Algebra I-Spring semester (S1)
Lesson: April 7, 2020

Learning Target:

Students will solve literal equations for a given variable.

Bell Work April 6, 2020

1) Define literal equation:

1) How do you rewrite a literal equation?

1) How do you solve for a variable?

Literal equation bell work ANSWERS

1) Define literal equation: An equation with two or more variables.

2) How do you rewrite a literal equation? You can "rewrite" a literal equation to isolate any one of the variables using inverse operations. This is called *solving for a variable*.

3) How do you solve for a variable?

Step 1 Locate the variable you are asked to solve for in the equation.

Step 2 Identify the operations on this variable and the order in which they are applied.
Step 3 Use inverse operations to undo operations and isolate the variable.

More Work with Solving Literal Equations

Let's Get Started:

Watch Video:

Step by step solving literal equations:
https://www.youtube.com/watch?v=L2e3LPhAXW8

Solve literal equations using multiple variables:
https://www.youtube.com/watch?v=aMLpLo4drG8

Example 1: Distance Formula

Solve for *r*

$D = rt$ — I need to get r by itself on one side of the equation.

$\frac{D}{t} = \frac{rt}{t}$ — I need to get rid of the t, so I'll divide both sides by t.

$\frac{D}{t} = r$ — Now the formula is solved for r.

Example 2: Equations Involving Fractions

$y = \frac{f+g}{3}$

- Solve this formula for g.

$\frac{f+g}{3} = y$	I rewrote the problem with the equation on the left.
$\frac{3(f+g)}{3} = (y)3$	Multiply BOTH sides by 3 to remove the 3 in the denominator.
$f+g = 3y$	
$f - f + g = 3y - f$	Subtract "f" from BOTH sides.
$g = 3y - f$	The formula is now solved for g.

Now let's practice solving literal equations!!

LITERAL EQUATIONS WORKSHEET Solve for the indicated variable *in the parentheses.*

1) $P = IRT\ (T)$

2) $A = 2(L + W)\ (W)$

3) $y = 5x - 6\ (x)$

4) $2x - 3y = 8\ (y)$

5) $\frac{x+y}{3} = 5\ (x)$

6) $y = mx + b\ (b)$

7) $ax + by = c\ (y)$

8) $A = \frac{1}{2}h(b + c)\ (b)$

9) $V = LWH\ (L)$

10) $A = 4\pi r^2\ (r^2)$

Answer Key

1) $T = \frac{P}{IR}$

2) $W = \frac{A-2L}{2}$

3) $x = \frac{y+6}{5}$

4) $y = \frac{8-2x}{-3}$

5) $x = 15 - y$

6) $b = y - mx$

7) $y = \frac{c-ax}{b}$

8) $b = \frac{2A}{h} - c$

9) $L = \frac{V}{WH}$

10) $r^2 = \frac{A}{4\pi}$