TAKS ON EXPONENTS NAME_____ CLASS PD_____

1.

Jupiter has an equatorial diameter of about 8.9×10^4 miles, which is about 11.2 times as great as Earth's equatorial diameter. According to this information, what is Earth's approximate equatorial diameter in scientific notation?

F 2.3×10^3 mi

G 9.97×10^5 mi

H 7.95×10^3 mi

J 2.01×10^2 mi

- Should the earth's diameter be bigger or smaller than Jupiter? _____
- That eliminates ____ for sure. Divide 8.9 by 11.2 _____
- Now make that a decimal between 0 and 10 and adjust the exponent.

2.

What is the simplified form of $\frac{a^4b^2c}{a^3b^5c^2}$?

A ab^3c^2

B $\frac{a}{b^3c^3}$

C $a^7b^7c^3$

D $\frac{a}{b^3c}$

Step one….do any variables need a 1 exponent ? _____

Is this multiplication or division?_____

So you _____ the exponents.
That gives you
a b c

Were any of the exponents negative?_____

Do you have to move the a value?_____
Do you have to move the b value?_____
Do you have to move the c value?

Answer?_____

3.

Which expression represents the area of a rectangle with sides measuring $2x^2y^4z$ units and $5xy^4z^3$ units?

F $7x^2y^8z^3$ units^2

G $7x^3y^8z^4$ units^2

H $10x^3y^8z^4$ units^2

J $10x^2y^8z^3$ units^2

What is the formula for the area of a rectangle?
_____

So, length = _____
And width = _____

Write A= LW in these terms.

4.

The area if a square is $169x^6y^4z^2$

What is the length of each side of the square?

And $\underline{? \ = 169??}$

The sides of a square are the _____

Same base, add the exponenents.

So you have:

$\square\square\square \cdot \square\square\square = 169x^6y^4z^2$

$x \cdot y \cdot z \times x \cdot y \cdot z$

5.

Marlena was asked to find an expression that is not equivalent to 2^{12}. Which of the following is not equivalent to the given expression?

F $(2^2)^6$

G $(2^8)^4$

H $(2^6)(2^6)$

J $(2^3)(2^9)$

. Hint!!! Powers to Powers!!!!

6.

Which expression best represents the simplification of $(3m^{-2}n^4)(-4m^6n^{-7})$?

F $-\frac{12m^4}{n^3}$

G $-\frac{1}{12m^4n^3}$

H $-\frac{m^4n^3}{12}$

J $-\frac{12n^3}{m^4}$

Is this multiplication or division?_____

So, you _____ the numbers (coefficients) and _____ the exponents.

What are the coefficients when multiplied?

_____

That is a number…not a negative exponent. So, In a fraction the number goes on the top or bottom of the fraction?_____

That eliminates _____ and _____

Now do the variables and you get m n

There is a negative exponent. What do you do with that variable?_____

Do you move the other variable with the positive exponent? _____

So, what is the answer?_____

7.

The dimensions of a rectangular prism are: $L = 2x^{-8}y^3z^2$,
$W = 5x^2y$,
$H = -4x^5z$

What is the volume?

What is the formula for volume of a rectangular prism?_____

Show all work; No negative exponents in the answers!!!!

$V =$_____

8.

Multiply the following monomials together.

$$\left(\frac{1}{2}x^6y^2\right)\left(\frac{1}{4}x^2y^5z^7\right)$$

9.

What is the simplified form of $\dfrac{-6a^3b^5 \quad 2a^2b^3}{-18a^4b^8c^3}$?

F $-\dfrac{2a^2b}{3c^3}$

G $\dfrac{2a}{3c^3}$

H $\dfrac{2a^2b}{3bc^3}$

J $-\dfrac{2ab}{3c^3}$

10.

Which expression is equivalent to

$$\frac{-(3x^2y)^2(4xy^2)}{6xy^3}?$$

A $-6x^4y$
B $6x^2y$
C $-2x^2$
D $2x^4y$