# Test - Angles, circles and 3D shapes

Year: Year 6 · Duration: 40 minutes · /20

| Name: | Date: | **Mark: /20** |
|---|---|---|

| Question | 1 | 2 | 3 | 4 | 5 | Total |
|---|---|---|---|---|---|---|
| marks | 3 | 4 | 4 | 4 | 5 | **20** |
| Mark | | | | | | |

Show your working.

## Question 1 (3 marks)

**Question 1 – Missing angles**

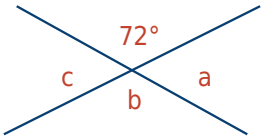
Work out each missing angle. Give a reason for each answer.

a. A triangle has angles of 65° and 48°. Find the third angle.
b. Two angles on a straight line are 112° and $x$. Find $x$.
c. Three angles at a point are 150°, 95° and $y$. Find $y$.

## Question 2 (4 marks)

**Question 2 – Quadrilaterals and crossing lines**

Use the angle facts to answer the questions.




a. Find the angles $a$, $b$ and $c$ in the diagram.
b. Three angles of a quadrilateral are 88°, 102° and 95°. Find the fourth angle.
c. A parallelogram has an angle of 70°. Write down the other three angles.

## Question 3 (4 marks)

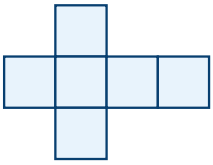
**Question 3 – Circles**

a. A circle has a radius of 8.5 cm. What is its diameter?
b. A circle has a diameter of 13 cm. What is its radius?
c. To draw a circle that is 12 cm wide, what should the compasses be set to?
d. A circular table has a diameter of 1.2 m. A square tablecloth has sides of 1.5 m. Can the table fit on the cloth? Explain.

## Question 4 (4 marks)

### Question 4 – 3D shapes

Look at the net of the cube and answer the questions.



a. How many faces, edges and vertices does a cube have?
b. How many faces and edges does a square-based pyramid have?
c. What shape is the net of a cylinder made from? (Name the shapes.)
d. Use vertices + faces − edges = 2 to find the number of edges of a shape with 6 vertices and 5 faces.

## Question 5 (5 marks)

### Question 5 – The carpenter's problem

A carpenter makes a wooden frame in the shape of an isosceles triangle with a top angle of 40°. A circular window with a diameter of 90 cm is fitted in the frame.

a. Find the size of each base angle of the triangle.
b. What is the radius of the window?
c. The carpenter cuts the window into 6 equal slices from the centre (like a pizza). What is the angle at the centre of each slice?
d. Another triangular frame has angles of $x$, $2x$ and $3x$. Find $x$ and write down all three angles.