

Name \_\_\_\_\_

Instructor \_\_\_\_\_

Date \_\_\_\_\_

**SHOW YOUR WORK!**

The skills needed to complete this worksheet are required for our work in Chapter 2. Please seek help as soon as possible if you have difficulty completing any of these sections.

**Learning Objectives**

- A. Simplify expressions by multiplying and combining like terms.
- B. Identify solutions of equations.
- C. Use the addition and/or the multiplication property to solve equations.
- D. Find the least common multiple (LCM) of a list of numbers.
- E. Write equivalent fractions.
- F. Translate phrases into expressions and sentences into equations.

**OBJECTIVE A: Simplify expressions by multiplying and combining like terms.** (See Section 1.8)

Simplify each expression.

1.  $3a - a + 4a$
2.  $3x - 5 + 5x - 8$
3.  $-(-5m + 6n - 2p)$
4.  $-2(3b - 4) - 6b$
5.  $10a - 5 - 2(a - 3)$
6.  $-3(x - 3) + 6(5x - 3)$

**OBJECTIVE B: Identify solutions of equations.** (See Example 8, p. 23)

7. Is 5 a solution of  $2x + 3 = 15$ ?
8. Is 27 a solution of  $\frac{-x}{3} = -9$ ?

**OBJECTIVE C: Use the addition and the multiplication properties to solve equations.** (See Sections 2.1–2.2)

Solve each equation.

9.  $-25 = -17 + x$
10.  $8.1 + y = 13.9$
11.  $-15x = 45$
12.  $-5y + 8 = -42$
13.  $-\frac{2}{3}a = 12$
14.  $\frac{x}{-2} = -4$
15.  $7 - b = 20$
16.  $4a - 2 = 3a + 6$

**OBJECTIVE D: Find the least common multiple (LCM) of a list of numbers.** (See Examples 7–9, pages R-5–R-6)

17. Find the LCM of each list of numbers.

a) 4, 6, 8

b) 3, 6, 9

c) 2, 3, 7

d) 4, 8, 14

**OBJECTIVE E: Write equivalent fractions.** (See Examples 19 and 20 on page R-14)

18. Write each fraction as an equivalent fraction with the given denominator.

a)  $\frac{4}{5} = \frac{\quad}{20}$

b)  $\frac{2}{7} = \frac{\quad}{28}$

**OBJECTIVE F: Translate phrases into expressions and sentences into equations.** (See Examples 9 and 10, pages 23–24)

19. Write each phrase as an algebraic expression. Use  $x$  to represent the unknown number.

a) The product of a number and  $-1$

b) The difference of 9 and some number

c) A number subtracted from 6

d) The quotient of 2 and a number

e) Five times the sum of a number and 3

f) Four less than a number

20. Write each sentence as an algebraic equation. Use  $x$  to represent the unknown number.

a) Twice a number added to  $-8$  is 24.

b) Ten subtracted from a number is  $-25$ .

c) Seven more than the product of four and a number is nineteen.

d) The quotient of a number and twelve is negative four.

e) Three times the sum of a number and  $-6$  is 36.

f) Eight times the difference of a number and 5 equals 32.