

## Lesson 5-1: Write Two-Step Equations

1. An equation can use multiple operations to show that a value is equivalent to another value after the given operations have been performed. It shows how the numbers and variables in a situation are related.
2. No; Sample answer: The right side of both equations is 6, but on the left side of the first equation, 2 is added to one fifth of  $x$ . In the second equation, 2 is added to  $x$  before multiplying by  $\frac{1}{5}$ .
3. You can think about how the quantities are related. For example, if one quantity is 3 more than another, you can subtract 3 from the original quantity or add it to the second to show how the two are related. When more than one operation is required, you need to determine which operation is applied to the result of the other.
4. Sample answers:  $\frac{(r-5)}{2} = 36$   
 $r - 5 = 2 \cdot 36$
5. Sample answer: Scott picked  $n$  tomatoes from his tomato plant. Graham picked 5 times as many but threw 6 of them away because they were rotten. Graham ended up with 19 tomatoes.
6. Sample answer:  $\frac{2}{3}h - 5 = 11$
7. 15; 0.38;  $g$
8.  $\frac{x}{4} - 3 = 12$
9.  $3n + 7 = 37$
10. Sample answer:  $4(12.75 + t) = 61$
11.  $4.2c - 0.55 = 3.23$
12. Sample answer: Let  $g$  represent the number of eggs a farmer has collected. The farmer packs the eggs into cartons of 6. She is 3 eggs short of packing 15 full cartons.
13. Sample answer: The situation would change to match the new denominator of 12. So the egg cartons would hold 12 eggs instead of 6 eggs.
14. a.  $9w + 12 = 48$   
  
b. Sample answer: The equation will be similar to the one in part A, but instead of  $9w$ , use  $6d$ , where  $d$  represents the number of dollars saved per week. The equation could be  $6d + 12 = 48$  or  $d = \frac{48 - 12}{6}$ .
15. a.  $L - 0.4(2) = 80.2$  or  
 $L - 80.2 = 0.4(2)$  or  
 $80.2 + 0.4(2) = L$   
  
b. No; Sample answer: The equations must be equivalent. They may look different, but all equations can be rewritten as  $L = 80.2 + 0.4(2)$ .
16. a. Sample answer: 13 less than 5 times a number is 12  
  
b. 5
17. a.  $135 = 3(30) + 3r$

## Lesson 5-1: Write Two-Step Equations

b. Sample answer: Three boxes contain a total of 135 raisins. Let  $r$  represent the number of raisins left in each box after people ate 30 raisins from each box.