**Variables & Expressions Homework**

**Directions:** Be sure to show all work, communicate your thought process, and justify your reasoning.

Remember to check that your answers are complete, correct, and reasonable.

1. Identify the variables, constants, and coefficients in each expression. Also state how many terms are in each expression.

a. 4x + 2y – 8 b. 4r – 3r2 + s – 9

Variable(s): \_\_\_\_\_\_\_\_\_ Variable(s): \_\_\_\_\_\_\_\_\_

Constant(s): \_\_\_\_\_\_\_\_\_ Constant(s): \_\_\_\_\_\_\_\_\_

Coefficient(s): \_\_\_\_\_\_\_ Coefficient(s): \_\_\_\_\_\_\_

Number of terms: \_\_\_\_ Number of terms: \_\_\_\_

*Write an algebraic expression to model each situation.*

2. ten less than a number 3. Three more than twice a number

4. the sum of 3 and 10% of a number 5. The quotient of a number and four

6. one less than triple a number 7. Alan is four years younger than Joe

8. the difference of Jake and Bob’s ages is 3 9. The combination of seven and half of a number

10. the amount of money in a bag with 11. Ben has $2 less than Pam does

nickels and dimes

12. The width of a rectangle is twice as large as 13. The number of hours you have left

the length in the day after sleeping for some

14. the amount of money in a bag with only dimes 15. The amount of money in a bag with nickels and quarters

16. A ticket to a football game costs f dollars. A soda at the football game costs s dollars. Write an expression that can be used to find the total cost of a ticket to the game and a soda per person for a family of five people.

17. The entry fee for one ticket to a carnival is h dollars. It costs r dollars for every ride you go on. You decide to also donate $10 for a children’s hospital foundation. Write an expression to represent how much you will owe in total if you go on 8 rides at the carnival.

18. ***Error Analysis:*** A student wrote “8 – x” to represent “eight less than a number.” Explain why this is incorrect.

19. ***Fun Option!*** *Write an equation that could help you solve the problem:* This weekend, you went to the mall with $55. You spent $8.50 on lunch and bought some video games. If video games were on sale for $10 each, and you had $6.50 left at the end of the day, how many video games did you buy?

**Looking Ahead:**



Perform each operation.

a. 4 – 8 b. -3 + 10 c. -2 \* -1 d. 5 \* -8

Selected Solutions

1. a. Variable(s): x, y Constant(s): -8 Coefficients: 4, 2 Terms: 3

3. 2n + 3

5. n / 4

7. a = j – 4

9. 7 + ½x

11. b = p – 2

13. 24 – h

15. .05n + .25q

17. h + 8r + 10

19. 55 – 8.50 – 10v = 6.50 (v represents the number of video games you purchased)

OR 46.5 – 10v = 6.50