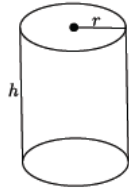
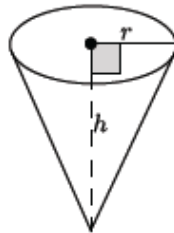


**Lesson Summary**

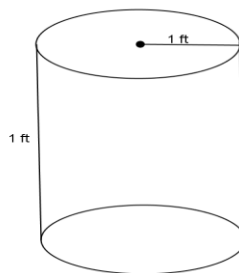
The formula to find the volume,  $V$ , of a right circular cylinder is  $V = \pi r^2 h = Bh$ , where  $B$  is the area of the base.



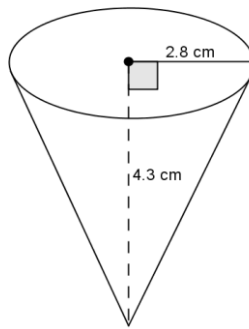
The formula to find the volume of a cone is directly related to that of the cylinder. Given a right circular cylinder with radius  $r$  and height  $h$ , the volume of a cone with those same dimensions is one-third of the cylinder. The formula for the volume,  $V$ , of a circular cone is  $V = \frac{1}{3}\pi r^2 h$ . More generally, the volume formula for a general cone is  $V = \frac{1}{3}Bh$ , where  $B$  is the area of the base.

**Problem Set**

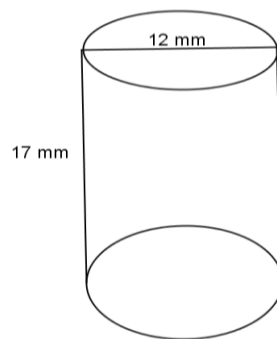
1. Use the diagram to help you find the volume of the right circular cylinder.



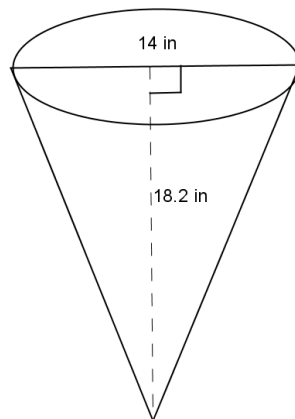
2. Use the diagram to help you find the volume of the right circular cone.



3. Use the diagram to help you find the volume of the right circular cylinder.



4. Use the diagram to help you find the volume of the right circular cone.



5. Oscar wants to fill with water a bucket that is the shape of a right circular cylinder. It has a 6-inch radius and 12-inch height. He uses a shovel that has the shape of a right circular cone with a 3-inch radius and 4-inch height. How many shovelfuls will it take Oscar to fill the bucket up level with the top?

6. A cylindrical tank (with dimensions shown below) contains water that is 1-foot deep. If water is poured into the tank at a constant rate of  $20 \frac{\text{ft}^3}{\text{min}}$  for 20 min., will the tank overflow? Use 3.14 to estimate  $\pi$ .

