

# Geometry:

## Using Formulas of Shapes

Ex: The width of a rectangle is 7ft. The area of the rectangle is 84 ft<sup>2</sup>. Find the length of the rectangle.

- Determine what shape you have. rectangle.
- Determine which formula to use for that shape based on the info given & needed in the problem.

Which formula has Area, length & width?

The area of a rectangle formula

$$A = Lw$$

- Plug in all info & solve.

$$84 \text{ ft}^2 = l \cdot 7 \text{ ft.}$$

multiplication.  
Divide to cancel.

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$$7 \text{ ft.} = 7 \text{ ft.}$$

$\text{ft.}^2 = \text{ft.} \cdot \text{ft.}$

$$\frac{84 \text{ ft.}^2}{7 \text{ ft.}} = 12 \text{ ft.} = l$$

$\frac{\text{ft.} \cdot \text{ft.}}{\text{ft.}} = \text{ft.}$

$$\frac{x \cdot x}{x} = x$$

## Using Formulas of Shapes

Ex: The Volume of a cylinder is  $1215 \text{ mm}^3$ .  
The radius is  $9 \text{ mm}$ . Find the Height.

- Shape: Cylinder
- Which formula? Volume of cylinder formula.

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

$$1215 \text{ mm}^3 = \pi \cdot (9 \text{ mm})^2 \cdot h$$

$$1215 \text{ mm}^3 = \pi \cdot 81 \text{ mm}^2 \cdot h$$

This should be written as

$$81\pi \text{ mm}^2$$

$$\frac{1215 \text{ mm}^3}{81\pi \text{ mm}^2} = \frac{81\pi \text{ mm}^2 \cdot h}{81\pi \text{ mm}^2}$$

$$\frac{15}{\pi} \text{ mm} = h$$

## Homework: Worksheet