

Name: Key  
Date: \_\_\_\_\_

Unit 1 Review

I. Write the expression

1. Triple a number subtracted from ten.  $3x - 10$
2. The difference of twice a number and thirteen.  $2x - 13$
3. Eight times a number plus five.  $8x + 5$
4. The quotient of a number and one  $\frac{x}{1}$
5. The sum of quadruple a number and negative four  $(4x + -4)$

II. Simplify the expression

6.  $-3(2x - 5)$   $-6x + 15$
7.  $\frac{30x - 10}{5}$   $6x - 2$
8.  $2(x - 4) - 6 + 4x$   $6x - 14$   
 $2x - 8$
9.  $6x(4x + 3)$   ~~$24x^2 + 18x$~~   $24x^2 + 18x$
10.  $x(4x + 11)$   
 $4x^2 + 11x$

III. Write and Simplify the Expressions

11. A fourth of the difference of twelve and eight times a number.

$$\frac{12 - 8x}{4} = \boxed{3 - 2x}$$

12. Nine times a number subtracted from the same number

~~$x - 9x$~~   
 $\boxed{-8x}$

13. Ten subtracted the sum of triple a number and the same number

~~$(3x + x) - 10$~~   $\boxed{4x - 10}$

14. The sum of double a number and six is divided by two

$$\frac{2x + 6}{2} = \boxed{x + 3}$$

15. Seven times the difference of a number and nine.

$$7(x - 9)$$
$$\boxed{7x - 63}$$

V. Writing Equations

17. Find the cost of school lunches (adult and student) for three different area schools. Then create a table of values. Also find the number of students and teachers at each school. Write an expression based on the table for each of the following:

Schools	Student	Adult
A PHS	\$3.00	\$4.00
B SCHS	\$5.50	\$6.50
C MHS	\$7.25	\$8.00

A. Cost of feeding 25 students and 10 adults at PHS, SCHS, and MHS:

a. PHS:  $25(3) + 10(4) = \$115$

b. SCHS:  $25(5.50) + 10(6.50) = \$202.50$

c. MHS:  $25(7.25) + 10(8) = \$261.25$

B. Cost of feeding 61 adults and 75 students at PHS, SCHS, and MHS:

a. PHS:  $61(4) + 75(3) = \$469$

b. SCHS:  $61(6.50) + 75(5.50) = \$782$

c. MHS:  $61(8) + 75(7.25) = \$1031.75$

C. Create an equation for feeding each of the schools' students and teachers:

a. PHS:  $3x + 4y$

b. SCHS:  $5.5x + 6.5y$

c. MHS:  $7.25x + 8y$

VI. Solving Real Word Problems

18. Greg went to the Apple Store to purchase gifts for his family. He bought two

phone cases for \$23.50 each, three Apple TVs for \$45.00 each and one printer for \$78.98. If sales tax is 9%, what was the total purchase price?

$$2(23.50) + 3(45) + 78.98$$

$$260.95 (1.09) = \boxed{284.44}$$

19. Ms. Elliott went shopping at Bloomingdales. She bought two shirts for \$29.90 a piece, one skirt for \$37.89 and three pairs of boots on sale for \$51.25. If sales tax

is 7.5%, what was her total purchase price?

$$2(29.90) + 37.89 + 3(51.25)$$

VII. Distributive Property and Factoring

i. Distributive Property

$$251.44 (1.07) = \boxed{269.04}$$

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

21.  $5(x-17) + 11$   $5x - 85 + 11 = \boxed{5x - 74}$

22.  $13x + 7 - 11x + 17$   $\boxed{2x + 24}$

23.  $28r + 3(2r + 15)$   
 $6r + 45$   $\boxed{34r + 45}$

24.  $-(10x - 4) + 14$   
 $-10x + 4$   $\boxed{-10x + 18}$

ii. Factoring

25.  $2x-10$   $2(x-5)$

26.  $14x+7$   $7(2x+1)$

27.  $20x+25x$   $5x(4+5) = 5x(9)$

28.  $100-20x$   $10(10-2x)$