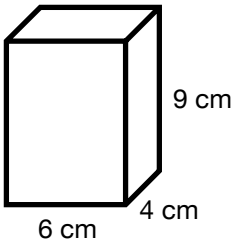
Volume of Prisms and Cylinders

Use What You've Learned

For each of the following three-dimensional shapes, determine the area of the base, identify the height, and determine the volume. Remember, a shape does not have to "sit" on the base.

1.

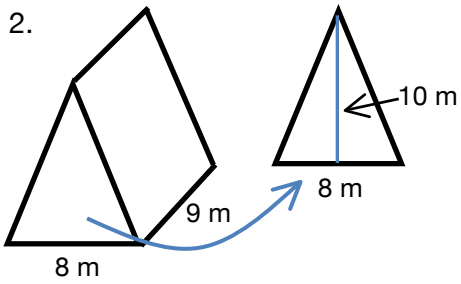


area of the base:

height:

volume:

2.

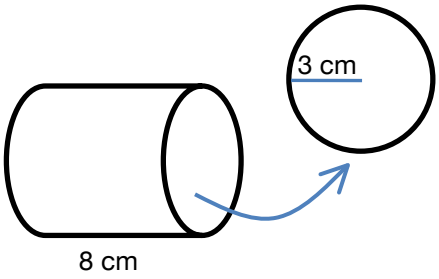


area of the base:

height:

volume:

3.

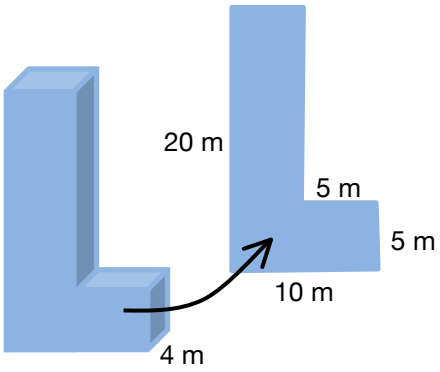


area of the base:

height:

volume:

4.



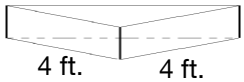
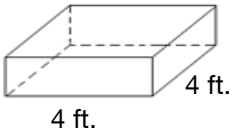
area of the base:

height:

volume:

MakingSense

5. Matt is building a sandbox for a shop project. He found plans for sandboxes with a triangular base, a square base, and a circular base. The depth of each sandbox shown is 6 inches, but Matt could revise the plans to make the depth of each box 9 inches or 12 inches. Before Matt selects a plan, he wants to know the volume of each sandbox. Determine the volume of each sandbox and record your answer in the table.

Sandbox	Volume when the depth is…		
	6 inches or $\frac{1}{2}$ foot	9 inches or $\frac{3}{4}$ foot	12 inches or 1 foot
 Base: right triangle			
 Base: square			
 Base: circle			

6. How could you use the volume of each 6-inch deep sandbox to determine the volume of the 12-inch deep and 9-inch deep sandboxes?

7. How could you use the volume of each square-based prism to determine the volume of each triangular-based prism?