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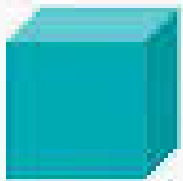
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**SUBJECT:**  
MATHEMATICS

**TOPIC:**  
3-DIMENSIONAL  
SHAPES



## 3-Dimensional Shapes



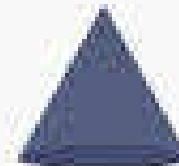
Cube



Rectangular  
Prism



Sphere



Cone



Cylinder

3-DIMENSIONAL SHAPES

**FOLAKE SONEYE**

# LEARNING OBJECTIVES:



Differentiate between 2-Dimensional shapes and 3-Dimensional shapes.

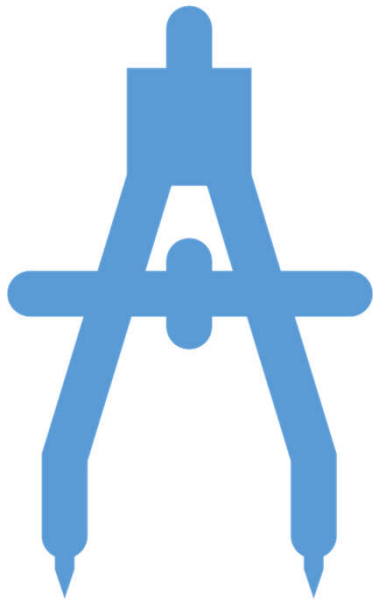


Identify three-dimensional shapes.



Recognize the face (surface), edge and vertices properties of 3-dimensional solid shapes.

# INTRODUCTION



- **Geometry** is one of the practical section of Mathematics which involve various shapes and sizes of different figures and their properties .
- Geometry can be divided into 2:
  1. **Plane shape or 2-dimensional shape** and
  2. **3-dimensional shape.**



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Plane shape or 2-dimensional shape deals with flat shapes like lines, curves or polygon. 2-dimensional shape can only be drawn on paper.

Examples of 2-dimensional shapes are: square, rectangle, circle.

3-dimensional shapes are called solid shapes.

They can be drawn, they can be cut out and they can be hold.

Examples are: cuboid, cube, prism, cylinder.

# 3-DIMENSIONAL SHAPES

- 3-Dimensional shapes are solid shapes that have length, width and height or (depth or thickness).
- Three dimensional shapes have many properties such as faces, edge and vertex.
- **Faces:** these are flat surfaces of the 3-dimensional shapes.
- **Edge:** this is the line segment where two faces meet.
- **Vertex:** this is a point where several edges meet. The plural is vertices.

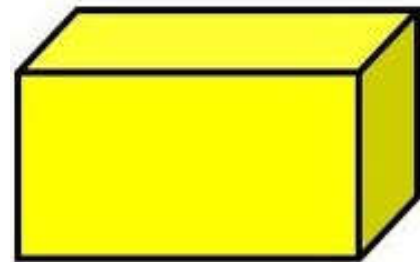
It's a  
cube



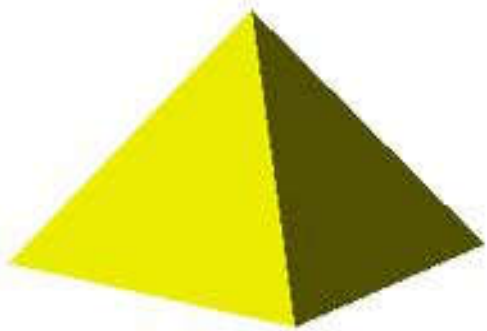
It's a  
cone



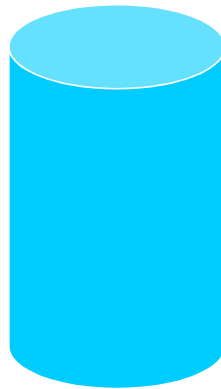
It's a  
cuboid



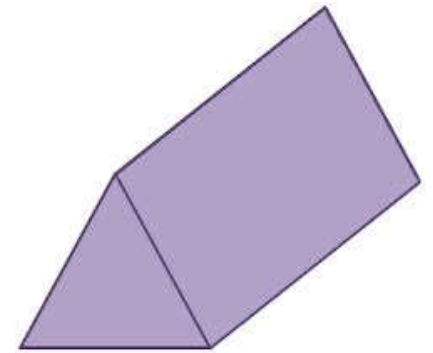
It's a  
pyramid



It's a  
cylinder



It's a  
triangular  
prism








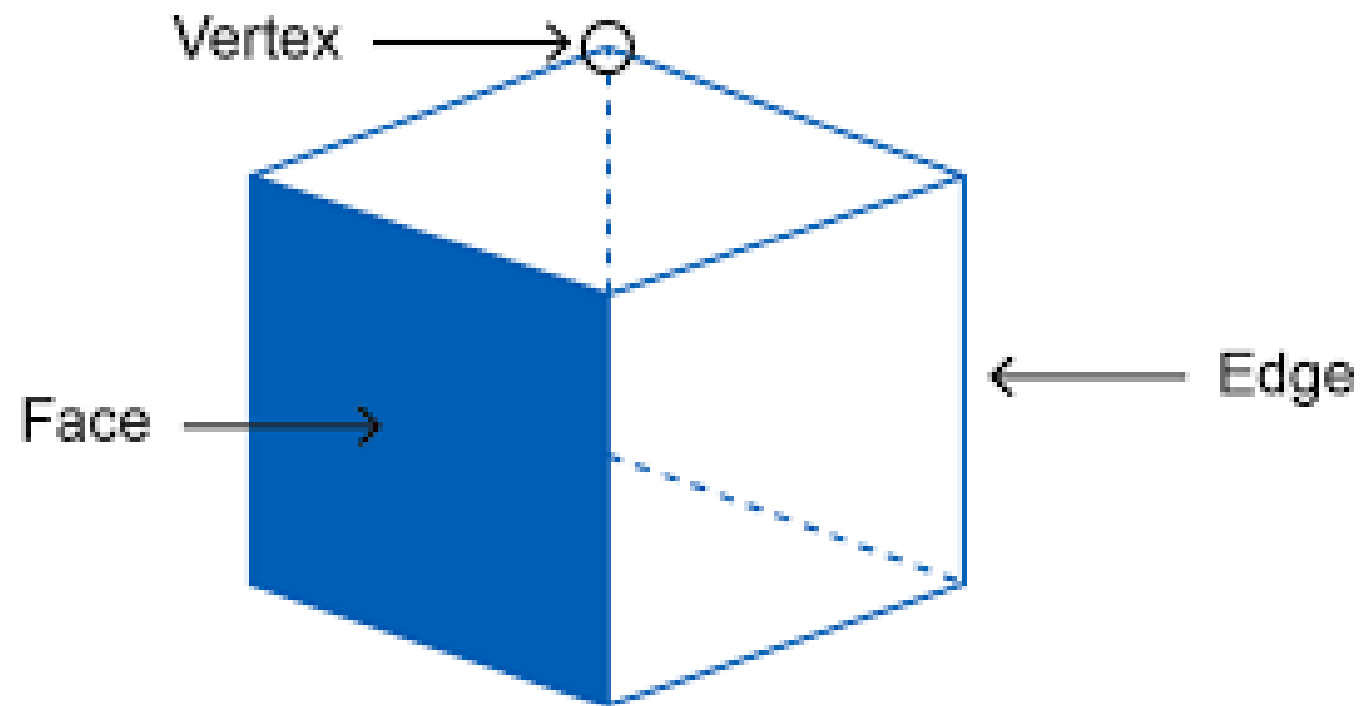
Examples of a cube.



## PROPERTIES OF A CUBE

- A Cube has equal length of edges.
  - It has 12 edges.
  - It has 6 faces or 6 plane square surfaces.
  - It has 8 vertices.
  - Examples of cube are: chocomilo, sugar cube, dice.
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# A CUBE





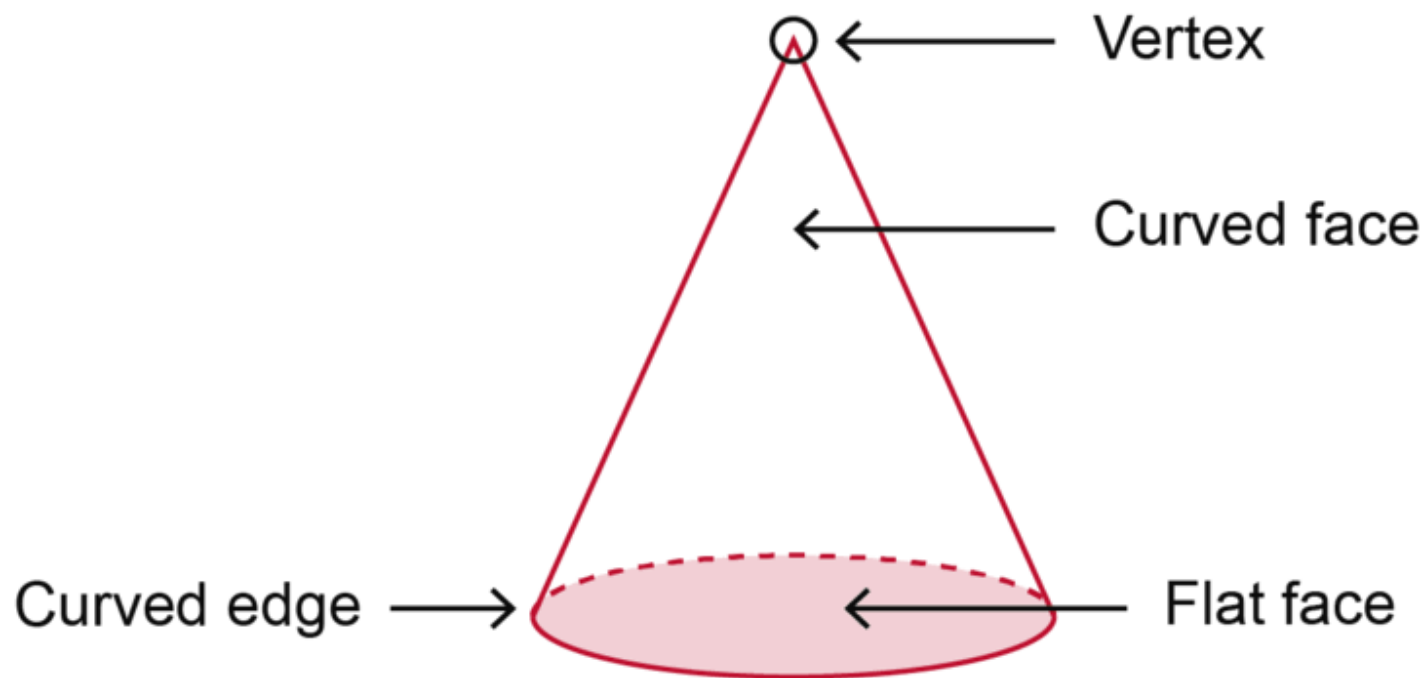
Examples of a cone.

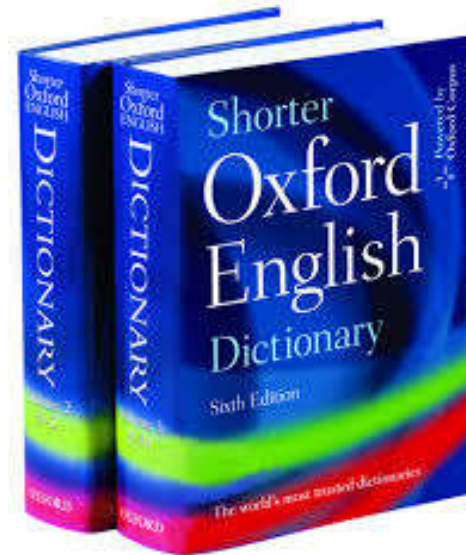
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# PROPERTIES OF A CONE

- A Cone decreases smoothly from the circular flat base to the top point called Apex.
- A cone has 1 vertex.
- It has 1 edge.
- A cone has 2 faces (1 flat face and 1 curved face).
- Examples of a cone are: ice-cream, party hat.

# A CONE





Examples of a cuboid.

# PROPERTIES OF A CUBOID

A Cuboid has 12 edges.

It has 8 vertices.

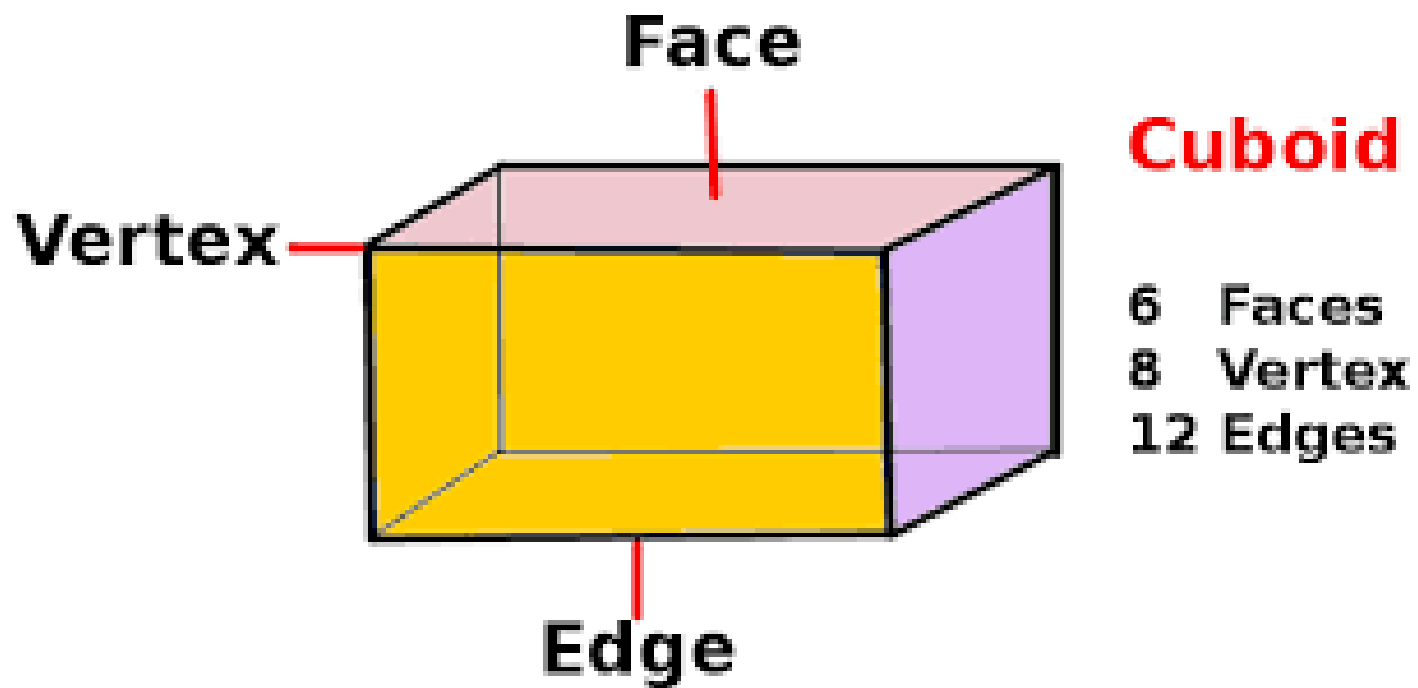
A cuboid has 6 faces.

The length of a cuboid is longer than its width or breadth.

Examples of cuboid are: match box, fridge, dictionary.



# A CUBOID



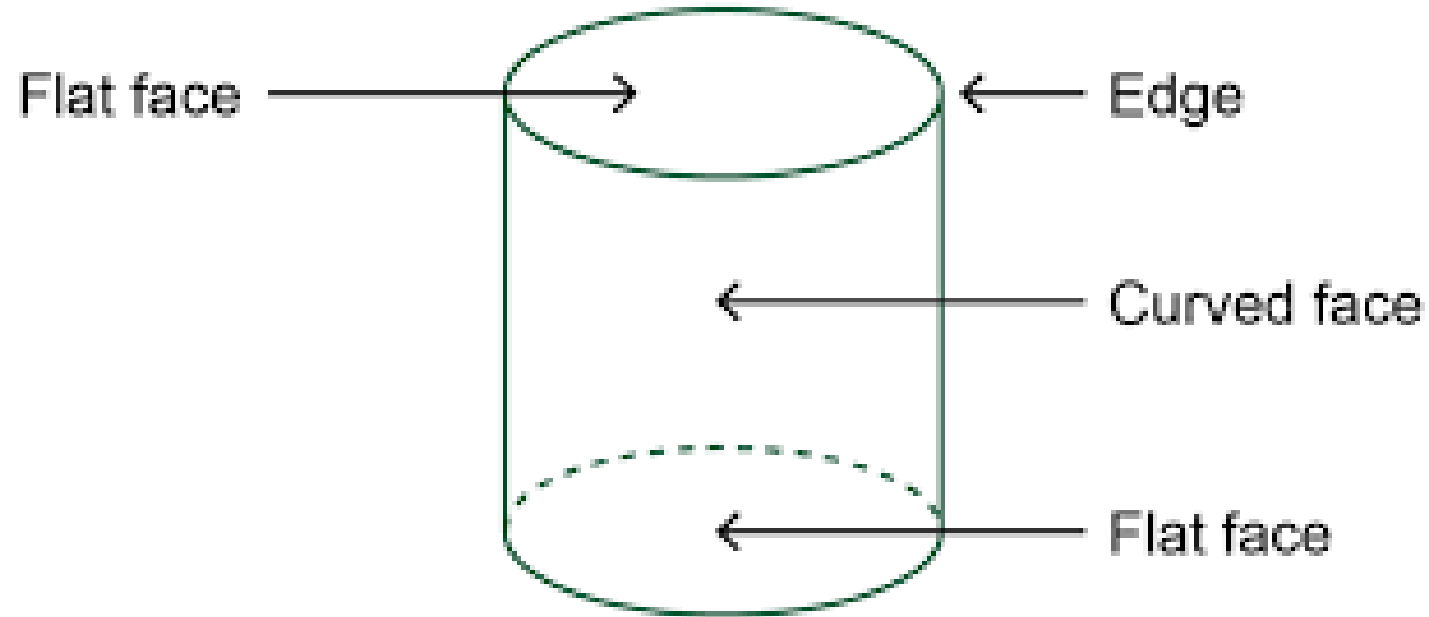


Examples of a cylinder.

## PROPERTIES OF A CYLINDER

- A Cylinder has a circular curved face or surface.
- It has 2 edges.
- It has no vertex.
- It has 2 circular bases.
- A closed cylinder has 3 faces.
- Examples of a cylinder are: milk tin, fizzy drink can.

# A CYLINDER



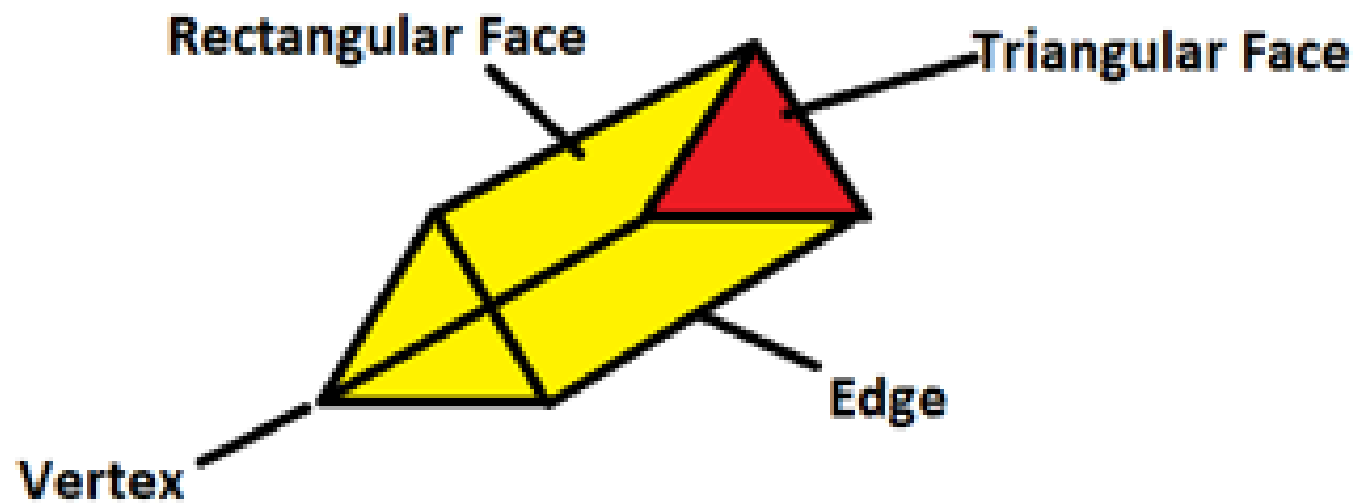


Examples of a prism.

# PROPERTIES OF A PRISM

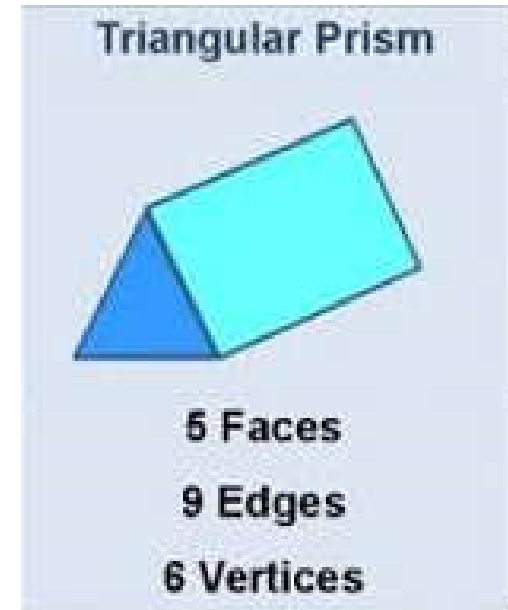
- A prism is a 3-dimensional shape that has identical ends of the same shape.
- It is a solid shape named according to the shape of its base.
- Its edges are parallel to one another.
- A line passing through the centre of each end is called the axis.

# A PRISM



# TRIANGULAR PRISM

- A Triangular prism does not have any curve.
- It has 6 vertices.
- It has 9 edges.
- Triangular prism has 5 faces, 2 triangles and 3 rectangles.
- Example of triangular prism is Toblerone chocolate bar.







Example of a pyramid.

## PROPERTIES OF A PYRAMID

- A pyramid is also named according to the shape of its base.
- The shape of the base may be: triangular, square, quadrilateral or in the shape of any polygon.
- It has sloping sides meeting at a point at the top called **apex**.

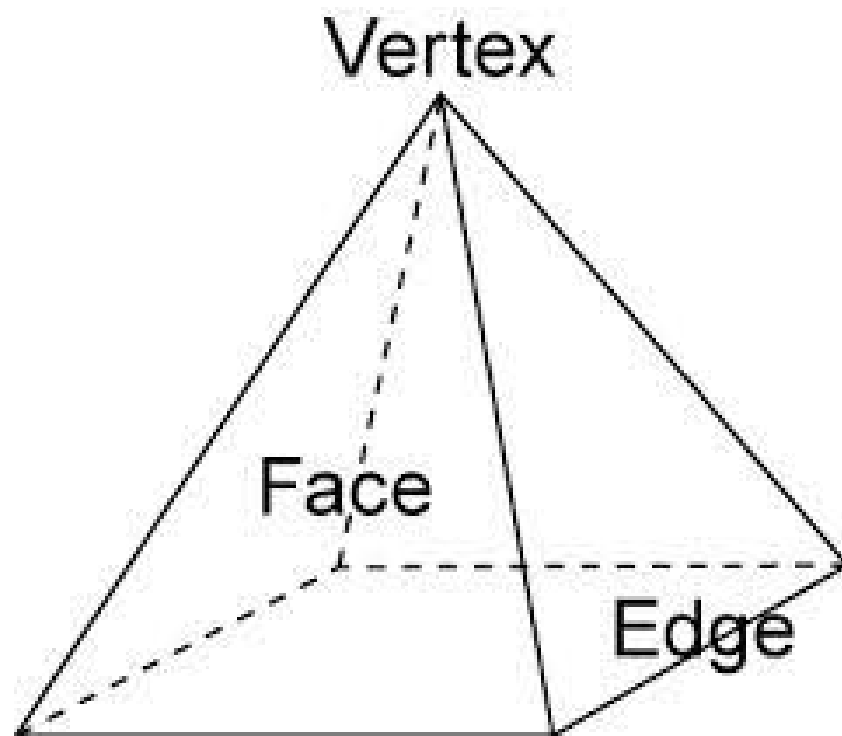
EXAMPLE OF A SQUARE PYRAMID



## SQUARE PYRAMID

- It has a square base.
- It has 4 triangular faces.
- It has 5 vertices.
- It has 8 edges.
- It has 5 faces.
- Example of square pyramid is roof tops.

# SQUARE PYRAMID



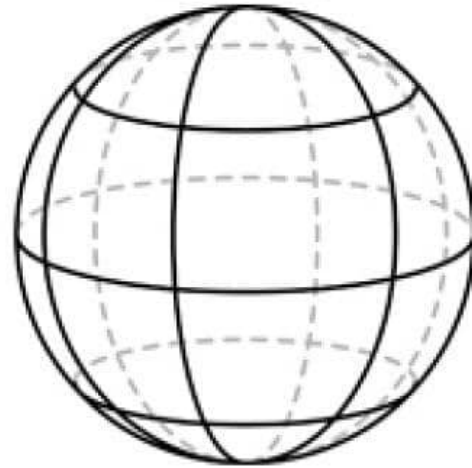


Examples of a sphere.

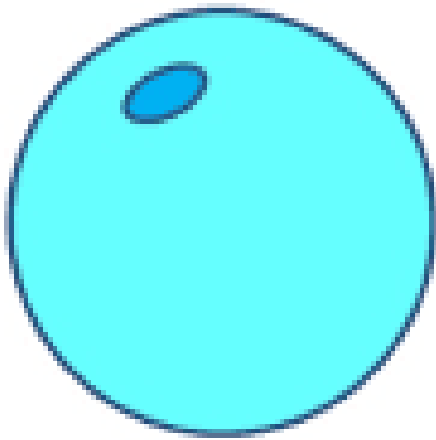
## PROPERTIES OF A SPHERE

- A sphere has 1 curved face.
- It has 1 edge.
- A sphere has no vertices.
- Example of a sphere is ball.

Sphere



# A SPHERE



## SPHERE

Faces – 1

Edges – 1

Vertices – 0

## Properties of 3D shapes

Cone



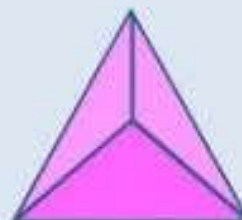
2 Faces  
1 Edge  
1 Vertex

Sphere



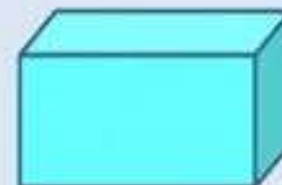
1 Face  
1 Edge  
0 Vertices

Tetrahedron



4 Faces  
6 Edges  
4 Vertices

Cuboid



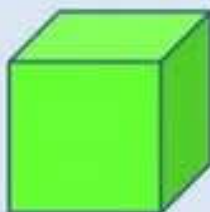
6 Faces  
12 Edges  
8 Vertices

Cylinder



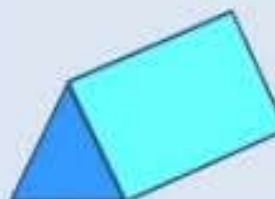
3 Faces  
2 Edges  
0 Vertices

Cube



6 Faces  
12 Edges  
8 Vertices

Triangular Prism



5 Faces  
9 Edges  
6 Vertices

Square-based pyramid

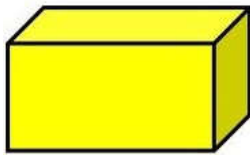


5 Faces  
8 Edges  
5 Vertices



# EVALUATION

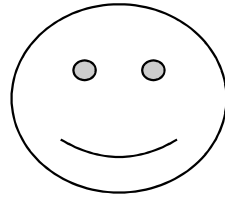
- Define 3- dimensional shapes
- Identify the shape below:



- How many faces does it have?
- How many edges can be found?
- How many vertices does it have?

# ASSIGNMENT

- List any five 3- dimensional shapes.
- Highlight 3 properties of:
  - ✓ A cone
  - ✓ A triangular prism



THANKS FOR LISTENING

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