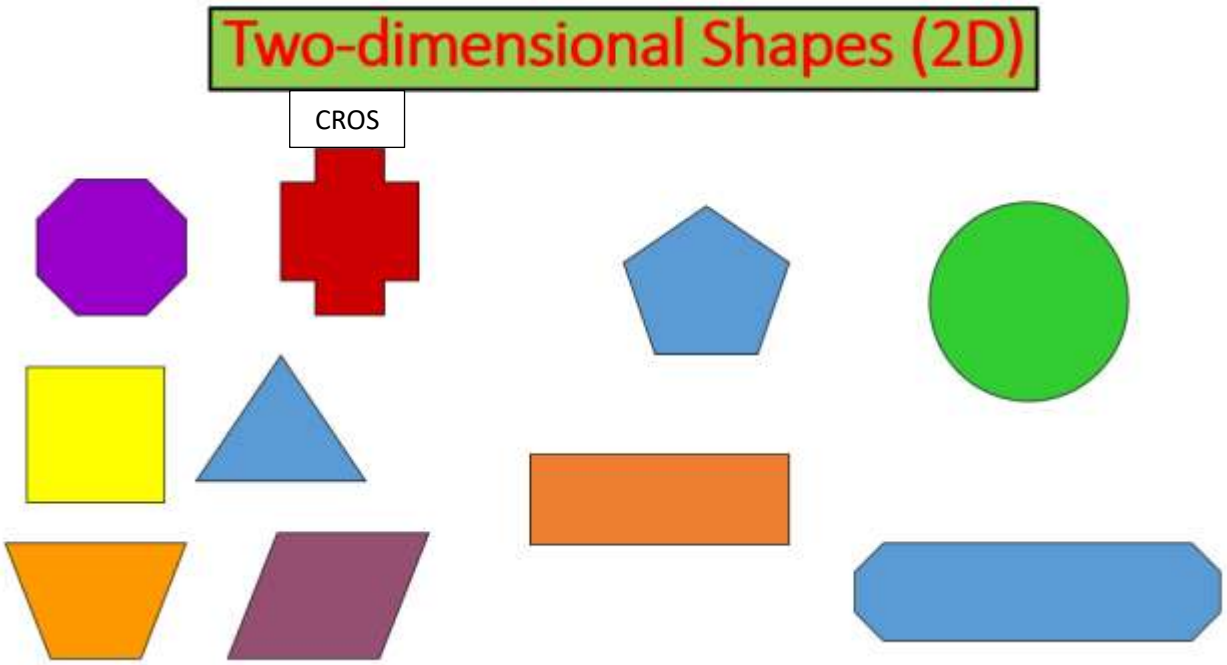
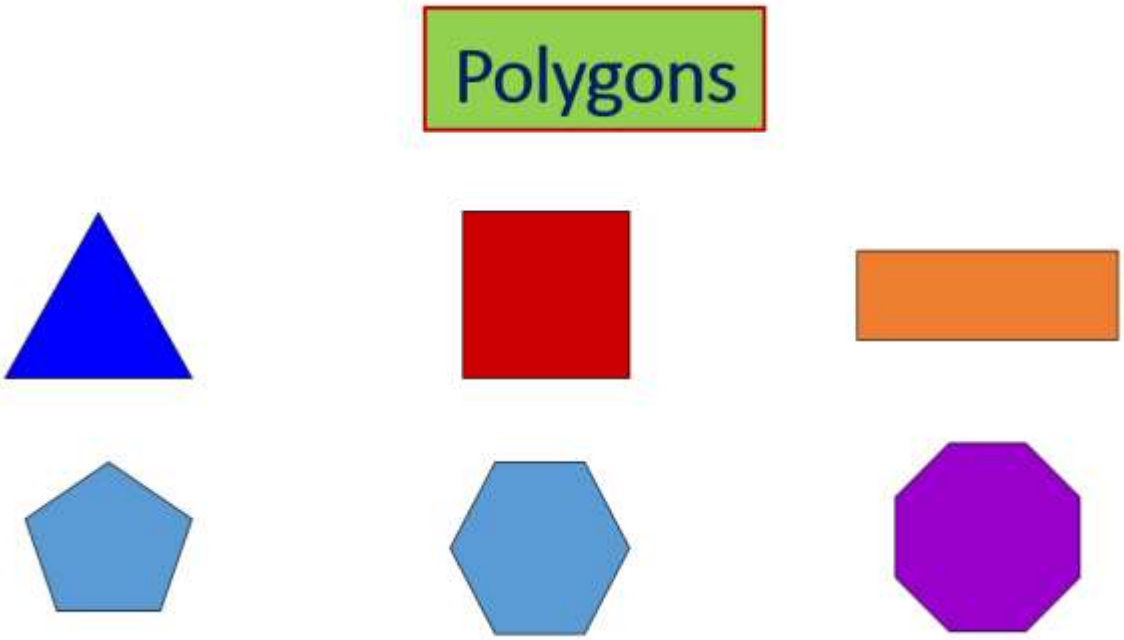
2D AND 3D OBJECTS



POLYGONS ARE 2D STUFF WITH SIDES



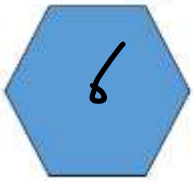
Kite

A two-dimensional shape with two shorter sides of equal length and two longer sides of equal length.

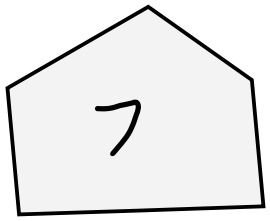
Rhombus

Rectangle

Hexagon

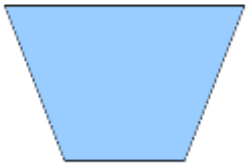


Octagon



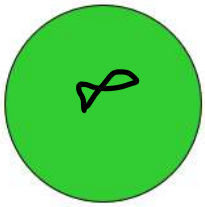
heptagon

Trapezium

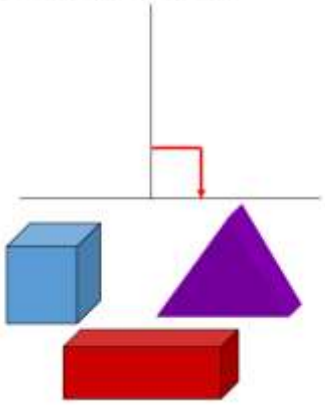


Pentagon

Circle



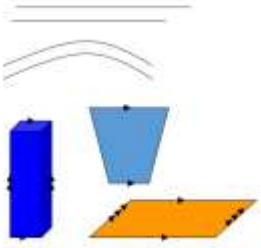
Perpendicular



- Triangle: Tri (3 sides)
- Quadrilateral: Quadri (4 sides)
- Pentagon: Penta (5 sides)
- Hexagon: Hexa (6 sides)
- Heptagon: Hepta (7 sides)
- Octagon: Octa (8 sides)
- Nonagon: Nona (9 sides)
- Decagon: Deca (10 sides)

YOU SHOULD KNOW WHAT FACE, EDGE, VERTEX ARE

Parallelism



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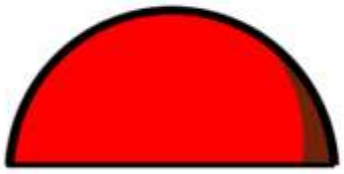
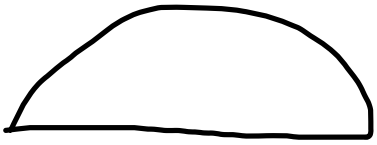
Hemisphere

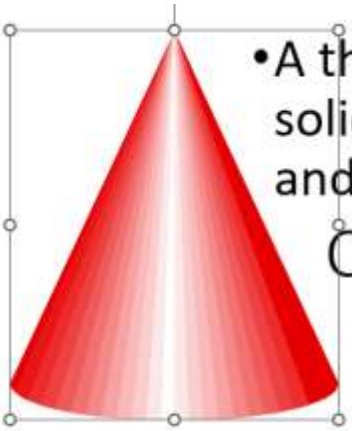


- A three-dimensional solid that is half a sphere.

Semicircle



Half a circle



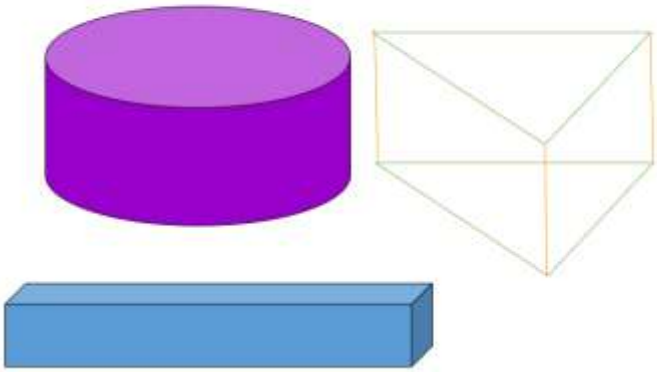
- A three dimensional solid has one vertex and one circular base.

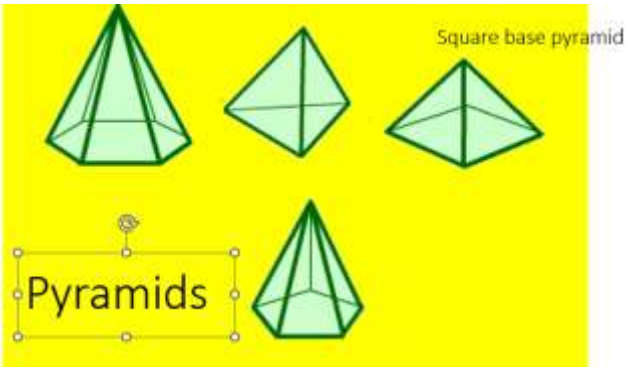
Cone

- A three-dimensional solid with two circular congruent bases.

Cylinder

Prism





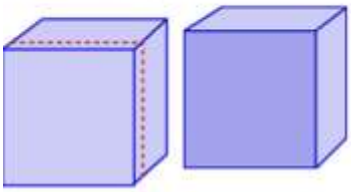
3D and 2D views

3D View:

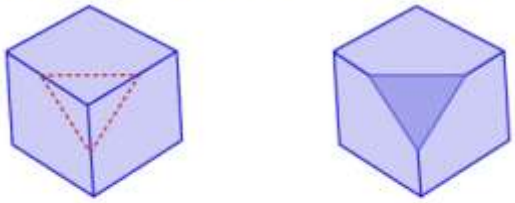
Top view – surface of water:

Try to make the following cross sections by slicing a cube:

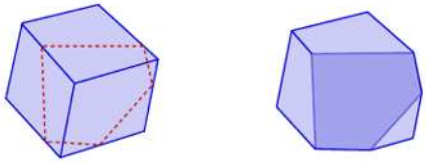
a. a square



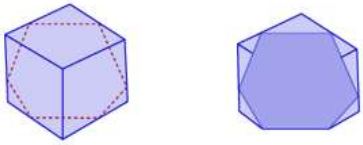
b. an equilateral triangle



e. a pentagon



f. a hexagon

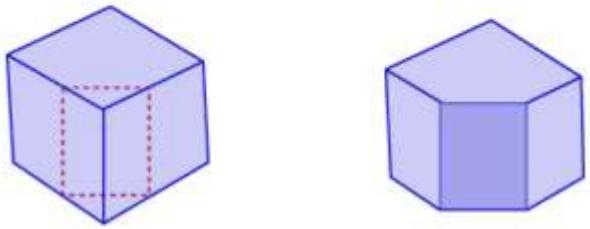


3D and 2D Views

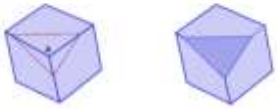
3D View:

Top view – surface of water:

c. a rectangle that is not a square



d. a triangle that is not equilateral



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polyhedron

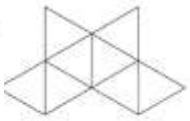
A three-dimensional shape made up of polygonal pieces joined at their edges.

Hedron -> 3D

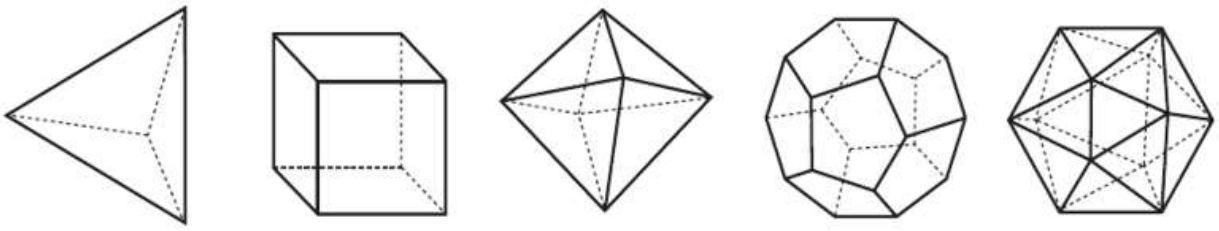
Gon -> 2D

tetrahedron — 4 faces (triangles) **Regular Polyhedra (Platonic Solids)**
hexahedron — 6 faces (squares) Also called a cube.
octahedron — 8 faces (triangles)
dodecahedron — 12 faces (pentagons)
icosahedron — 20 faces (triangles)

3. Eight equilateral triangle faces. Here is a cutout pattern:



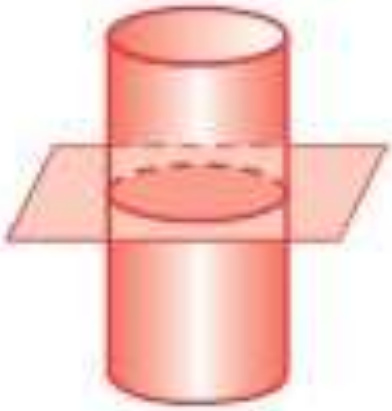
4. Twelve regular pentagon faces. Here is a cutout pattern:



tetrahedron hexahedron octahedron dodecahedron icosahedron

1. Suppose a plane intersects a cylinder parallel to its bases. What is the shape of the cross section? Sketch an example of this cross section.

The cross section is a circle.

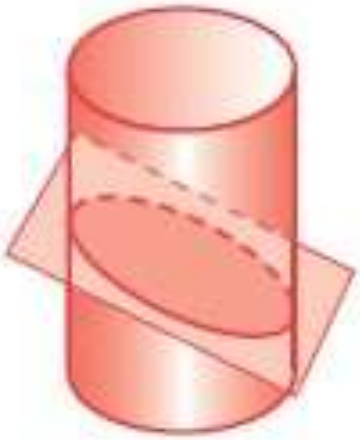


2. Suppose a plane intersects a cylinder perpendicular to its bases so that the plane passes through the centers of the bases. What is the shape of this cross section? Sketch an example of this cross section.

The cross section is a rectangle.

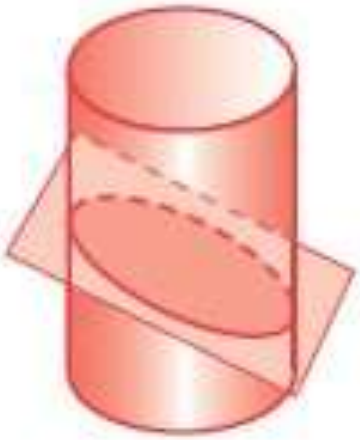
3. Suppose a plane intersects a cylinder so that it is not parallel to its bases. What is the shape of this cross section? Sketch an example of this cross section.

The cross section formed is an ellipse.

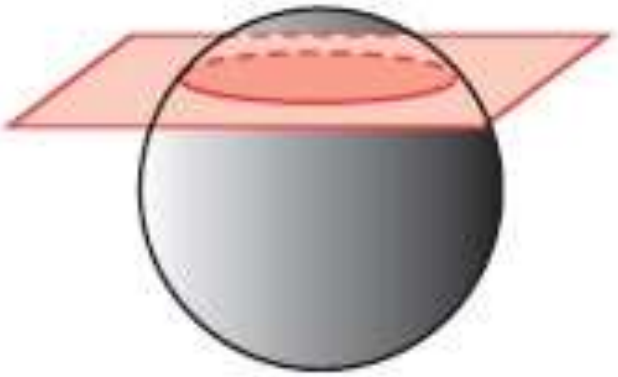


3. Suppose a plane intersects a cylinder so that it is not parallel to its bases. What is the shape of this cross section? Sketch an example of this cross section.

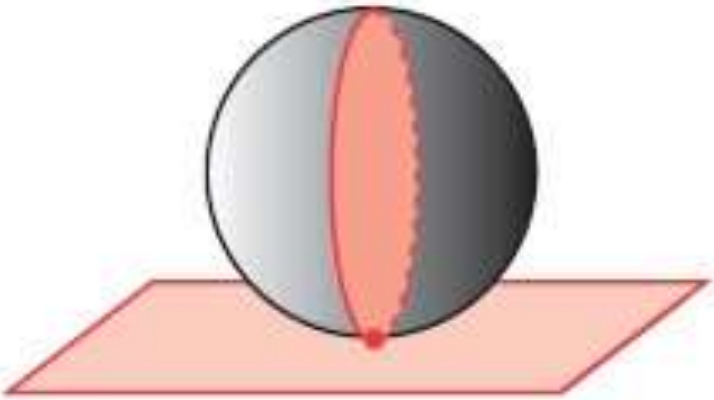
The cross section formed is an ellipse.



The cross section formed is a circle smaller than a great circle.

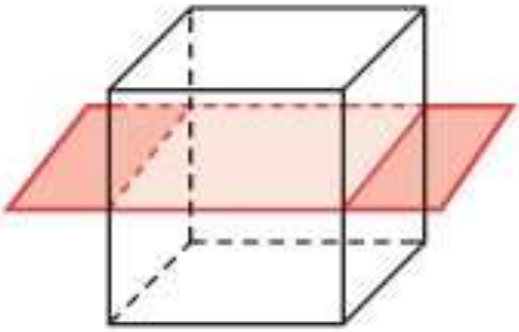


The cross section formed is a single point.

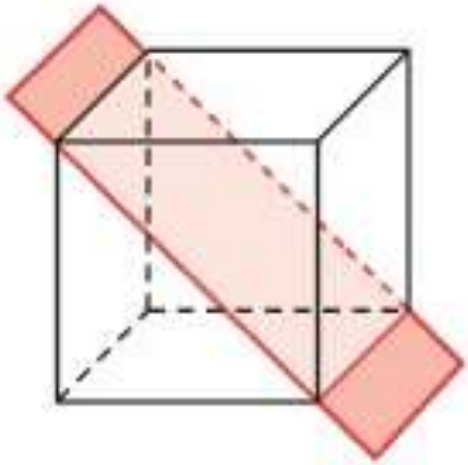


5. Consider a cube. Sketch and describe five different cross sections formed when a plane intersects a cube.

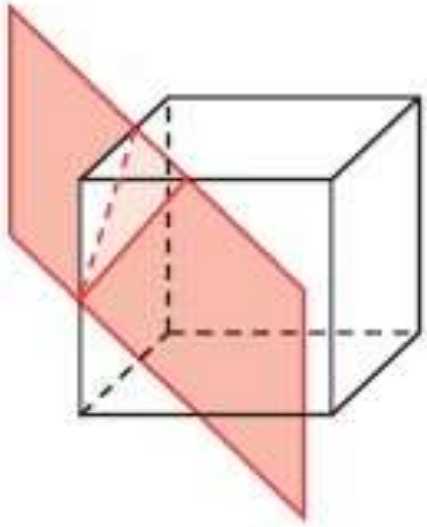
The cross section formed is a square.



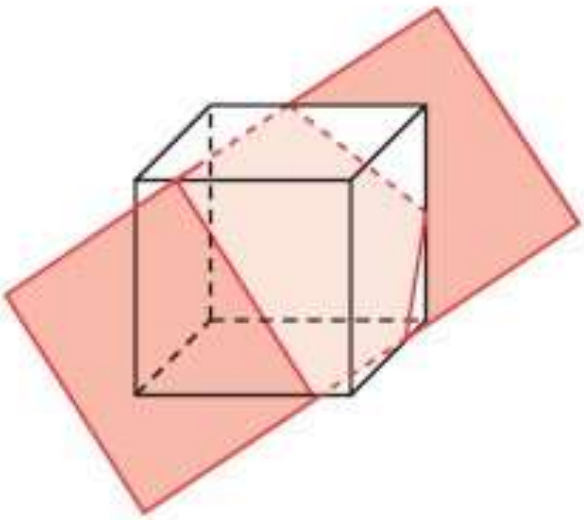
The cross section formed is a rectangle.



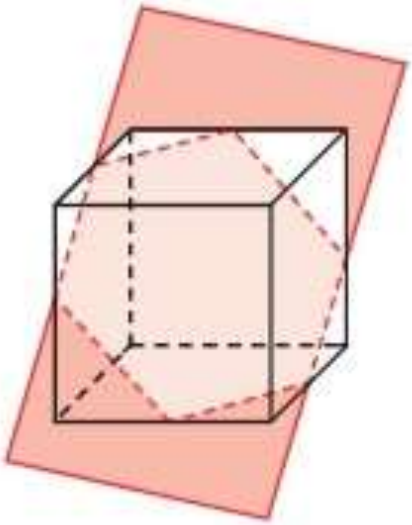
The cross section formed is a triangle.

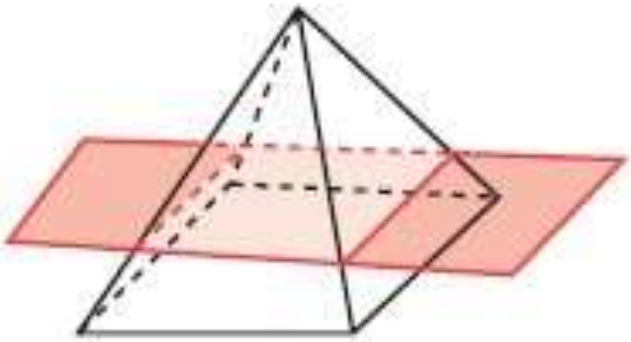


The cross section formed is a pentagon.

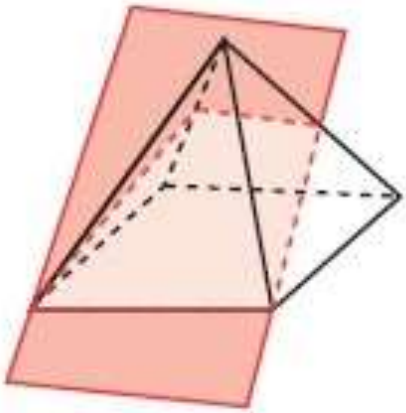


The cross section formed is a hexagon.



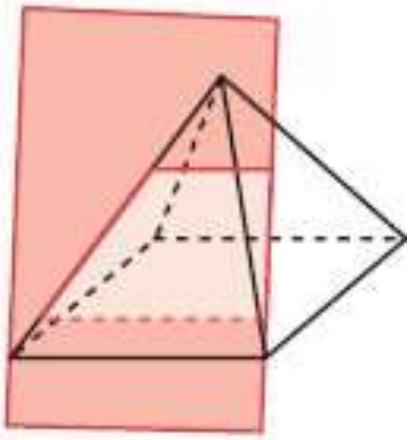


The cross section formed is a square.

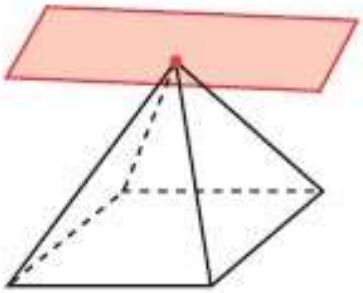


The cross section formed is an isosceles trapezoid.

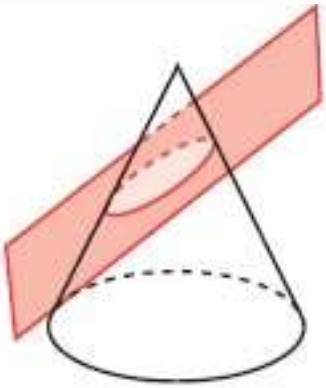
The cross section formed is a quadrilateral.

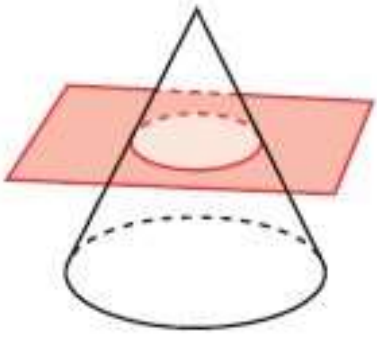


The cross section formed is a single point.



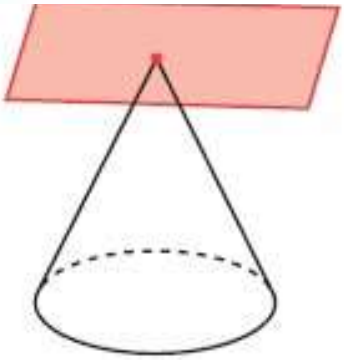
The cross section formed is an ellipse.

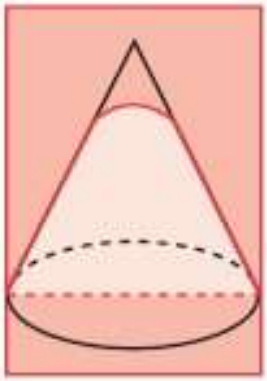




The cross section formed is a circle.

The cross section formed is a single point.





The cross section formed is a parabola.