

**Lesson Summary**

- If a number sentence is true, and the same number is added to both sides of the equation, then the resulting number sentence is true. (*addition property of equality*)
- If a number sentence is true, and the same number is subtracted from both sides of the equation, then the resulting number sentence is true. (*subtraction property of equality*)
- If a number sentence is true, and both sides of the equation are multiplied by the same number, then the resulting number sentence is true. (*multiplication property of equality*)
- If a number sentence is true, and both sides of the equation are divided by the same nonzero number, then the resulting number sentence is true. (*division property of equality*)

**Problem Set**

1. Evaluate the following numerical expressions.

a.  $2 + (-3) + 7$

b.  $-4 - 1$

c.  $-\frac{5}{2} \times 2$

d.  $-10 \div 2 + 3$

e.  $\left(\frac{1}{2}\right)(8) + 2$

f.  $3 + (-4) - 1$

2. Which expressions from Exercise 1 are equal?

3. If two of the equivalent expressions from Exercise 1 are divided by 3, write an if-then statement using the properties of equality.

4. Write an if-then statement if  $-3$  is multiplied to the following equation:  $-1 - 3 = -4$ .

5. Simplify the expression.

$$5 + 6 - 5 + 4 + 7 - 3 + 6 - 3$$

Using the expression, write an equation.

Rewrite the equation if 5 is added to both expressions.

Write an if-then statement using the properties of equality.