Name:	Math 7.2, Period
Mr. Rogove	Date:

**LEARNING OBJECTIVE:** We will rearrange formulas and solve for variables. (Lesson 84)

### **ACTIVATING PRIOR KNOWLEDGE:**

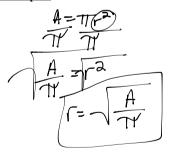
We know how to use formulas to find unknown quantities.

we know now to use formulas to find unknown quantities.		
The side of one leg of a right triangle is	The average of 3 numbers is 67. One	
24 inches, and the hypotenuse is 25	number is 45, and another is 71. What is	
inches. What is the length of the other	the third number?	
leg?		

#### **CONCEPT DEVELOPMENT:**

We can use properties of equality and inverse operations to rearrange formulas, and solve for specific variables. IANIPULATE

*Example*:  $\hat{A} = \pi r^2$  Let's solve for r.



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## **GUIDED PRACTICE:**

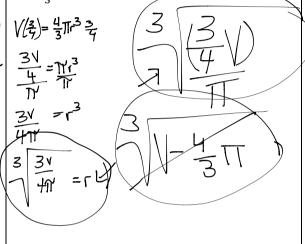
# **Steps for Solving For Variables**

- 1. Study the particular formula and identify the variable you are trying to solve for.
- 2. Perform inverse operations and use properties of equality to isolate the appropriate variable.

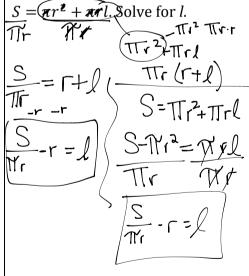
The formula for the perimeter of a rectangle is P = 2(l + w). Solve for w.

$$P=2(l+w)$$
 $P=2(Hw)$ 
 $P=2$ 

The formula for volume of a sphere is  $V = \frac{4}{3}\pi r^3$ . Solve for the radius.



The surface area of a cone is



The formula  $E = \frac{1}{2}kx^2$  is used to find the potential energy E of a spring with spring constant k that has been stretched by length x. Solve the formula for x.

$$2\left(\frac{E}{2}Kx^{2}\right)^{2}$$

$$\frac{2E}{2}Kx^{2}$$

$$\frac{2E}{2}Kx^{2$$

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The formula for the average of three	
numbers is $A = \frac{x+y+z}{3}$ . Solve for z.	/

The formula for Fahrenheit is  $F = 32 + \frac{9}{5}C$ . Solve for Celsius.

$$\frac{y-b}{m} = x.$$

Solve for *y*.

Solve for q.

$$\frac{mq}{m} = \frac{n}{m}$$

$$km = \frac{m}{2} + p.$$

Solve for *m*.

$$(km) = (\frac{m}{a} + \rho) a$$

$$-\frac{m}{a} - \frac{m}{a}$$

$$km = m + a\rho$$

$$\frac{1}{2} = \frac{1}{2}$$

$$\left(k - \frac{m}{2}\right) = (p) \lambda$$

$$2km-m=2p$$
 $m(2k-1)=2p$ 

Solve for s. 
$$rs - t = us + v$$
  
 $+t + t$   
 $rs = us + t + v$   
 $-us - us$   
 $rs - us = t + v$  Collects on  $rs = t + v$   
 $rs - us = t + v$  The state of  $rs = t + v$ 

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## **INDEPENDENT PRACTICE:**

Solve for the variable.

Simple Interest is calculated as $I = Prt$ .
Solve for <i>t</i> .

The standard form for the equation of a line is Ax + By = C. Solve for y.

Solve for h. 
$$\frac{g\left(h + \frac{2}{3}\right) = 1.}{9}$$

$$1 + \frac{2}{3} = \frac{1}{9}$$

$$\frac{1}{3} = \frac{1}{9}$$
 $\frac{1}{3} = \frac{1}{9}$ 
 $\frac{1}{3} = \frac{1}{9}$ 

$$a(n-3) + 8 = bn.$$
Solve for n.
$$ah - 3a + 8 = bn$$

$$-an$$

$$-3a + 8 = bn - an$$

$$-3a + 8 = n(b-a)$$

$$b-a$$

$$-3a + 8 = n(b-a)$$

$$\left( |-q| x = \frac{1+a}{1-a} \right)$$
Solve for  $a$ .

$$\begin{array}{cccc}
X - 0X = |+ \alpha \\
- \alpha & - \alpha
\end{array}$$

$$\begin{array}{cccc}
\chi - 0X - \alpha & = |\\
- \chi & - \chi
\end{array}$$

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- \alpha & - \alpha & = |-\chi
\end{array}$$

$$\begin{array}{cccc}
\alpha & |-\chi - \chi - \chi
\end{array}$$

$$a^2 + b^2 = c^2.$$
 Solve for *b*.

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### CLOSURE:

$$T = 4\sqrt{m}$$

Solve for *m*.

# Notes:

Maps to lesson 4-3 of Algebra 1 (GO MATH) and lesson 19 in Alg 1 Mod 1 of ENY