

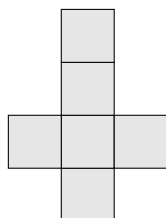
Foundation GCSE: Nets

Name: _____

Class: _____

Instructions: Answer all questions. Questions are ordered from easiest (1) to hardest (10). Working out should be shown where appropriate.

1. The diagram below shows a net consisting of 6 identical squares arranged in a cross shape.



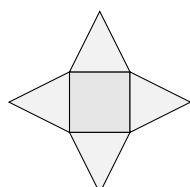
What 3D shape does this net fold to form?

2. The diagram below shows a net consisting of a central rectangle with two attached circles.



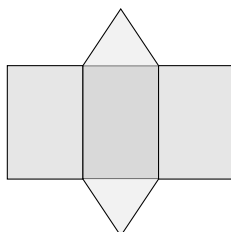
What 3D shape does this net represent?

3. A net consists of a square base and 4 identical isosceles triangles attached to its edges, as represented below.



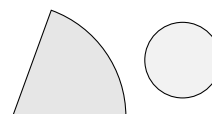
State the total number of vertices on the assembled 3D shape.

4. The diagram below shows the net of a triangular prism, composed of three rectangles and two triangles.



How many edges does this triangular prism have when assembled?

5. A net of a cone is formed from a sector of a circle and a full circle component, as shown below.



What is the geometrical role of the full circle component in the assembled cone?

6. A cube has a total surface area of 96 cm^2 . What is the area of a single square face in its net?
7. A cylinder net has a height of 10 cm and a base radius of 3 cm. What is the exact length of the rectangular portion of the net in terms of π ?
8. A cuboid net has dimensions 2 cm, 3 cm, and 6 cm. Calculate the total surface area of this net.
9. A regular octahedron net consists of a series of connected equilateral triangles. How many triangles make up its net?
10. A square-based pyramid net has a base of side 4 cm and triangular faces with a slant height of 5 cm. Calculate the total surface area of the net.

Answers & Worked Solutions

1. Cube : A cross-shaped arrangement of 6 squares folds into a cube.
2. Cylinder : Two circular bases and one rectangular curved surface form a cylinder.
3. 5 vertices : 4 base corners plus 1 apex vertex.
4. 9 edges : 3 on the top triangle, 3 on the bottom triangle, and 3 connecting vertical edges.
5. Circular base : The full circle forms the flat base of the cone.
6. 16 cm^2 : Area of one face $= 96 \div 6 = 16$.
7. $6\pi \text{ cm}$: The width of the rectangle equals the circumference of the circular base ($2 \times \pi \times 3 = 6\pi$).
8. 72 cm^2 : Faces are $2(2 \times 3) + 2(2 \times 6) + 2(3 \times 6) = 12 + 24 + 36 = 72$.
9. 8 triangles : A regular octahedron is composed of 8 equilateral triangles.
10. 56 cm^2 : Base area $= 4 \times 4 = 16$; four triangles $= 4 \times (\frac{1}{2} \times 4 \times 5) = 40$; Total $= 16 + 40 = 56$.