

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

*Sec 1 H Unit 1 Day 4 - Solve Literal Equations Classwork*

Last year you learned how to graph a linear equation when it was in the form  $y = mx + b$ , by using the slope ( $m$ ) and the  $y$ -intercept ( $b$ ). But linear equations don't always come in slope-intercept form; sometimes they come in standard form, which looks like  $ax + dy = c$ . When given an equation in standard form, we can use the same procedure to solve for  $y$  as we do when solving a multi-step equation for the variable. However, the answer won't be a single number; it will be an expression. This is called solving a literal equation.

1. Change this standard form of a linear equation into slope-intercept form by solving for  $y$ :  $2x + 3y = 6$
  
2. It's important to pay attention to the instructions when solving literal equations. The same equation from #1 will look completely different if you solve for  $x$  instead of  $y$ . Solve the equation  $2x + 3y = 6$  for  $x$ : (Get  $x$  by itself.)

Given the following equations, solve each for  $x$ . SHOW YOUR WORK.

3.  $5x + 2 = 17$

4.  $y = 2x + 8$

5.  $\frac{2}{3}x = 16$

6.  $\frac{2}{3}x = 16 + y$

7. Write the equation in terms of  $x$ :  $5x + 2y = 17$

8. Write the equation in terms of  $y$ :  $5x + 2y = 17$

Given the following formulas, solve for the indicated variable.

9.  $3x + 2y = 12$  for  $y$

10.  $\frac{1}{2}y + 2x = 4$  for  $y$

11.  $A = \frac{1}{2}(b_1 + b_2)$  for  $b_2$

12.  $A = 2L + 2W$  for  $W$

13.  $A = \pi r^2 h$  for  $h$ .

14.  $A = \pi r^2 h$  for  $r$ .

15. Angles A and B are supplementary angles. Write an equation for this relationship.

16. Angles A and B are complementary angles. Write an equation for this relationship.

17. Angles A and B are alternate interior angles. Write an equation for this relationship.

18. Angles A and B are vertical angles. Write an equation for this relationship.