

### **6.3: Solve Multi-Step Inequalities**

**Goals:** \*Solve Multi-Step Inequalities

\*Identify when an inequality has no solution or any number can be a solution

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#### **To Solve Multi-Step Inequalities:**

**Ex:**  $3x - 7 < 8$

#### **Solve:**

**Ex:**  $2x - 5 \leq 23$

**Ex:**  $6y + 5 \geq 11$

**Ex:**  $-0.6(x - 5) \leq 15$

**Ex:**  $-\frac{1}{4}(p - 12) > -2$

**Ex:**  $6x - 7 > 2x + 17$

**\*RECALL from Ch. 3\***

**Solve each equation:**

**Ex:**  $4(2x + 3) = 2(4x + 5)$

**Ex:**  $3(4x + 6) = 2(6x + 9)$

**The same principle applies with inequalities:**

**This means that:**

**Solve:**

**Ex:**  $14x + 5 < 7(2x - 3)$

**Ex:**  $12x - 1 > 6(2x - 1)$

**Ex:**  $5x - 12 \leq 3x - 4$

**Ex:**  $5(m + 5) < 5m + 17$

**Ex:**  $1 - 8s \leq -4(2s - 1)$

**Ex:**  $-7x + 2 < -5$

**Ex:** A gas station charges \$0.10 less per gallon if a customer purchases a car wash. What are the possible amounts of gallons of gasoline you can buy if you want to spend at most \$20?



**Ex:** You are saving money for a summer camp that costs \$1800. You have \$500 saved so far and 14 more weeks to save. What are the possible average amounts you need to save per week to have the total needed for camp?