

## WARM UP

1. John buys tickets for a waterpark. Child tickets ( $x$ ) are \$6 each and adult tickets ( $y$ ) are \$12 each. He spends \$66.

$$12y + 6x = 66 \quad 6x + 12y = 66$$

2. Using your equation from #1, if John bought 3 adult tickets, how many child tickets did he buy?

$$12(3) + 6y = 66 \quad 6y = 30 \quad y = 5 \quad \boxed{5}$$

$$36 + 6y = 66$$

3. You sign up for a cell phone plan that each month will cost \$25 plus \$10 per gigabytes of data that you use.

$$y = 25 + 10x$$

4. Using your equation from #3, if you used 3 GB of data, how much does it cost?

$$y = 25 + 10(3) \quad \boxed{\$55}$$

$$y = 25 + 30$$

$$y = 55$$

5. Sally is going to make cookies for a bake sale. Her dad had already made 24 cookies. Two hours after Sally started making cookies, she has 120 cookies total made.

$$\boxed{y = 24 + 48x}$$

$$120 = 24 + m(2)$$

$$120 - 24 = 96 \quad \frac{96}{2} = \frac{m(2)}{2}$$

$$96 \div 2 = 48 \quad 48 = m$$

6. How many hours has she been baking, if she has 264 cookies made?

$$264 = 24 + 48x$$

$$\frac{264 - 24}{48} = \frac{240}{48} = 5 = x$$

$$\boxed{5 \text{ hours}}$$

7. Steve can buy Jolly Ranchers for \$0.10 each and bubble gum for \$0.25 each. He spends \$2.90.

$$0.10x + 0.25y = 2.90$$

Literal Equation - an equation that contains more than one variable

Ex. 1: Solve for  $b$ .

$$c \cdot a = \frac{b}{c} \cdot c$$
$$\frac{b \cdot c}{c}$$
$$a \cdot c = b$$

Ex. 2: In the distance formula, distance = rate  $\times$  time.  
Solve for  $t$ .

$$\frac{d}{r} = \frac{rt}{r}$$
$$\frac{d}{r} = t$$

Ex. 3: Solve for  $k$ .

$$\frac{k-2}{5} = 11j$$

Ex. 4: Rearrange the formula for circumference of a circle to solve for the radius  $r$ .

$$\frac{C}{2\pi} = \frac{2\pi r}{2\pi}$$

$$\frac{C}{2\pi} = r$$

Ex. 5:

$$r =$$

a. Rearrange the formula for perimeter of a rectangle to solve for the length  $l$ .

$$P = 2w + 2l$$

$$\frac{P-2w}{2} = \frac{2l}{2}$$

$$\frac{P-2w}{2} = l$$

$$\frac{P-2w}{2} = l$$

$$\frac{P}{2} - w = l$$

B and C  
Ex 8

b. Find the length of a rectangle with a perimeter of 86 yards and a width of 12 yards.

c. Find the length of a rectangle with a perimeter of 300 cm and a width of 23 cm.

Ex. 6: Solve for  $y$ . Put answer in slope-intercept form.

$$3x + 2y = 12$$

Ex. 7: Solve for  $y$ . Put answer in slope-intercept form.

$$4x - 3y = 8$$

Ex. 8: The formula below relates temperatures Celsius to Fahrenheit. Solve for  $F$ .

NO DECIMALS!  $C = \frac{5}{9}(F - 32)$

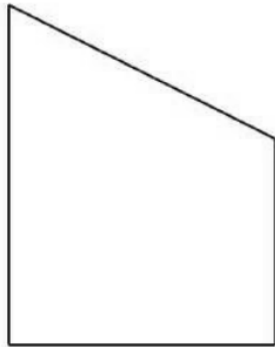
NO fractions within fractions: example  $\frac{C}{\frac{5}{9}}$

Ex. 9: The formula below is for area of a trapezoid:

$$A = \frac{b_1 + b_2}{2} \cdot h$$

You are building a tree house and you have enough paneling to create an area of the side wall to be  $152 \text{ ft}^2$ .

Solve for  $b_1$



Solve for  $b_2$

Solve for  $h$

You're not sure how **tall** the tree house should be ( $b_1$ ) and want to look at the different possibilities.

Which equation should you use to complete the table below?

Fill in the table below.

Area	Base 1	Base 2	Height
152 feet <sup>2</sup>		7 feet	15 feet
152 feet <sup>2</sup>		8 feet	20 feet
152 feet <sup>2</sup>		6 feet	18 feet
152 feet <sup>2</sup>		6.5 feet	22 feet