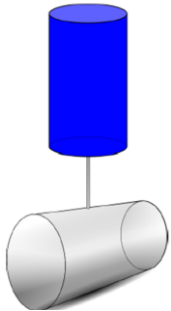


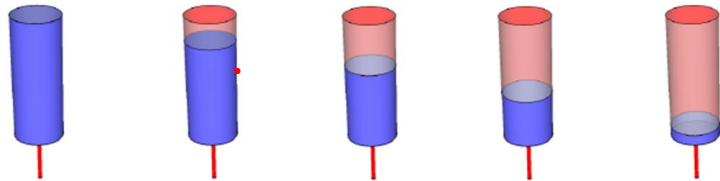
Goals: 1. Identify Cross Sections in multiple scenarios

2. Identify the dimensions and describe the solid formed from rotating a 2D figure around an axis.

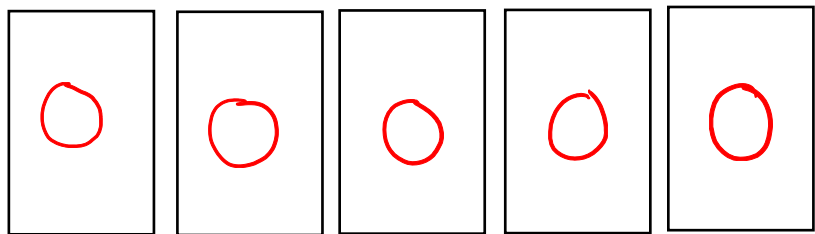
As the top cylinders empties water, what would the top view cross section look like?



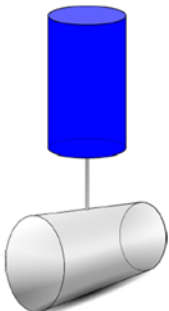
3D View:



Top view – surface of water:



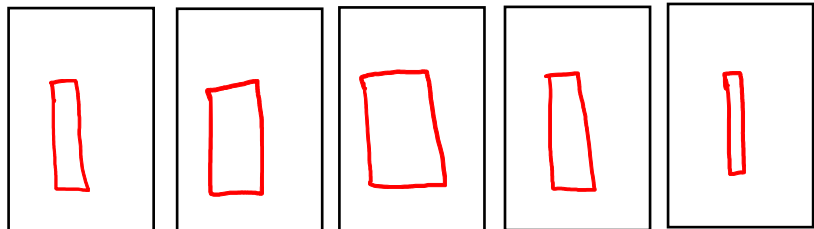
As the bottom cylinder fills with water, what would the top view cross section look like?



3D View:

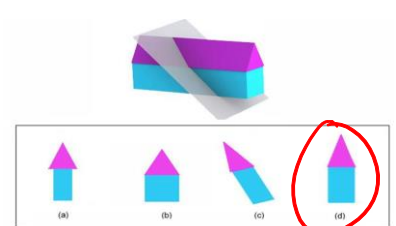
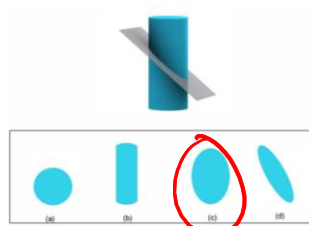
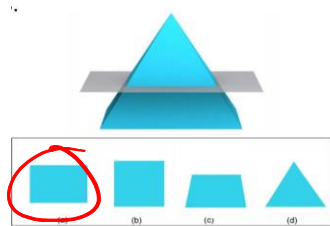
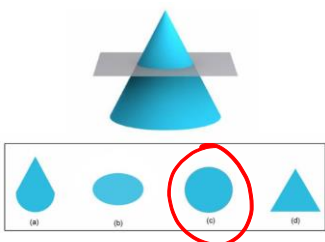


Top view – surface of water:



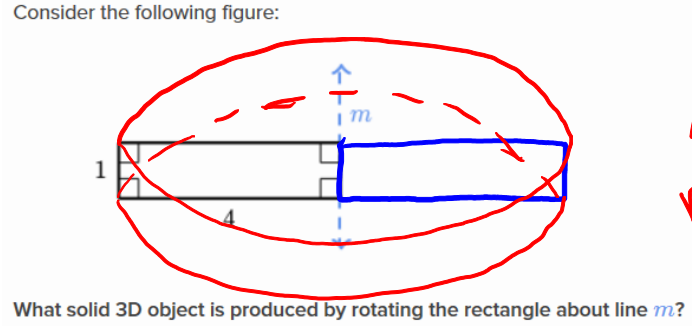
Sketch in the top view for each 3D view:

Identify the cross section created in the following images.



2D rotated about an axis (line) to make a 3D solid

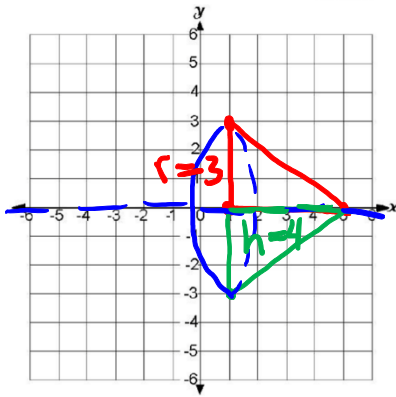
Example: Consider the following figure:



A cylinder with a radius of 4 and height 1

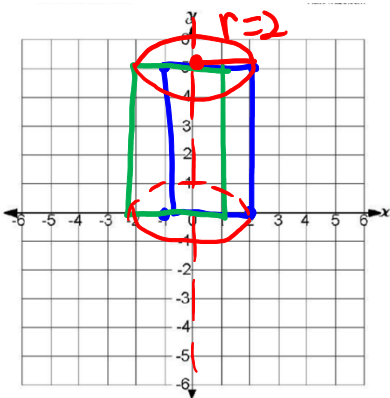
Coordinate Plane Examples:

Ex. 1 Describe in detail the solid formed by rotating a triangle with vertices $(1, 0)$, $(5, 0)$, and $(1, 3)$ about the x -axis. Include the dimensions of the solid in your description.



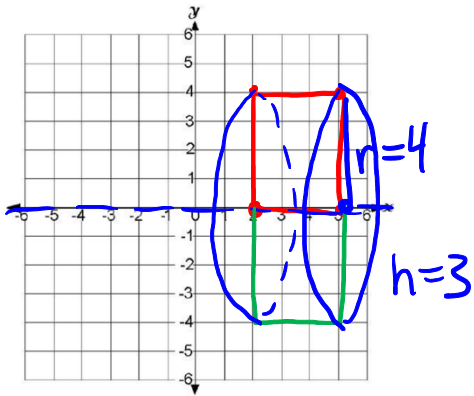
A cone with radius of 3 and height of 4.

Ex. 2 Describe in detail the solid formed by rotating a 3×5 rectangle with vertices $(-1, 0)$, $(2, 0)$, $(-1, 5)$ and $(2, 5)$ about the vertical axis. Include the dimensions of the solid in your description.



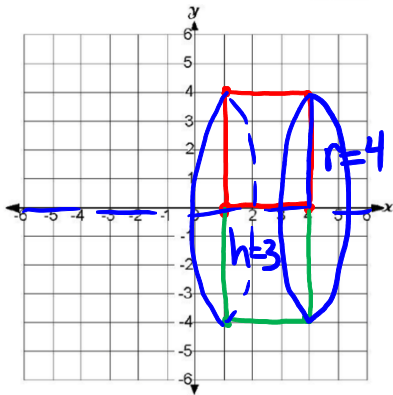
A cylinder with a radius of 2 and a height of 5.

- Describe in detail the solid formed by rotating a 3 x 4 rectangle with vertices (2, 0), (5, 0), (2, 4) and (5, 4) about the x-axis. Include the dimensions of the solid in your description.



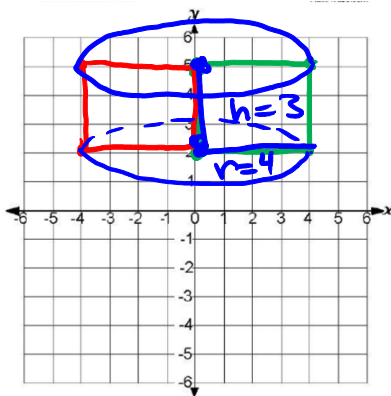
A cylinder with radius of 4
and a height of 3

- Describe in detail the solid formed by rotating a 3 x 4 rectangle with vertices (1, 0), (4, 0), (1, 4) and (4, 4) about the x-axis. Include the dimensions of the solid in your description.



A cylinder with radius 4
and a height of 3

- Describe in detail the solid formed by rotating a 4 x 3 rectangle with vertices (0, 2), (0, 5), (4, 2) and (4, 5) about the y-axis. Include the dimensions of the solid in your description.



A Cylinder with a radius of 4
and height of 3.