Coordinate Algebra

Name:_____
Date:_____ Class Period:____

Literal Equations Notes

An _____ is a mathematical sentence that contains an _____ _____ (____).

Example: _____

A _____ is an _____ that states a _____ for the relationship between certain _____.

Example: _____
What does ___, ___, and ___ stand for?

What it means to _____:

-To solve for ___ would mean to get ____ by itself on _____ side of the equation, with no _____'s on the other side. (_____)

-Similarly, to solve for _____ would mean to get ____ by itself on _____ side of the equation, with no _____'s on the other side. (_____)

Literal Equations:

-A _____ _____ is an equation in which the _____ and _____ have been replaced by _____.

Example: ax+b = c

-When _____ literal equations and formulas, you will _____ the same _____ as when solving _____ equations.

-You will always be given an _____ _____ or _____ and asked to solve for a specific _____.

Example: For both equations, solve for x.

$4x + 3 = 15$	$ax + b = c$

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What is similar about solving the two equations?

What is different about solving the two equations?

How is the solution of a literal equation useful?

Example:
In the distance formula, d = rt, d is _____, r is _____ of speed, and t is _____.

How could you find *t* if you knew *d* and *r*?

James will travel 250 miles from Savannah to Atlanta. If he drives at an average speed of 50 miles per hour (mph), how much time will he spend driving?

First: Rewrite the given formula to isolate _____.

Second: Substitute the given information into the _____ formula.

Example:
Use the information above to calculate how much time James will spend driving if he drives 250 miles at an average speed of 25 miles per hour (mph).

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Literal Equations Notes

An equation is a mathematical sentence that contains an equal sign (=).

Example: $y = 3x$

A formula is an equation that states a rule for the relationship between certain quantities.

Example: $A = lw$

What does A, l, and w stand for?

A = Area of a rectangle l = length w = width

What it means to Solve:

-To solve for x would mean to get x by itself on one side of the equation, with no x's on the other side. ($x =$ ____)

-Similarly, to solve for y would mean to get y by itself on one side of the equation, with no y's on the other side. ($y =$ ____)

Literal Equations:

-A literal equation is an equation in which the coefficients and constants have been replaced by variables.

Example: $ax+b = c$

-When Solving literal equations and formulas, you will follow the same steps as when solving specific equations.

-You will always be given an equation or formula and asked to solve for a specific variable.

Example: For both equations, solve for x.

$4x + 3 = 15$ $-3 \quad -3$ $\frac{4x}{4} = \frac{12}{4}$ $x = 3$	$ax + b = c$ $-b \quad -b$ $\frac{ax}{a} = \frac{c-b}{a}$ $x = \frac{c-b}{a}$

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What is similar about solving the two equations?

They involve the same steps to isolate the variable, x.

What is different about solving the two equations?

One solution is not a #; it's an expression

How is the solution of a literal equation useful?

Provides a rule for calculating the solution directly.

Example:

In the distance formula, d = rt, d is distance, r is rate of speed, and t is time.

How could you find *t* if you knew *d* and *r*? Solve for t

James will travel 250 miles from Savannah to Atlanta. If he drives at an average speed of 50 miles per hour (mph), how much time will he spend driving?

First: Rewrite the given formula to isolate t.

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

Second: Substitute the given information into the new formula.

$d = 250$ miles

$r = 50$ mph

$t = \frac{d}{r} = \frac{250}{50} = \boxed{5 \text{ hours}}$

Example:

Use the information above to calculate how much time James will spend driving if he drives 250 miles at an average speed of 25 miles per hour (mph).

$t = \frac{d}{r} = \frac{250 \text{ miles}}{25 \text{ mph}} = \boxed{10 \text{ hours}}$