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: $3x - 7 < 8$

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

Solve:

Ex: $2x - 5 \leq 23$

Ex: $6y + 5 \geq 11$

Ex: $-6(x + 5) \leq 6$

Ex: $-4(p - 3) > 20$

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

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

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

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

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?