

One-Step Equations

goal: isolate the variable = get the variable alone

how: use inverse operations = opposite operations to create zero pairs

Subtraction Property of Equality:

if $a=b$, then $a - c = b - c$

Ex: $x + 7 = 9$

$$\begin{array}{r} -7 \quad | \quad -7 \\ \hline x = 2 \end{array}$$

$$2 + 7 = 9 \checkmark$$

Addition Property of Equality:

if $a=b$, then $a + c = b + c$

Ex: $x - 3 = 2$

$$\begin{array}{r} +3 \quad | \quad +3 \\ \hline x = 5 \end{array}$$

$$5 - 3 = 2 \checkmark$$

One Step Equations

create coefficients of one:

Division Property of Equality:

if $a=b$, then $\frac{a}{c} = \frac{b}{c}$, $c \neq 0$

Ex: $3x = 9$

$$\frac{3x}{3} = \frac{9}{3}$$

$$x = 3$$

$$(3)3 = 9 \checkmark$$

Multiplication Property of Equality:

if $a=b$, then $ac = bc$

Ex: $\frac{w}{5} = -10$

$$5 \left(\frac{w}{5} \right) = 5(-10)$$

$$w = -50$$

$$5 \frac{-50}{5} = -10 \checkmark$$