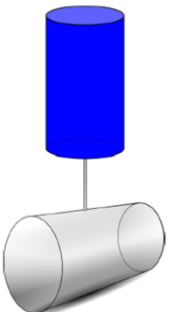
Name _____ Date_____ Block_____ Cross Sections and 2D-3D Notes

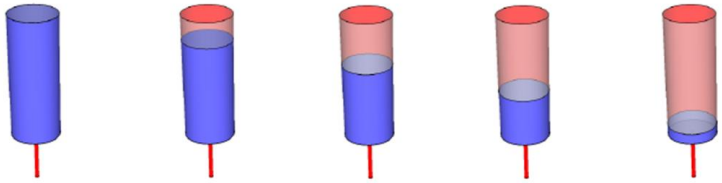
Goals: 1. Identify Cross Sections in multiple scenarios

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

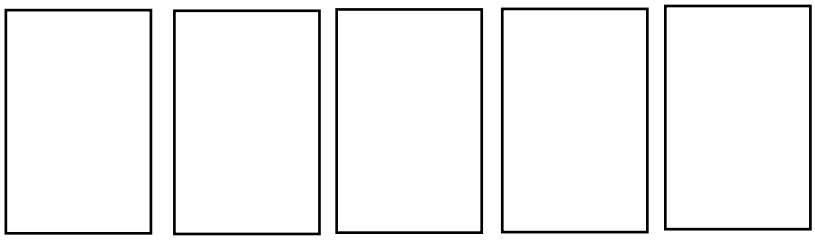
As the top cylinders empties water, what would the top view cross section look like?



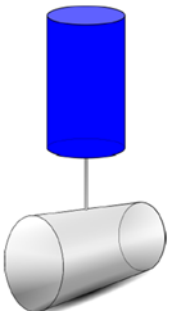
3D View:



Top view – surface of water:

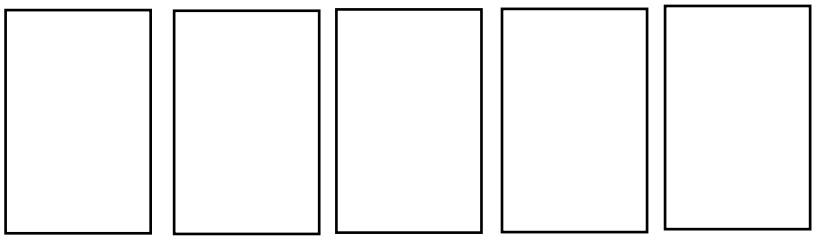


As the bottom cylinder fills with water, what would the top view cross section look like?



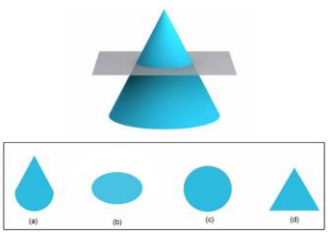
3D View:

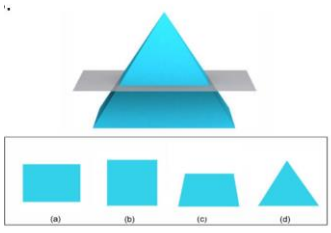
Top view – surface of water:

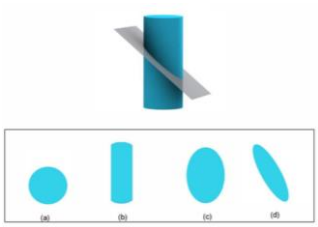


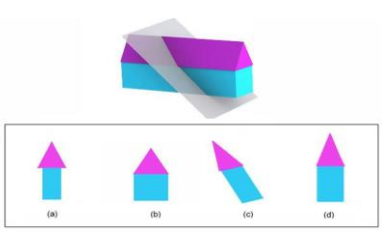
Sketch in the top view for each 3D view:

Identify the cross section created in the following images.



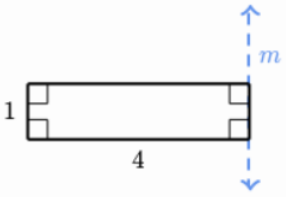






2D rotated about an axis (line) to make a 3D solid

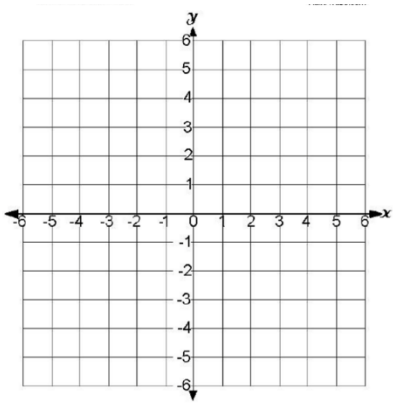
Example: Consider the following figure:



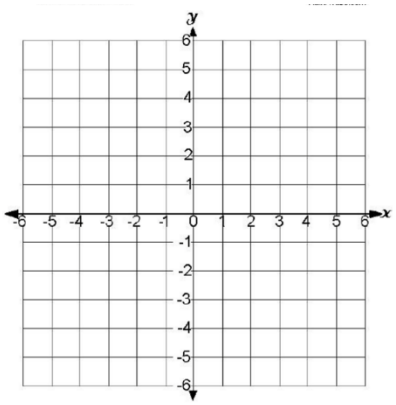
What solid 3D object is produced by rotating the rectangle about line m?

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.

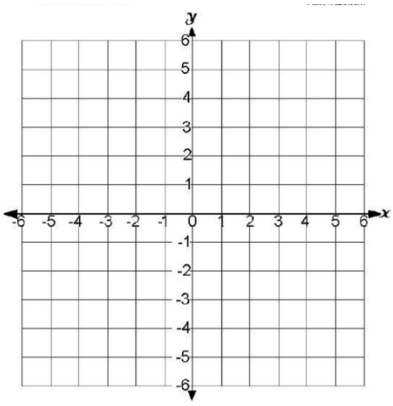


Ex. 2 Describe in detail the solid formed by rotating a 3x5 rectangle with vertices (-1, 0), (2, 0), (, -1,5) and (2, 5) about the vertical axis. Include the dimensions of the solid in your description.

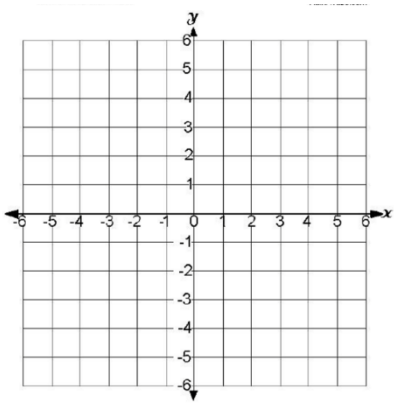


Name_____ Date_____ Block_____ 2D to 3D Practice

1. 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.



2. 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.



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.