GCSE Exam Questions

3D Shape Names and Vertices, Edges and Faces | Geometry & Measure

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GCSE Exam Questions: 3D Shape Names and Vertices, Edges and Faces

1) **(a)** A cylinder is joined to a cuboid to make a new 3D shape.

How many faces does the new 3D shape have?

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(1)
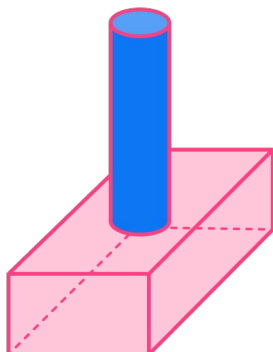
(b) The volume of the cylinder is $\frac{1}{3}$ of the volume of the cuboid.

The cuboid has the following dimensions: $8(H) \times 6(W) \times 3(D)$.

What is the volume of the cylinder?

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(2)

(3 marks)

2) **(a)** A Platonic Solid is a 3D shape which has faces which are regular polygons. The faces are congruent and the same number of faces meet at each vertex.

Which of these solids is a Platonic Solid? Circle your answer.

Sphere   Cuboid

Cube   Square-based pyramid

(1)

(b) Name a Platonic Solid which has all their faces being equilateral triangles?

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(1)

(2 marks)

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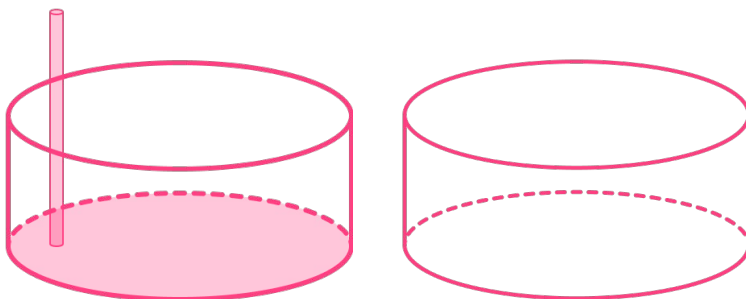## GCSE Exam Questions: 3D Shape Names and Vertices, Edges and Faces

3) **(a)** The cross sectional area of a 3D shape is made up of similar
squares. The 3D shape has 5 vertices. What is the name of
the 3D shape?

_____

(1)

(b) Which two 3D shapes have 3 faces, 2 edges and no vertices?
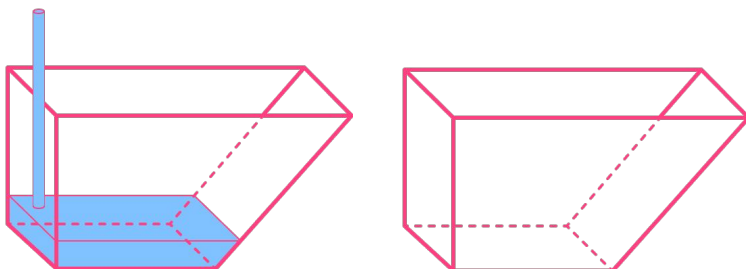
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(2)

(3 marks)

4) **(a)** Tank A is a cylinder. The cross sectional area of the cylinder
is a circle. The tank is starting to fill with water. Sketch a line
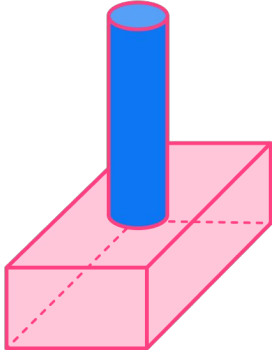marking where the tank would be half full.

(1)

(b) Tank B is a trapezoidal prism. It is filled with water. Sketch
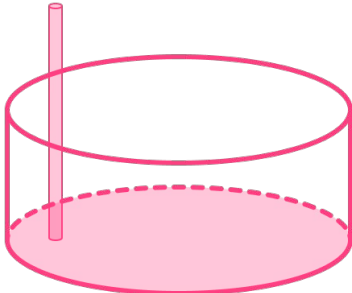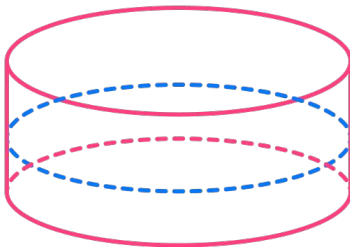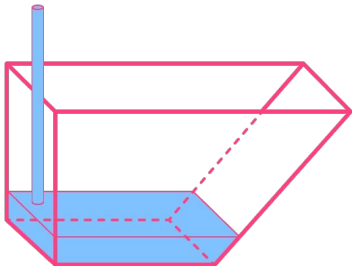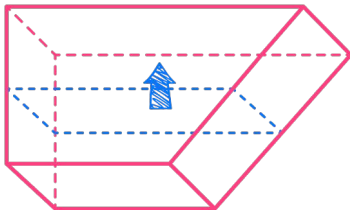a line marking where the tank would be half full.

(1)

(2 marks)

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GCSE Exam Questions: 3D Shape Names and Vertices, Edges and Faces Answers

	Question	Answer	Marks
1) (a)	A cylinder is joined to a cuboid to make a new 3D shape. How many faces does the new 3D shape have?	**(a)** 8 faces	**(1)**
(b)	The volume of the cylinder is $\frac{1}{3}$ of the volume of the cuboid. The cuboid has the following dimensions: 8(*H*) × 6(*W*) × 3(*D*). What is the volume of the cylinder?	**(b)** $8 \times 6 \times 3 = 144$ $144 \div 3 = 48cm^3$	**(1)** **(1)**
2) (a)	A Platonic Solid is a 3D shape which has faces which are regular polygons. The faces are congruent and the same number of faces meet at each vertex. Which of these solids is a Platonic Solid? Circle your answer. Sphere Cuboid Cube Square-based pyramid	**(a)** Cube	**(1)**
(b)	Name a Platonic Solid which has all their faces being equilateral triangles?	**(b)** Tetrahedron **or** Octahedron **or** Icosahedron	**(1)**
3) (a)	The cross sectional area of a 3D shape is made up of similar squares. The 3D shape has 5 vertices. What is the name of the 3D shape?	**(a)** Square based pyramid	**(1)**
(b)	Which two 3D shapes have 3 faces, 2 edges and no vertices?	**(b)** Cylinder Frustum	**(1)** **(1)**

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GCSE Exam Questions: 3D Shape Names and Vertices, Edges and Faces Answers

	Question	Answer	Marks
4) (a)	Tank A is a cylinder. The cross sectional area of the cylinder is a circle. The tank is starting to fill with water. Sketch a line marking where the tank would be half full.	**(a)** Line must be half way up the vertical height of the prism with an attempt at being oval/not a straight line e.g.	**(1)**
(b)	Tank B is a trapezoidal prism. It is filled with water. Sketch a line marking where the tank would be half full.	**(b)** Line must be clearly above half way up the vertical height of the prism e.g.	**(1)**

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