

## Practice

### Check

5. Model each equation. Then solve it using concrete materials.

Use algebra to record each step you take. Verify each solution.

a)  $2x - 1 = 7$

b)  $11 = 4a - 1$

c)  $5 + 2m = 9$

d)  $1 = 10 - 3x$

e)  $13 - 2x = 5$

f)  $3x - 6 = 12$

6. Use algebra to solve each equation. Verify the solution.

a)  $4x = -16$

b)  $12 = -3x$

c)  $-21 = 7x$

d)  $6x = -30$

7. Check each student's work.

Rewrite a correct and complete algebraic solution where necessary.

- a) Student A:

$$-3x + 15 = 30$$

$$-3x + 15 - 15 = 30 + 15 - 15$$

$$-3x = 30$$

$$\frac{-3x}{-3} = \frac{30}{-3}$$

$$x = -10$$

- b) Student B:

$$7 = 1 + 2n$$

$$7 - 1 = 1 - 1 + 2n$$

$$8 = 2n$$

$$\frac{8}{2} = \frac{2n}{2}$$

$$4 = n$$

$$n = 4$$

- c) Student C:

$$3 + 2t = 4$$

$$3 + 2t - 3 = 4 - 3$$

$$2t = 1$$

$$t = 2$$

- d) Student D:

$$-5 = -8 + 5f$$

$$-5 + 8 = -8 + 8 + 5f$$

$$3 = 5f$$

$$\frac{3}{5} = \frac{5f}{5}$$

$$\frac{3}{5} = f$$

$$f = \frac{3}{5}$$

### Apply

8. Solve each equation.

Verify the solution.

a)  $2x + 5 = -7$     b)  $-3x + 11 = 2$

c)  $-9 = 5 + 7x$     d)  $18 = -4x + 2$

9. Navid now has \$72 in her savings

account. Each week she will save \$24.

After how many weeks will Navid have a total savings of \$288?

- a) Write an equation you can use to solve the problem.

- b) Solve the equation.

When will Navid have \$288 in her savings account?

- c) Verify the solution.



**10. Assessment Focus**

The Grade 8 students had an end-of-the-year dance.

The disc jockey charged \$85 for setting up the equipment, plus \$2 for each student who attended the dance.

The disc jockey was paid \$197.

How many students attended the dance?

- Write an equation you can use to solve the problem.
- Solve the equation.
- Check your answer and explain how you know it is correct.



**11.** Solve each equation.

Verify your solution.

- a)  $-8x + 11 = 59$     b)  $11c + 21 = -34$   
c)  $23 = -5b + 3$     d)  $-45 = 6a - 15$   
e)  $52 = 25 - 9f$     f)  $-13 + 4d = 31$

**12.** Solve each equation.

Verify your solution.

- a)  $3n + 7 = 8$     b)  $6x + 6 = 15$   
c)  $-23 = 5p - 27$     d)  $5p + 6 = 7$   
e)  $8e - 9 = -3$     f)  $-17 + 10g = -9$