GCSE Maths – Geometry and Measures

Faces, Surfaces, Edges and Vertices

Worksheet

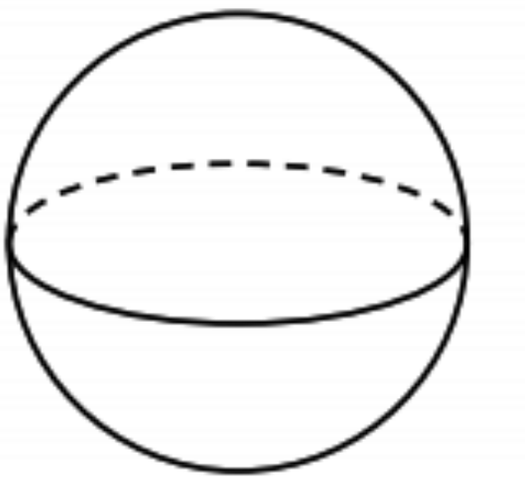
WORKED SOLUTIONS

This worksheet will show you how to work out different types questions relating to properties of shapes. Each section contains a worked example, a question with hints and then questions for you to work through on your own.

Section A

Worked Example

Give the number of faces, edges and vertices of the following shape



Step 1: Write down the meaning of a face, an edge and a vertex of a 3D shape.

Face – a flat or curved surface on a 3D shape.

Edge – the straight or curved lines that connect each of the vertices.

Vertex – a point where two or more edges meet.

Step 2: Look at the shape and work out what it is called. Then count how many faces, edges and vertices it has. Circle any vertices that you can see.

The shape is a sphere which has a single surface.

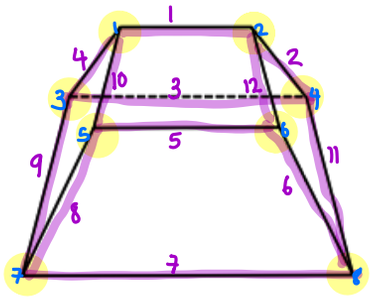
Therefore, it only has 1 face and no edges or vertices.

Step 3: Clearly state your final answer by writing how many faces, vertices and edges the shape has.

*Faces: **1*** *Edges: **0*** *Vertices: **0***

Guided Example

Give the number of faces, edges and vertices of the following shape



Step 1: Write down the meaning of a face, an edge and a vertex of a 3D shape.

Face - a flat / curved surface

Edge - a straight / curved line that connects vertices

Vertex - Where two edges meet

Step 2: Look at the shape and count how many faces, edges and vertices it has. Visualise it as a 3D shape to ensure you have counted every face, edge and vertex. Circle any vertices that you can see and count the lines (edges) that you can see.

This shape is a trapezium based prism.

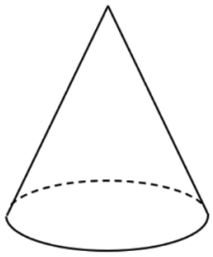
Step 3: Clearly state your final answer by writing how many faces, vertices and edges the 3D shape has.

Faces: 6 *Edges:* 12 *Vertices:* 8

Now it's your turn!
If you get stuck, look back at the worked and guided examples.

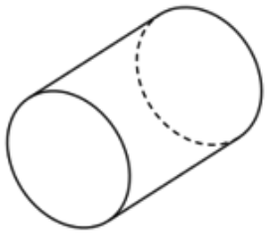
1. State the names of the 3D shapes shown below.

a)



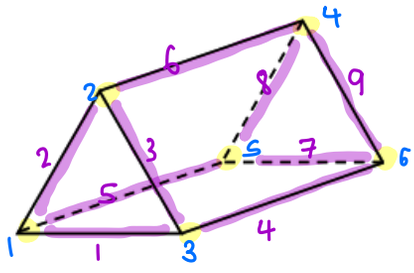
Cone

b)



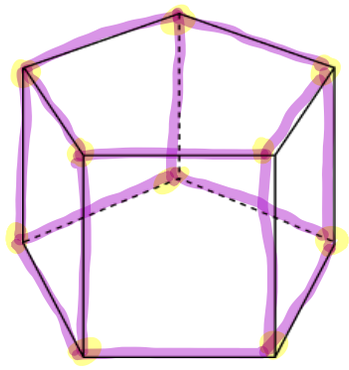
Cylinder

2. Give the number of faces, edges and vertices of the triangular-based prism below.



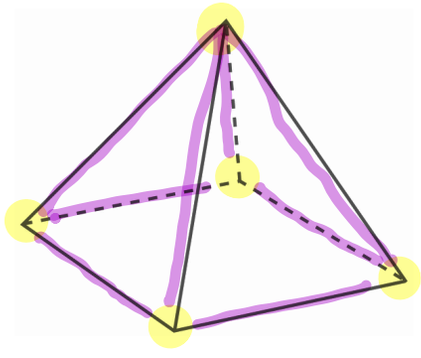
Faces: 5 *Edges:* 9 *Vertices:* 6

3. Give the number of faces, edges and vertices of the 3D shape below.



Faces: 7 *Edges:* 15 *Vertices:* 10

4. Give the number of faces, edges and vertices of the 3D shape below.



Faces: 5 *Edges:* 8 *Vertices:* 5