Name_____

Unit 1 Test Review

Exponents

3^5

base → 3 ← exponent

repeated multiplication; multiply the base number by itself the number of time of the exponent

Write 8^3 as products and evaluate it.

8x8x8 = 512

Write 7x7x7x7 as an exponent.

7^4

$3^n = 81$

3x3=9, 9x3=81, so n = 3

Order of Operations

P - Parenthesis
E - Exponents
M - Multiply
D - Divide (M, D: left to right)
A - Add
S - Subtract (A, S: left to right)

Evaluate: $3 \times (3^2 + 4) - (10 + 17) \div 3^2$

9 + 4 → 3 x 13 → 39 − 3 → 36

27 ÷ 9 → 3

Students were told to evaluate the expression $3(3\text{-}1)^2$. Logan got 36. Hailie got 12. Who is correct? Why?

Hailie is right because u'd do the parenthesis firsr: 3-1=2; the exponent next: 2^2=4; and multiplication last: 3x4 = 12.

Commutative 3x2 = 2x3 5+6=6+5

Associative (3 + 5) + 6 = 3 + (5 + 6)

Identity (+, -) 6 + 0 = 6 5 - 0 = 5

Identity (x, ÷) 5 x 1 = 5 6 ÷ 1 = 6

Zero 21 x 0 = 0

Distributive

Demonstrate Property 3(5 + 6) = (3 x 5) + 3 x 6)

Simplify 3 x 27 using the distributive property.

3(27)
3(20 + 7)
(3x20) + (3x7)
60 + 21
81

Words that mean add		Words that mean subtract	
add plus more increase	sum	subtract minus less decrease	difference

Words that mean multiply	Words that mean divide
multiply pruduct per times	divide groups quotient break apart

Write the expression: the product of a number and 3

$3n$

Olivia started with an unknown amount of M&Ms. Her mother gave her 10 more. She then shared 3 with Alyssa and 2 with Jeffrey. Write an expression that shows how many M&Ms she had left at the end.

$M + 10 - 3 - 2$

Combining Like Terms

Combining like terms is like putting similar candies into piles. Remember we had 3 different types:

With a variable and an exponent: $4x^2$, $7x^2$, $-3x^2$
With just a variable: 5x, 9x, -2x, x
Just numbers: 3, -6, 5, 2

Also remember different variables are different terms.
6a would not be like 8b

$3a^2 - a^2 + 4a + 3a + 4 - 3$

$2a^2 + 7a + 1$

Like t

Monomial	Example
a set of numbers and variables being multiplied together	$6b^2$

Polynomial	Example
a group of monomials being added together	$2a^2 + 7a + 1$

Variable a letter that represents an unknown number

Coefficient	Example
the number in front of a variable. If there is no number in front of the variable, the coefficient is 1.	$2a^2 + 7a + 1$

Term one of the monomials within a polynomial

Circle the terms
Underline the coefficients
Square the variables

Evaluate this expression if x=3 and y=2

$3x+2(2x^2-4y)$

$3(3) + 2(2(3)^2 - 4(2))$
$9 \quad | \; 2(9) \quad 8$
$2(\; 18 \; - \; 8)$
$2(10)$
$9 + 20 = 29$

Using complete sentences, explain the order of operations you used in the above expression

You started by doing the exponent x^2. You then multiply and subtract what's in the parenthesis. You then haveto multiply what was in the parenthesis by 2 and multiply the 3x. Finally you can add that together.

Equivalent Expressions

Expressions can be written in different ways and still mean the same thing. Like 20 + 7 is equal to 27. This will involve combining and seperating like terms.

Write three equivalent expression to
6x + 11

1. 3x + 3x + 11
2. 6x + 5 + 6
3. 3x + 3x + 6 + 5

My student studied for the test for at least 30 minutes.

Parent Signature_____Date_____