

Math 6 – Unit 3: Expressions Review

1) Identify each part of the expression. Write "n/a" if the part is not in the expression: $9(3x^2 + 4)$

a) coefficient: 3 b) constant: 4

c) variable: x d) exponent: 2

e) quotient: n/a f) product: $9(3x^2+4), 3x^2$

g) factors: $3, x^2; 9, (3x^2+4)$ h) sum: $3x^2+4$

i) difference: n/a

2) What does it mean when a number is squared or cubed?

Give an example of each. Squared = exponent is 2,

such as $5^2 = 5 \cdot 5 = 25$

Cubed = exponent is 3, such as $5^3 = 5 \cdot 5 \cdot 5 = 125$

3) Evaluate the expression. Show EACH step. $10^2 - (14 - 2 + 7)$

$$10^2 - (12 + 7)$$

$$10^2 - 19$$

$$100 - 19$$

$$\textcircled{81}$$

4) Write using exponents AND solve? $5 \cdot 5 \cdot 5 \cdot 5 =$

$$5^4 = 625$$

5) If $m=5$, evaluate the expression: $4m^2 + 6m$

$$4 \cdot 5^2 + 6 \cdot 5$$

$$4 \cdot 25 + 6 \cdot 5$$

$$100 + 30$$

$$130$$

- a) Apply the distributive property to write an equivalent expression to $9(y - 3)$.

$$9y - 27$$

- 7) Combine like terms to simplify this expression:

$$\textcircled{8}x^3 + 4x^2 - \textcircled{12}x^2 - x^2 \quad 20x^3 + 3x^2$$

- 8) 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.

$$39.99 + 0.50m$$

- 9) Give an example of each of the properties below:

a) commutative property: $1 + 3 = 3 + 1$

b) distributive property: $4(a + b) = 4a + 4b$

c) associative property: $7 \cdot (3 \cdot a) = (7 \cdot 3) \cdot a$

- 10) Write an expression for the product of 6 and c . $6c$

- 11) Write an expression for 22 less than y . $y - 22$

- 12) Which expression is not equivalent to the others?

a) $3(4 + 2)$ $\textcircled{\text{b}}$ $3(4) \times 3(2)$ c) $3(4) + 3(2)$ d) $12 + 6$

- 13) The formula $A = lw$ can be used to find the area of a rectangle. Ms. Julien is mowing a rectangular lawn that is 9.5 yards long and 6 yards wide. What is the area of the lawn?

$$A = l \cdot w$$

$$9.5 \cdot 6$$

$$57$$

5) The expression $12n + 75$ can be used to find the total price for n students to take a field trip to the science museum.

Evaluate the expression $12n + 75$ if there are 25 students attending the field trip. ($n = 25$).

$$12n + 75 = 12 \cdot 25 + 75$$
$$300 + 75 = 375$$

Write a phrase for the expression $\frac{n}{7}$. the quotient of n and 7

Which expression represents the phrase, "eight less than the product of six and b ?"

- a) $8 - 6b$ b) $6 - b + 8$ **c) $6b - 8$** d) $6b \times 8$

18) Evaluate 10 squared. $10^2 = 10 \cdot 10 = 100$

19) When you combine like terms, you must look for terms with the same variable AND exponent. Choose the expression that is equivalent to $4m + 4m^2 - m + 6m^2 + 2m^2$

- a) $15m^2$ b) $17m^2$ **c) $12m^2 + 3m$** d) $10m^2 - 3m$

20) Silly Sally has a friend named Cuckoo for Cocompuffs. He also does not understand how to apply the order of operations, and has made a mistake in the problem below. Find the mistake and explain in THREE COMPLETE SENTENCES what the mistake is and what should have been done. Then write what the correct answer really is.

Sally evaluated "2 cubed" incorrectly. It equals $2 \cdot 2 \cdot 2$, which is 8, not 6.

$$125 - 15 \cdot 2^3 + 5$$

$$125 - 15 \cdot 6 + 5$$

$$125 - 90 + 5$$

$$35 + 5$$

$$40$$

$$125 - 15 \cdot 2^3 + 5$$

$$125 - 15 \cdot 8 + 5$$

$$125 - 120 + 5$$

$$5 + 5$$

$$\textcircled{10}$$