**Unit 3: Expressions Post-Test Review ~ Math 6/7**

1. Identify each part of the expression. Write “N/A” if the part is not in this expression: 9(3x² + 4)

a. coefficient: **3** b. constant: **4**

c. variable: **x** d. exponent: **2**

e. quotient: **N/A** f. product: **3x2; 9(3x2 + 4)**

g. factors: **9 and** **(3x2 + 4); 3 and x2** h. sum: **(3x2 + 4)**

1. What does it mean when a number is “squared” or “cubed?”

**A number that is “squared” is raised to the second power (a square is 2-dimensional). A number that is “cubed” is raised to the third power (a cube is 3-dimensional).**

1. Evaluate the expression. Show EACH step: 10² - 3(14 – 2 + 8) ÷ 5

10² - 3(12 + 8) ÷ 5

10² - 3(20) ÷ 5

10² - 3(20) ÷ 5

100 - 3(20) ÷ 5

100 - 60 ÷ 5

100 – 12

**88**

1. Write using exponents AND solve: 5 • 5 • 5 • 5 = **54 = 625**
2. If m = 5, evaluate the expression: 4m² + 6m **130**
3. Apply the distributive property to simplify 9(y – 3) **9y - 27**
4. Simplify this expression: 8x³ + 4x² + 12x³ - x² **20x³ + 3x²**
5. The cost of renting a moving truck is $39.99 plus an additional $0.50 for each mile driven. Write an expression to represent the cost of renting the truck for *m* miles.

**39.99 + 0.50m**

1. Give an example equivalent expressions using:
2. commutative property: **4 + 5 = 5 + 4**

b. distributive property: **8(2a + b) = 16a + 8b**

c. associative property**: 9(ab) = (9a)b**

1. The formula V= *lwh* is used to find volume of a rectangular prism. Solve for the volume if l = 14, w = 2.5, and h = 6.2.

**217 (cubic units)**

1. Use the formula V = s3 to find the volume of a cube in which s =  inch.

**1/8 inches3**

1. Factor the expression 8z + 480. **8(z + 60)**
2. The expression 100 + 5*n* can be used to find the total price for a field trip to the science museum, where n = the number of students. Determine the cost for 250 students to attend the trip.

**$1,350**

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1. Evie ordered 3 “Number 1” combos, each with 1 burger, 1 order of fries, and 1 Coke. Parker ordered a “Number 1” combo, along with an extra Coke. Mrs. Bothers ordered 2 “Number 1” combos, but she upgraded the Cokes to milkshakes. Write an expression for their combined orders, if b = burgers, f = fries, c = Cokes, and m = milkshakes.

**6b + 6f + 5c + 2m**\_\_

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1. Write the following statement as an expression:

six less than the product of 4 and x **4x - 6**

1. Nicolas and 2 friends order a large pizza for $19.99, an order of wings for $7.59, and *n* medium drinks for $1.50 each. If they split these costs evenly, write an expression can be used to find the amount each boy should pay.



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1. Laurel bought *b* blouses that were originally priced at $24.50 each. Each blouse was on sale for $6.50 off the original price when she bought them. Which expression can be used to find the total sale price of *b* blouses?

A. 24.50(b – 6.50) **B. b(24.50 – 6.50)**

C. 24.50b – 6.50 D. 24.50 – 6.50 - b

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1. A family of four (2 adults and 2 kids) is going to the pumpkin patch. Regular admission is $10.75 for adults and $8 for kids. They also have a coupon for 25% off kids’ admission. How much will they pay to get in?

**$33.50**

1. Evaluate each expression: 80 = **1** 1,4000 = **1** (¼)0 = **1**

Explain/show the reasoning behind each answer above.

**There is a pattern – every time the exponent increases by 1, the base is multiplied again. If you work backwards, however – decreasing the base by 1, the base is DIVIDED. Anything to the 1st power is that number. So when the exponent decreases from 1 to 0, the base is divided by itself – always giving an answer of 1.**

