

Chapter 3

3-1 Solving One-Step Equations with addition or Subtraction.

Equations contain an equal sign, which signifies that two sides are the same in quantity.

Review: Variable - a letter used as a place holder for an unknown value.

When solving for a variable we "undo" all the numbers attached to the variable.

Example: $x - 7 = 9$

In class on
board: Pg 119

19-21

Pg 127

48-52

1. What is attached to the x?
2. By what operation is it attached?
3. How do we "undo" it?

You must perform the same operation to both sides of the equal sign to maintain a balance.

we "undo"
Subtraction
with addition

$$\begin{array}{r} x - 7 = 9 \\ +7 \quad +7 \\ \hline x = 16 \end{array}$$

$$\begin{array}{r} x + 3 = 6 \\ -3 \quad -3 \\ \hline x = 3 \end{array}$$

3-2 One Step w/ Multiplication and Division

The same process applies as before
To "undo" multiplication, you divide.
To undo "division" you multiply.

Example:

$$\begin{array}{r} 8x = 64 \\ \div 8 \quad \div 8 \\ \hline x = 8 \end{array}$$

Example: $\frac{x}{4} = 3.4$

$\rightarrow x = 12$

note: division can also be rewritten as multiplication of a fraction.

Review:

$$\begin{array}{r} +x = + \\ -x = - \\ -x = + \end{array}$$

$$\begin{array}{r} \div = + \\ \div = - \\ - \div = + \end{array}$$

8 is connected to the x by multiplication so to undo it, divide both sides by 8.

3.3 ~~3.3~~ Solving two-step equations.

Two step equations will involve both addition/subt. and multiplication/division.

Recall PEMDAS?

Use to simplify multioperation arithmetic.

When solving Equations we do PEMDAS backward.

Example $18 + 7t = 74$

Both 18 and 7 are connected to the x.

★ 18 by addition

★ 7 by multiplication

Which do we "undo" first?

PE M D AS

Addition First

$$\begin{array}{r} 18 + 7t = 74 \\ -18 \quad -18 \\ \hline \end{array}$$

$$\begin{array}{r} 7t = 56 \\ \div 7 \quad \div 7 \\ \hline t = 8 \end{array}$$

← Suddenly we're back to a simple one-stepper

If you remember PEMDAS backward you'll never get confused.

In class pg 133
33-39.