Tuesday, Sept. 30, 2014

Please turn your homework into the tray!

Work out the following problems:

1. Write $(3)^{-5}$ using a positive exponent.
2. Simplify $z^{2} * z^{-3}$

$z^{2+(-3)} = z^{-1} = \frac{1}{z^{1}} = \frac{1}{z}$ $\frac{1}{3^5}$

Scientific Notation

Scientific notation is when a number is written as the product of a factor and an integer power of 10. The factor must be greater than or equal to 1 and less than 10.

$a \times 10^n$, where $1 \leq a < 10$ and n is an integer.

Example: $425,000,000 = 4.25 \times 10^8$

Use these rules to express a number in scientific notation.

*If the number is greater than or equal to 1, the power of ten is positive.

*If the number is between 0 and 1, the power of ten is negative.

Writing in Standard Form

positive - right negative - left

1. 5.34×10^4

5.3400

53,400

2. 3.27×10^{-3}

.003.27

0.00327

a. 7.42×10^5

742000

742,000

b. 6.1×10^{-2}

.061

0.061

c. 3.714×10^2

3.714

371.4

Writing in Scientific Notation

1. 3,725,000

3.725×10^{6}

2. 0.000316

3.16×10^{-4}

a. 14,140,000.

1.414×10^{7}

b. 0.00876

8.76×10^{-3}

Comparing Numbers using Scientific Notation

Refer to the table. Order the countries according to the amount of money visitors spent in the United States from ~~greatest to least.~~ least to greatest

Dollars Spent by International Visitors in the US	
Country	**Dollars Spent**
Canada	1.03×10^7
India	1.83×10^6
Mexico	7.15×10^6
United Kingdom	1.06×10^7

Step 1: Group the numbers by their power of 10.

1.83×10^6 1.03×10^7

7.15×10^6 1.06×10^7

Step 2: Order the decimals.

$1.83 \times 10^6, 7.15 \times 10^6, 1.03 \times 10^7, 1.06 \times 10^7$

If you could walk at a rate of 2 meters per second, it would take you 1.92×10^8 seconds to walk to the moon. Is it more appropriate to report this time as 1.92×10^8 seconds or 6.09 years? Explain your reasoning.

The measure 6.09 years is more appropriate. The number 1.92×10^8 seconds is very large so choosing a larger unit of measure is more meaningful.

Homework:
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