$V = A_b \cdot h$

↓

expanded

Name _____

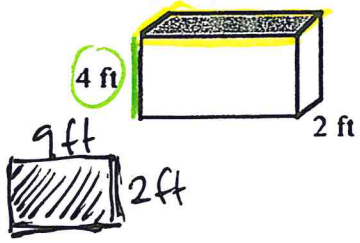
Date _____ Per _____ A#_____

Volume of a Prism

Find the volume of each prism. Show all subproblems. Draw and label the "base shape." Remember the proper units. ~~Circle~~ your final answer.

Box

1) Rectangular Prism



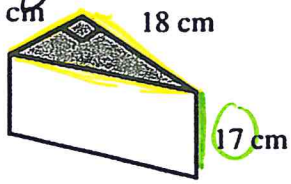
$V = A_b \cdot h$

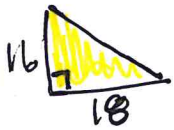
$V = (lw) \cdot h$

$V = (9)(2)(4)$

$V = 72 ft^3$

2) Triangular Prism





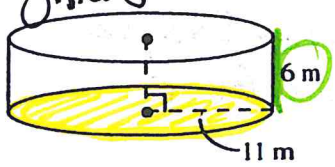
$V = A_b \cdot h$

$V = \left(\frac{bh}{2}\right) \cdot h$

$V = \frac{18(16)}{2} \cdot 17$

$V = 2448 cm^3$

3) Cylinder



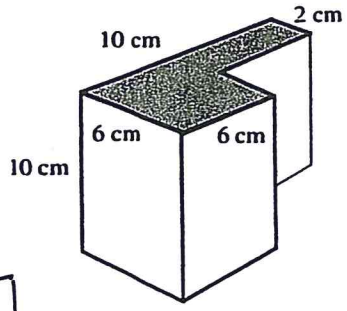
$V = A_b \cdot h$

$V = (\pi r^2) \cdot h$

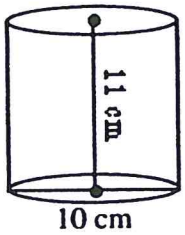
$V = \pi (11)^2 (6)$

$V = 2280.8 m^3$

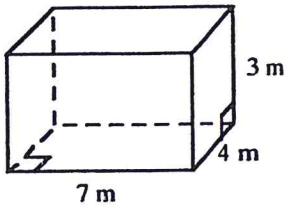
4)



5)



6)



Over →

Cylinder

$V = (\text{side})^3$

7) If the volume is 533 ft³ and the height is 12 feet, find the radius, to the nearest foot.	8) The volume of a cube is 729 ft³. What are the dimensions of this cube?	9) Draw a net of the prism from problem 1. Label the dimesions.
• Set up V formula • Sub in 533, 12 • Solve for r	(side length)	

VOLUME OF A CYLINDER

#39

The volume of a cylinder is the area of its base multiplied by its height:

Volume = (Area of Base)(height) or V = A · h.

Since the base of a cylinder is a circle of area $A = \pi r^2$, we can write:

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

VOLUME OF A PRISM

Volume is a three-dimensional concept. It measures the amount of interior space of a three-dimensional figure based on a cubic unit, that is, the number of 1 by 1 by 1 cubes that will fit inside a figure.

The volume of any prism is the area of either base (A) times the height (h) of the prism.

V = (Area of base) · (height) or V = Ah