## **Chapter 3**

# Solving Linear Equations

#### Section 3.1 Solving Equations Using Addition & Subtraction

Inverse Operations

#### **Transformations That Produce Equivalent Equations**

- 1. add the same value to both sides of an equation
- 2. Subtract the same value to both sides of an equation
- 3. simplify both or one side of an equation
- 4. interchange terms on one side of an equation.

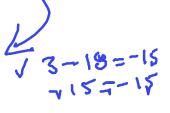
\*\*\* Golden Rule of Solving Equations \*\*\*

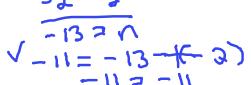
Whatever you do to one side of the equation, you must always do to the other!!!

### Examples

1. 
$$x - 9 = 17$$

2. 
$$x - 5 = |-21|$$





6. The normal high temperature in January in Bismarck, North Dakota is 20° F and the normal low temperature is -2° F. How many degrees apart are the normal high and low temperatures?



7. Match the real life problem with the equation.

a. 
$$x + 7 = 9$$

b. 
$$x - 2 = 7$$

c. 
$$9 - x = 7$$

a

You have x dollars and your friend repays you the \$7 he owes you. You now have \$9. How much did you have originally?

A 9-foot post extends x feet below ground and 7 feet above



A 9-foot post extends x feet below ground and 7 feet above ground. What is the length x buried below ground?



The temperature was  $x^0$  F. It fell  $2^0$  F and is now  $7^0$  F. What was the original temperature?