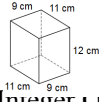


Problem of the Day: Find the volume of the figure.



Plan for the Day: Integer Quiz (if needed)  
~~Go over last week's homework~~ Collect signed tests  
 Finish notes from Friday (7th and 8th)  
 Notes on volume of a cylinder  
 Objective: We will be able to find the volume of a cylinder.  
 Good luck volleyball vs. Rusk!!

A cylinder has the same formula as a prism to find the volume, so  $V = Bh$ .

Since the base of a cylinder is a circle, we can rewrite the formula as

$$V = Bh \quad B = \text{area of } \square \quad V = \pi r^2 h$$

$$V = \pi r^2 h$$

Always use 3.14 for  $\pi$  unless stated otherwise.  
 You may be asked to leave the volume in terms of  $\pi$ .

Example 1: Find the volume of the cylinder pictured below.

$V = Bh$     $B = \pi r^2$     $d = 2$   
 $r = 1$   
 $V = \pi r^2 h$   
 $V = \pi \cdot 1^2 \cdot 4$   
 $V = \pi \cdot 1 \cdot 4$   
 $V = 12.56 \text{ ft}^3$

Example 2: Find the volume of the graduated cylinder. Leave your answer in terms of  $\pi$ .

$V = Bh$     $B = \pi r^2$   
 $V = \pi r^2 h$   
 $V = \pi \cdot 2^2 \cdot 9$   
 $V = \pi \cdot 4 \cdot 9$   
 $V = 36\pi \text{ in}^3$

Example 3: The Longhorn Band at the University of Texas at Austin has one of the world's largest bass drums, known as Big Bertha. Big Bertha has a diameter of 8 feet and is 4.5 feet deep. Find the volume of the drum to the nearest tenth.

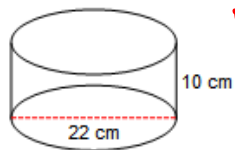
$V = Bh$     $B = \pi r^2$   
 $V = \pi r^2 h$   
 $V = \pi \cdot 4^2 \cdot 4.5$   
 $V = \pi \cdot 16 \cdot 4.5$   
 $V = 226.1 \text{ ft}^3$

Example 4: A drum company advertises a snare drum that is 4 inches high and 12 inches in diameter. Find the volume of the drum to the nearest tenth.

$V = Bh$     $B = \pi r^2$   
 $V = \pi r^2 h$   
 $V = \pi \cdot 6^2 \cdot 4$   
 $V = \pi \cdot 36 \cdot 4$   
 $V = 452.2 \text{ in}^3$

Try on your own

Find the volume of the cylinder. Leave your answer in terms of  $\pi$ .



$$V = 1210\pi \text{ cm}^3$$