Review: Unit 4 Algebraic Reasoning

1. When finding the value of the following expression, which part should you work on first? Why?

   9 X (12 - 4)

2. Simplify this expression: 2 [9 - 2(3 + 1)]

3. Is (3 + 4) x 2 + 5 x (1 + 6) an expression or an equation? How do you know? Simplify.

4. What is the value of the expression (Simplify)

   7 X [(9 + 1) - 5]

5. Which of these expressions does NOT have the same value as

   (12 - 9) X (4 + 6)

   A. 12 X (4 + 6) - 9(4 + 6)
   B. 6(12 - 9) + 4(12 - 9)
   C. (12 X 4) - 9 - 6

6. Which of these expressions has the same value as

$$60 - (45 - 4)$$

A. 60 - 41
B. 15 - 4
C. 60 - 45 - 4

7. Mrs. Gomersall spent $53 from her checking account to buy a new pencil sharpener for her classroom and now has $97 left. Which number sentence could be used to find, *c,* the amount of money Mrs. Gomersall had in her checking account before she bought the pencil sharpener?

A. $97 + c = 53$
B. $c - 53 = 97$
C. $97 - 53 = c$
D. $53 - c = 97$

8. Ms. Tollette really wants to replace her Android phone with the new iPhone. She saved $600 last year by taking her lunch to school every day last year and $300 from tutoring students. Ms. Tollette plans to save up the rest of the money by working at the high school football games where she earns $20 per hour for each 3 hour shift she works at each of the 5 home football games. What is *i,* the cost of the iPhone Ms. Tollette wants to buy?

$$\$600 + \$300 + 5 (3 \text{ X } \$20) = i$$

9. Simplify the following expression.

$$[14 (5 - 2) \text{ x } 4 - 2] \div 2$$

10. In the summer, Mrs. Halata's daughter earns $70 per week through dog sitting and her allowance. She makes $30 per week watching Fido and $10 per week watching Bingo. Mrs. Halata also gave her daughter her allowance. The equation below can be used to find how much money her daughter received each week through her allowance. Solve the equation.

$$70 = 30 + 10 + \_\_\_\_\_$$

11. What do parentheses mean in a numerical expression?

12. When given the numeric expression 6 (4 + 9) - 4 what would you do first to simplify the expression?

13. Mrs. Karjooy and Mrs. Correll are raising money so that they can take all 5th grade students on a really cool science field trip to the moon. They sold 345 computerized lollipops for $13 each and 44 boxes of digital cookies for $15 each. Determine the amount of money they were able to raise to go to the moon, m, by solving the equation.

$$m = (13 \times 345) + (15 \times 44) - 1{,}150$$

14. The Lego corporation has factories all over the country. There are 15 factories in Texas with 300 employees each. In California there are 12 factories with 200 employees each and in New York, there are 11 factories with 400 employees each. How many employees are there in all of the Lego factories?

15. What is the difference between an expression and equation?

16. If 8s = 56, what is the value of s?

17. Which of these is an equation?

    A. 3 + x + 12
    B. 3 + x = 12
    C. 3 + x - 12
    D. 3 + x

Sixth Grade Skills - Not on the test

18. Give an equivalent expression for each of the following expressions

    4m + 2m
    5(6s)
    7k-6k

19. What is the value of this expression?

$$2 + 3\,(7 - 4)^2$$

20. Solve. $2^4 \times 4^2 =$