

## Lesson 5-6: Solve Two-Step Inequalities

1. Sample answer: Both involve performing two different operations and using inverse relationships of operations to isolate the variable. The Addition and Subtraction Properties of Inequality are similar to the properties of equality because they maintain the relationship in the equality and inequality. However, the Multiplication and Division Properties of Inequality are different when dividing by a negative value because the inequality symbol must be reversed.
2. Sample answer: A two-step equation has exactly one solution. A two-step inequality has many solutions.
3. They are used to isolate the term with the variable and to find the value of the variable.
4. Sample answer:  $3 + 3x \geq 12$ ;  $x \geq 3$ ; Joe needs to run at least 3 more days.
5.  $x < 5$
6.  $348.25 + 5.5x \leq 1,000$ ;  $x \leq \$118.50$ ; Tomas can spend up to \$118.50 per day.
7.  $x < -45$
8.  $\frac{1}{5}$ ;  $-$ ;  $\leq$   
 $\frac{1}{5}$ ;  $\leq$   
 $\leq$ ; 515
9. b; 7;  $>$   
b;  $>$ ; -2  
b  $>$  -90
10. a.  $x < 2$   
b.  $x > 2$   
c. C
11.  $30 + 0.20x \leq 94$ ;  $x \leq 320$ ; Talia can drive no more than 320 miles per day.
12.  $15.2 + 2w \leq 28$
13. \$28 or less
14.  $598 + 15.75m \leq 850$ ;  $m \leq 16$ ; The water can continue to flow for at most 16 minutes before the pool overflows.
15. a.  $2(x+4) + 2x < 120$   
 $2x + 8 + 2x < 120$   
 $4x + 8 < 120$   
 $4x < 112$   
 $x < 28$   
  
b. Sample answer: Yes;  $x \leq 0$ ; Negative or 0 measurements will not make sense for a rectangle.
16.  $2w + 12 \leq 20$ ;  $w \leq 4$