

Year 6 Assessment: Properties of Shape

Learning objective: To identify, describe, and classify 2D and 3D shapes, find unknown angles, and solve problems involving coordinates and nets.

Read each question carefully. Show your working out where necessary. You may use a ruler for drawing shapes. Good luck!

Max the monkey is helping Zara the zebra design a new geometric mural for the jungle community centre. They are using various shapes to create patterns, but they need to ensure the measurements are accurate.

Word bank: parallelogram · isosceles · net · vertex · reflex angle · congruent · protractor

1. Max draws a triangle with two sides of equal length and two equal base angles. What is the mathematical name for this type of triangle? (1 mark)

2. Zara has a parallelogram with a base of 8cm and a perpendicular height of 5cm. Calculate the area of this parallelogram. Show your working. (2 marks)

3. A quadrilateral has four right angles and two pairs of parallel sides. Name two possible shapes this could be. (2 marks)

4. On a coordinate grid, a square has vertices at (2, 2), (6, 2), and (6, 6). What are the coordinates of the fourth vertex? (2 marks)

5. Calculate the missing angle in a triangle where one angle is 45° and another is 75° . Explain your method. (3 marks)

6. Describe the properties of a triangular prism. Include information about the number of faces, edges, and vertices. (4 marks)

7. Max and Zara are planning a triangular garden bed. They have a piece of string 12 metres long to create the perimeter. If one side must be 3 metres and another side must be 4 metres, what is the length of the final side? Explain why this shape is possible using your knowledge of triangle properties. (5 marks)

8. Look at a cube. If you were to unfold it to create a 2D net, how many squares would you draw? If each square has a side length of 5cm, what is the total surface area of the cube? (6 marks)

Draw: Using a ruler, draw an accurate net of a cuboid on the back of your paper, ensuring all sides are connected correctly.



Extension challenge: Total: /25