



# 7-2 Solving Two-Step Equations (Pages 334–337)

To solve an equation with more than one operation, use the work backward strategy and undo each operation. This means you will follow the order of operations in *reverse* order.

## EXAMPLES

**Solve each equation. Check your solution.**

**A**  $4a + 12 = 40$   
 $4a + 12 - 12 = 40 - 12$  Subtract to undo the addition.  
 $\frac{4a}{4} = \frac{32}{4}$  Divide to undo the multiplication.  
 $a = 8$   
 Does  $4(8) + 12 = 40$ ?  
 $32 + 12 = 40$   
 $40 = 40$  True  
 The solution is 8.

**B**  $\frac{g}{5} - 8 = 7$   
 $\frac{g}{5} - 8 + 8 = 7 + 8$  Add to undo the subtraction.  
 $\frac{g}{5} = 15$   
 $\frac{g}{5} \cdot 5 = 15 \cdot 5$  Multiply to undo the division.  
 $g = 75$   
 Does  $\frac{75}{5} - 8 = 7$ ?  
 $15 - 8 = 7$  Do the division first.  
 $7 = 7$  True  
 The solution is 75.

### Try These Together

**Solve each equation. Check your solution.**

1.  $55 = 4x + 5$                       2.  $3y - 6 = 3$                       3.  $4 - 4b = -8$

*HINT: Work backward to undo each operation until the variable is alone on one side of the equation.*

## PRACTICE

**Solve each equation. Check your solution.**

4.  $-5 - 2t = 15$       5.  $-4y + 2 = 7$       6.  $1.5 = 0.3 + y$       7.  $14 = 3 + \frac{a}{2}$   
 8.  $-\frac{3x}{7} = 21$       9.  $\frac{2}{3}n - 3 = 8$       10.  $\frac{q - 15}{4} = 4$       11.  $\frac{6 - x}{-6} = -6$   
 12.  $8 = \frac{n + 5}{-3}$       13.  $\frac{b}{-3} - 8 = -12$       14.  $\frac{5 + x}{-4} = -4$       15.  $\frac{-x - (-3)}{15} = 15$

16. **Consumerism** Carlos bought 5 boxes of floppy disks for his computer. He also bought a paper punch. The paper punch cost \$12. The boxes of floppy disks were all the same price. If the total cost before tax was \$27, how much did each box of floppy disks cost?



17. **Standardized Test Practice** Solve the equation  $\frac{-4 - 2x}{12} = 12$ .

- A** -56                      **B** 56                      **C** 112                      **D** 108

15. -102   16. \$3   17. A Answers: 1. 12.5   2. 3   3. 3   4. -10   5. -1   6. 1.2   7. 22   8. -49   9. 16   10. 35   11. 30   12. 43   13. 12   14. 43
--