

Literal Equations and Using Formulas to Solve Problems Guided notes- PRINT and follow along with podcast)



Goal /objectives

- 1 Solve for a Variable in a Formula
- 2 Use Formulas to Solve Problems

If I give you a literal equation ( equation taken from physics/geometry/finance/ and other fields) can you manipulate it to solve for a given variable?

Try this one with me- listen to podcast if you are stuck.



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

## Example:

Solve y = mx + b for m.

Some important formulas- I recommend devoting these to memory if you plan on taking future math classes

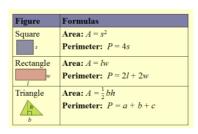


Figure	Formulas
Cube	<b>Volume:</b> $V = s^3$ <b>Surface Area:</b> $S = 6s^2$
Rectangular Box	Volume: $V = lwh$ Surface Area: $S = 2lw + 2lh + 2wh$
Sphere	Volume: $V = \frac{4}{3}\pi r^3$ Surface Area: $S = 4\pi r^2$

Figure	Formulas
Trapezoid  h  B	Area: $A = \frac{1}{2}h(B+b)$ Perimeter: $P = a+b+c+B$
Parallelogram	Area: $A = bh$ Perimeter: $P = 2a + 2b$
Circle	Area: $A = \pi r^2$ Circumference: $C = 2\pi r = \pi d$

Figure	Formulas
Right Circular	Volume: $V = \pi r^2 h$
Cylinder	Surface Area: $S = 2\pi r^2 + 2\pi rh$
Cone	<b>Volume:</b> $V = \frac{1}{3}\pi r^2 h$

Many times doing a word problems just involves choosing the right geometric formula out of your memory and plug and chug of the correct variables.

## **Example**:

A sailboat has a triangular sail with an area of 96 feet and a height that is 12 feet high. What is the length of the base of the sail?

Ans

The length of the base of the sail is 16 feet.



## Example

Suzy is making a planter out of an empty can for her mother's birthday. She has 157 cubic inches of soil to use. Find the radius of the can if it has a height of 8 inches.

ans

The radius of the can is 2.5 inches.