

Solving Literal Equations

Objectives:

...to solve literal equations for a given variable

Assessment Anchor:



Not Applicable

NOTES

To solve a literal equation:

1. Locate the variable that you want to solve for
2. Follow the rules for solving equations to get that variable all by itself

EXAMPLES

1) Solve for x:

$$x + b = a$$

$$\begin{array}{r} \textcircled{x} + b = a \\ - b \quad - b \\ \hline \end{array}$$

$$\textcircled{x = a - b}$$

.....instructions for what to solve for

.....original equation

.....locate what you are solving for

.....subtract “b” on both sides

.....simplify the equation

2) Solve for d:

$$cd = 10$$

$$\begin{array}{r} \textcircled{cd} = 10 \\ \quad \quad c \\ \hline \end{array}$$

$$\textcircled{d = \frac{10}{c}}$$

.....instructions for what to solve for

.....original equation

.....locate what you are solving for

.....divide both sides by “c”

.....simplify the equation

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3) Solve for a:

.....instructions for what to solve for

$$4a - b = c$$

.....original equation

$$\begin{array}{r} 4a - b = c \\ + b + b \\ \hline 4a = \frac{c + b}{4} \end{array}$$

.....locate what you are solving for

.....add "b" to both sides

.....simplify the equation

.....divide both sides by 4

$$\frac{a = \frac{c + b}{4}}$$

.....simplify the equation

4) Solve for k:

$$k + 20 = t$$

5) Solve for v:

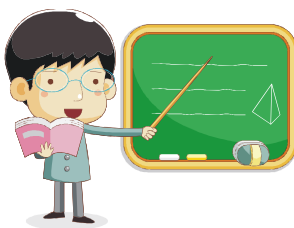
$$\frac{v}{5} = w$$

6) Solve for m:

$$2m - p = 11f$$

7) Solve for y:

$$xyz + a = 10$$



“This idea of solving a literal equation can help us to manipulate formulas (like $P=2L+2W$). It also will be useful when we discuss special forms of two-variable equations.”