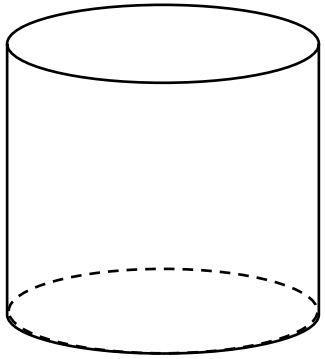
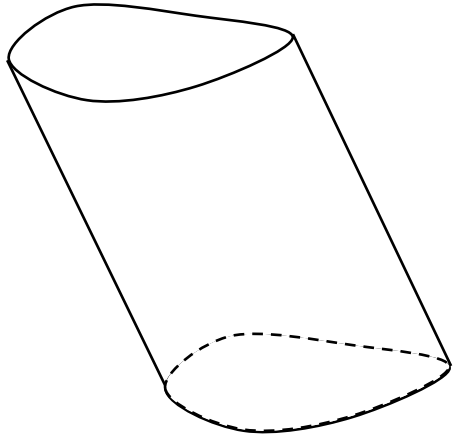
Curved Three Dimensional Shapes:

Cylinder:

It's the shape formed by connecting two simple closed curves lying in parallel planes by line segments along with the interiors of the simple closed curves. The simple closed curves along with their interiors are called the bases of the cylinder.

Examples:



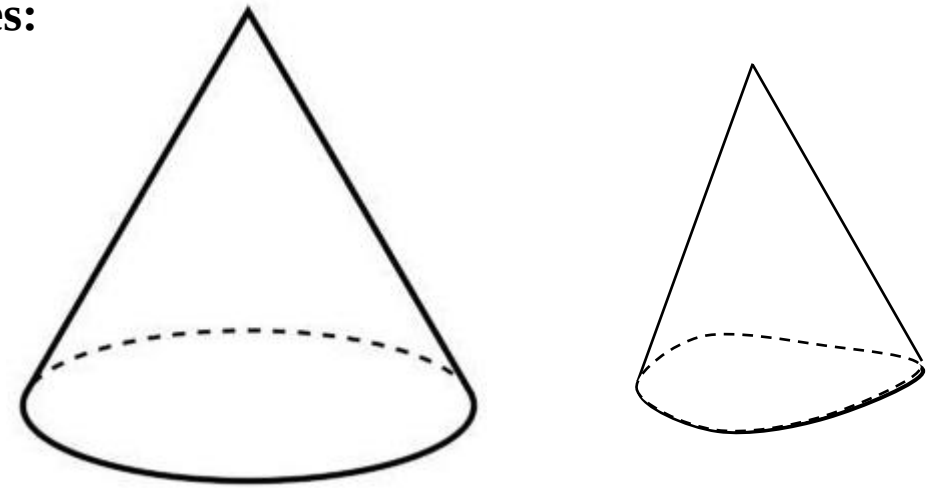


When the bases are circles, the cylinders are called circular cylinders. If the segment connecting the centers of the circles is perpendicular to the planes containing the circles, then it's called a right circular cylinder. Otherwise, it's an oblique circular cylinder.

<u>Cone:</u>

It's the shape formed by connecting a simple closed curve using line segments to a point not in the plane of the curve, called the apex. The closed curve along with its interior is called the base.

Examples:

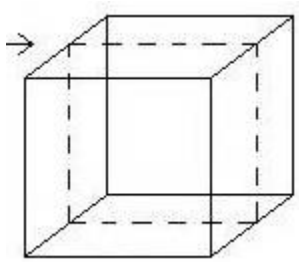


For circular cones, if the segment connecting the apex to the center of the circle is perpendicular to the plane of the base, it's called a right circular cone. Otherwise it's called an oblique circular cone.

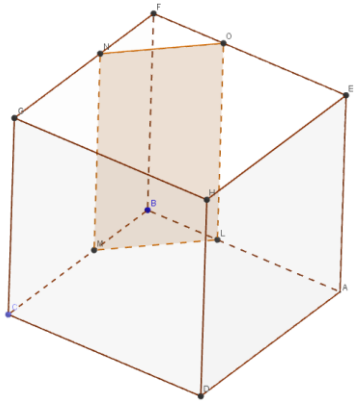
Slicing Three Dimensional Objects with Planes:

Intersection of a cube and a plane.

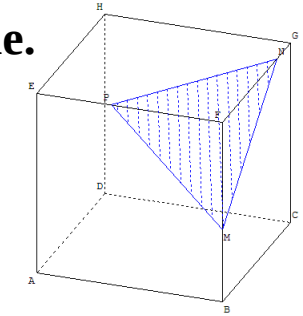
A square.



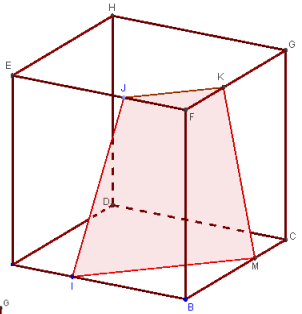
A rectangle.



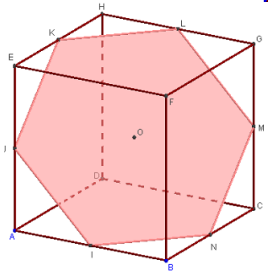
A triangle.



A trapezoid.

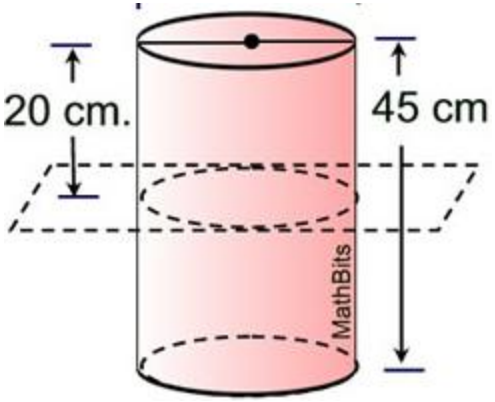


A hexagon.

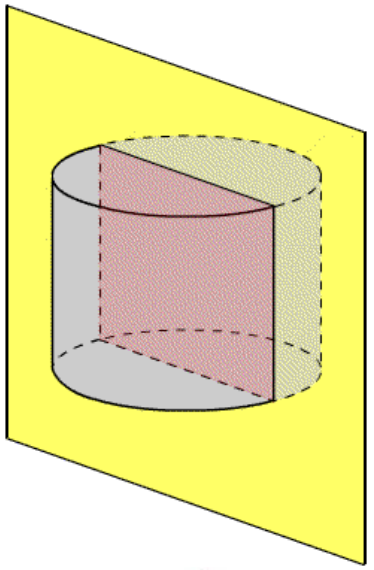


Intersection of a right circular cylinder and a plane.

A circle.

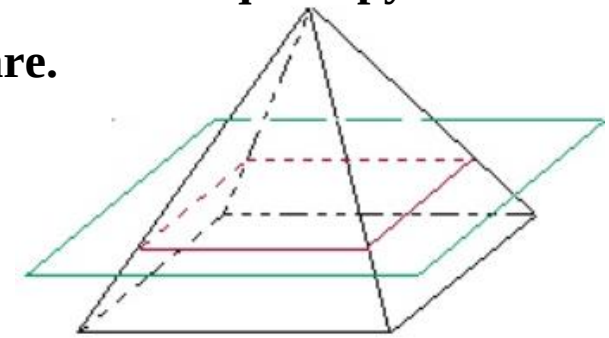


A rectangle.

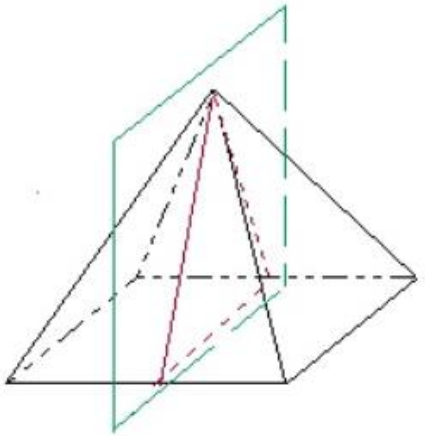


Intersection of a square pyramid and a plane.

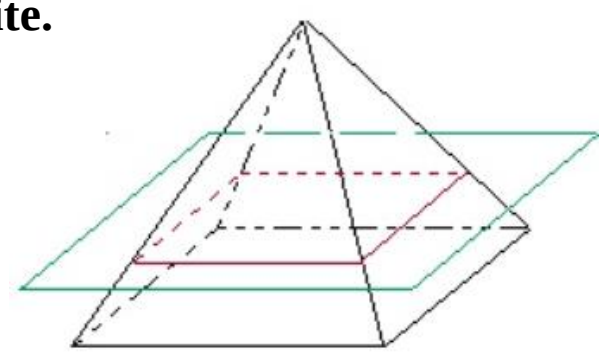
A square.



A triangle.

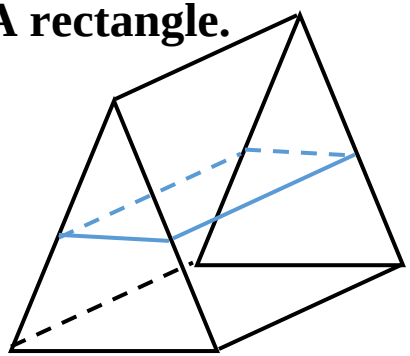


A kite.

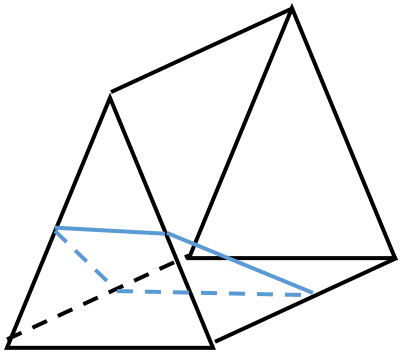


Intersection of a triangular prism and a plane.

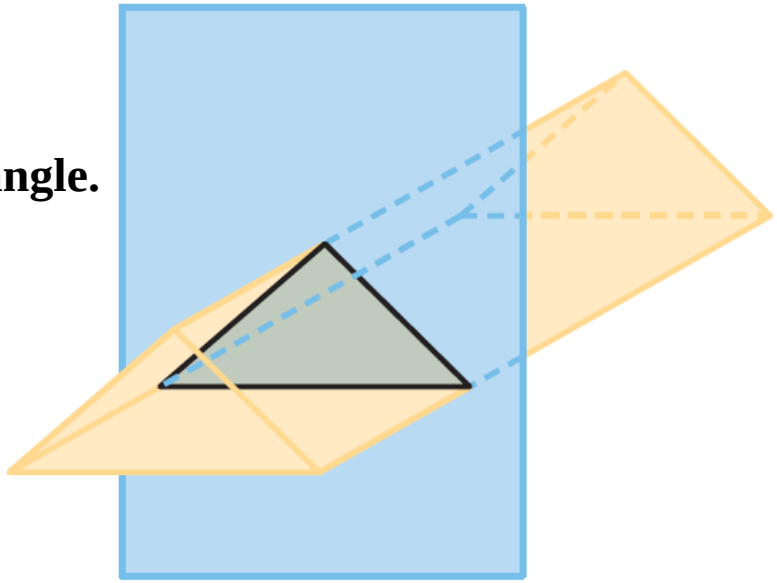
A rectangle.



A trapezoid.



A triangle.



Curved 3-dimensional shapes have nets as well.