Dealing with word problems...a further exploration

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
Square	**Area:** $A = s^2$ **Perimeter:** $P = 4s$
Rectangle	**Area:** $A = lw$ **Perimeter:** $P = 2l + 2w$
Triangle	**Area:** $A = \frac{1}{2}bh$ **Perimeter:** $P = a + b + c$

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

Continued

Figure	Formulas
Trapezoid	**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 Cylinder	**Volume:** $V = \pi r^2 h$ **Surface Area:** $S = 2\pi r^2 + 2\pi rh$
Cone	**Volume:** $V = \frac{1}{3}\pi r^2 h$

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.