao
- Answer: **110 degrees**

Question 5

- **M1** Uses 35 + x = 180 or describes correct equation
- **B1** 145 degrees cao
- Answer: **145 degrees**

Question 6

- **M1** Uses 110 + 95 + y = 360 or equivalent
- **B1** 155 degrees cao
- Answer: **155 degrees**

Question 7

- **B1** 108 degrees cao
- Answer: **108 degrees**

Question 8

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

Question 9

- **M1** Recognises reflection across x = 0 changes sign of x-coordinates
- **B1** A' = (-2, 3) and B' = (-5, 3) cao
- Answer: **A' = (-2, 3), B' = (-5, 3)**

Question 10

- **M1** Understands reflection in y = 0 changes sign of y-coordinate
- **B1** (4, 2) cao
- Answer: **(4, 2)**

Question 11

- **M1** 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
- **B1** Fourth angle 108 degrees cao
- Answer: **108 degrees**

Question 12

- **B1** 90 degrees cao
- Answer: **90 degrees**