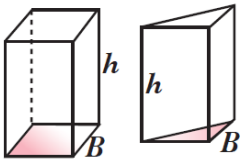
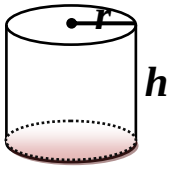
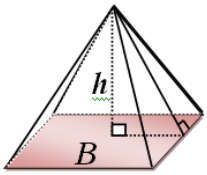
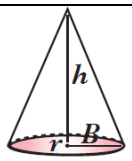
Notes: **APPLICATION OF VOLUME**

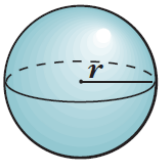
Content Objective: ***I will be able to apply the formulas for volume to real-life situations.***

TERM	DESCRIPTION	EXAMPLE
VOLUME	The amount of _____ enclosed in the interior of a three-dimensional object.	

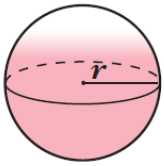
VOLUME

FIGURE	FORMULA	FIGURE	FORMULA
Prism	 $V = Bh$	**Cylinder**	 $V = Bh$
Pyramid		**Cone**	 $V = \frac{1}{3}Bh$

SURFACE AREA & VOLUME OF A SPHERE



$S = 4\pi r^2$



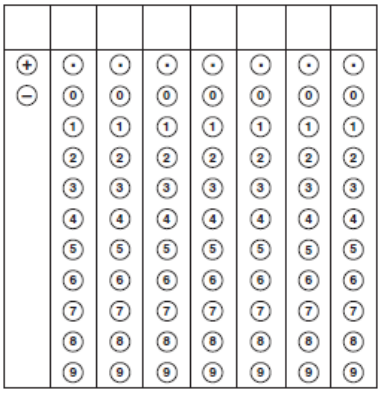
$V = \frac{4}{3}\pi r^3$

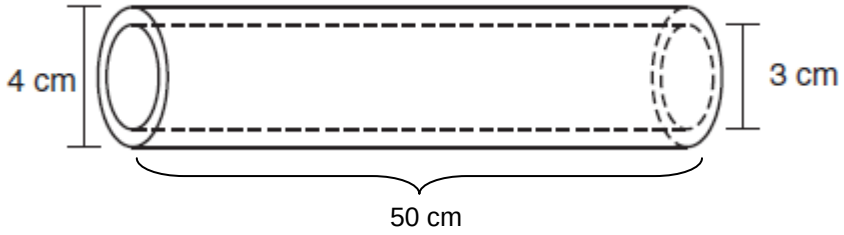
EXAMPLE 1: *An internet bookstore is shipping a book to a customer. The dimensions of the book are 7 inches by 4 inches by 1.5 inches. The dimensions of the box in which the book will be shipped are 12 inches by 8 inches by 2.75 inches. How many cubic inches of packing material must be added to completely fill the box?*

$V_{Packing\ Material}$ = _____ in^3

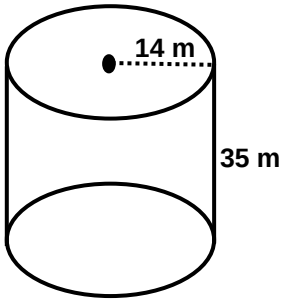
EXAMPLE 2: *A water pipe has an outer diameter of 4 centimeters. Its inner diameter is 3 centimeters. Approximately how many cubic centimeters of metal are needed to make the pipe?*

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.



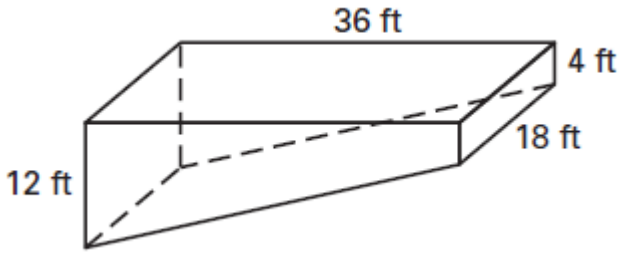


EXAMPLE 3: *What is the volume of the air in the following cylinder if it is filled ¼ of the way with water?*



V = _____ m^3 V ≈ _____ m^3

EXAMPLE 4: *A common design for swimming pools is for the depth to change gradually from the shallow end to the deep end. Use the dimensions shown to find the volume of water the pool can hold.*



V = _____ ft^3