1.) Write a variable expression for each statement.

a. Eight less than the quotient of five and a number.

$\frac{5}{x} - 8$

b. The difference of twelve and a number.

$12 - x$

c. Three more than the product of a number and ten.

$3 + x \cdot 10$ $10x + 3$

2.) There are 5280 feet in a mile. Write an equation for the number of feet in an unknown number of miles. Define your variables.

EQ: $x = 5280y$

Variables: $y = mi$

$x = ft.$

3.) Simplify.

$5 - |4 - 7| + 2(3 - 6((7 - 1)^2 \div 6 - 4)^3 \div 4)$

$(36 \div 6 - 4)$

$(2)^3$

$(3 - 6(8) \div 4)$

$3 - 48 \div 4$ $\quad 3 - 12$

$5 - |4 - 7| + 2(-9) = 5 - 3 + 2(-9)$

$= 5 - 3 - 18 = -16$

4. Write an equation to model the data in the table.

| Money Spent | 2 | 3 | 6 | 10 |
|---|---|---|---|---|
| Gallons of Gas purchased | 5.00 | 7.50 | 15.00 | 25.00 |

EQ: $2.50g = m$

$g = \frac{m}{2.50}$

Variables: $m = \$$

$g = $ gal of gas

5.) Is the statement true or false? If it's false, provide a counterexample: All negative numbers are integers

False
counter: any neg decimals

Answers to Hwk #6:

1. Rational #, Integer
2. Rational #
3. Rational #
6. Rational #, Integer
9. Rational #
10. Irrational #

14. rational numbers
15. whole numbers

22. True  59. $a$  60. 28  62. 5  73. $-6$

**Name the set(s) of**

**1.** $-1$

**6.** $-\frac{20}{4}$

**Is each state**

**19.** All integ

**20.** All nega

**21.** Every m

**22.** No posit

**14.** your sho

**15.** the numb

**16.** a temper

**17.** the numb

**18.** the numb

**59.** $|a - a|$

**60.** $|24|$ +

**62.** $|-6 +$

**Evaluate**

**73.** $-|c$

Section 1-7

Simplify. $4(x + 11) = 4x + 44$

The Distributive Property.

## Key Concepts

**Property** **Distributive Property**

For every real number $a$, $b$, and $c$.

$a(b + c) = ab + ac$ $\quad (b + c)a = ba + ca$

$a(b - c) = ab - ac$ $\quad (b - c)a = ba - ca$

**Examples** $5(20 + 6) = 5(20) + 5(6)$ $\quad (20 + 6)5 = 20(5) + 6(5)$

$9(30 - 2) = 9(30) - 9(2)$ $\quad (30 - 2)9 = 30(9) - 2(9)$

Simplify.

1. $5(x + 3) =$ $5x + 15$

2. $(2R - 7)6 =$ $12R - 42$

3. $-4(E+2) =$ $-4E-8$

4. $-(8Q-9) =$ $-8Q+9$

5. $\frac{1}{4}(12G+28) =$ $3 \quad 7 \quad 3G+7$

6. $\frac{5}{8}(24c-40) =$ $15c-25$

7. $\frac{7}{12}(5A + 8) =$ $\frac{35}{12}A + \frac{14}{3}$

8. $-3(2Q - 3X + 7Y - Z) =$ $-6Q + 9X - 21Y + 3Z$

9. $4x(w + 6 - a) =$ $4xw + 24x - 4xa$

10. $4e(2e + 5) =$ $8e^2 + 20e$

11. $5C(2C^2 + 4C + 10) =$ $10C^3+20C^2+50C$

12. $7w - 2(3w + 8) =$ $7W-6W-16$

$W-16$

Simplify each using the Distributive Property:

1. 6(4w - 5) = $24W-30$

2. -7(10 - 3c) = $-70+21C$

3. -(8k +9) = $-8K-9$

4. (2P + 5)8 = $16P+40$

5. $\frac{1}{4}(8a + 36) =$ $2a + 9$

6. $\frac{7}{6}(12g - 9) =$ $14g - \frac{21}{2}$ $\frac{63}{6}$ $7 \cdot \frac{9}{6} \overset{\div 3}{\underset{\div 3}{=}} 7 \cdot \frac{3}{2}$

7. $-6m^1(3m^1 + 4) =$ $-18m^2 - 24m$ $6b^2(2b^3 + 7b) =$ $12b^5 + 42b^3$

9. $5xy(4x^2y - 6y^3) =$ $20x^3y^2 - 30xy^4$

HW #8 - pg. 50 #15-20, 27-30

IXLs for this week: A.8 & I.7