DUKE / BINGHAMTON

Name _____ Date _____ Class _____

LESSON 6-1

Algebraic Expressions

Practice and Problem Solving: D

Write an algebraic expression for each phrase by filling in the blanks. The first is done for you.

1. Fifty decreased by two tenths of *m*.

   Write the expression for "Fifty decreased by"

   50 –

   Two tenths = 0.**2**

   0.**2** "of *m*" is written as

   0.**2** × *m*, or

   0.**2***m*

   Put the steps together.

   "Fifty decreased by" **50 –**

   "two tenths of *m*" **0.2*m*** or

   50 – 0.2*m*

2. Ten minus three tenths of *n*.

   Write the expression for "Ten minus"

   _____

   Three tenths = 0._____

   Three tenths of *n* is written as

   0._____ _____ *m*, or

   0._____*n*.

   Put the steps together:

   "Ten minus than three tenths of *n*"

   _____

Use the Distributive Property. Simplify the answer. The first one is done for you.

3. $\frac{1}{4}(6x+14y)=$

   $\frac{1}{4}\cdot 6x+\frac{1}{4}\cdot 14y=$

   $\frac{6}{4}x+\frac{14}{4}y=\frac{3}{2}x+\frac{7}{2}y$

4. $\frac{1}{6}(15a+20b)=$

   _____ • _____ + _____ • _____ =

   _____ + _____ = _____ + _____

Factor. The first one is done for you.

5. $5x+10y+30z=$

   5 • x + **5** • $2y$ + **2** • **3** • **5**z =

   5 • ($x+2y+$ **6**z)

6. $7a+21b+42c=$

   ___ • a + ___ • $3b$ + ___ • ___ • ___c =

   _____ • ($a+3b+$ _____c)

7. $4x+12$

   _____

8. $6s+18t+3w$

   _____

Name _____ Date _____ Class _____

LESSON 6-1

Algebraic Expressions

Reading Strategies: Compare and Contrast

This lesson shows how the **Distributive Property** is used with expressions. It also presents the idea of **factoring**, which is related to the Distributive Property in some types of problems. Knowing how the two concepts are alike and how they are different can help you solve problems. The problems illustrate the two concepts.

Problem 1

Thirty-five percent of the revenue produced at the auction will go to the charity. The morning participants spent an average of $50 each. The afternoon attendees spent an average of $75 each.

a. Write an algebraic expression for the amount contributed to the charity by all participants. Use *m* for morning participants and *a* for afternoon participants.

_____

b. Use the Distributive Property to simplify the expression in part **a**.

_____

c. How do these expressions differ in the information they convey?

_____

Problem 2

Twenty customers bought the portable drill when it was on sale. Twelve of the customers also bought the charger that goes with it.

a. Write an algebraic expression for how much money was spent on the drills and chargers.

_____

b. Factor the expression in part **a**. What does the factored expression represent?

_____

c. How do these expressions differ in the information they convey?

_____