

## Bellwork:

Synectics

What are some things that you enjoy doing. Write as many as you can think of.

## Chapter 5.1: Properties of Exponents

on pg. 330 in text book

$$a^m \cdot a^n = a^{m+n}$$

$$(a^m)^n = a^{mn}$$

$$a^{-m} = \frac{1}{a^m}$$

$$(ab)^n = a^n b^n$$

$$a^0 = 1$$

$$\frac{a^m}{a^n} = a^{m-n}$$

$$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$$

- List of what you enjoy.
- pick one. list things within it.
- pick 4.

energizeRelaxingStresslessDreaming

Properties of Exponents is like..... because.....

ex. Simplify:

$$(-4 \cdot 2^5)^2$$

$$(-4)^2 \cdot (2^5)^2$$

$$(-4)^2 \cdot 2^{10}$$

$$16 \cdot 1024$$

$$16,384$$

$$\left(\frac{11^5}{11^8}\right)^{-1}$$

$$\left(\frac{1}{11^3}\right)^{-1}$$

$$\frac{1^{-1}}{(11^3)^{-1}} = \frac{1}{11^{-3}}$$

$$11^3 = 1331$$

$$11^0 = 1$$

$$11^1 = 11$$

$$11^2 = 121$$

$$11^3 = 1331$$

$$11^4 = 14641$$

$$11^5 = 161051$$

$$11^6 = 1771561$$

## Scientific Notation:

A swarm of locusts is about 85 million per square kilometer over 1200 square kilometers. How many locusts?

$$\begin{aligned}
 85,000,000 &\rightarrow 8.5 \times 10^7 \times 1.2 \times 10^3 \\
 1200 &\rightarrow 1.2 \times 10^3 \\
 &10.2 \times 10^{10} \\
 &1.02 \times 10^{11}
 \end{aligned}$$

ex. Simplify:

$$b^{-4}b^6b^7 \quad \left(\frac{r^{-2}}{s^3}\right)^{-3} \quad \frac{16n^5n^{-5}}{2n^{-5}}$$

ex. Simplify:

$$\frac{(x^{-3}y^3)^2}{x^5y^6} \rightarrow \frac{x^{-6}y^6}{x^5y^6} \rightarrow \frac{1}{x^{11}}$$

Homework: Chapter 5.1 pg.333  
#s 18-27,32-35,40,41

$$(x+3)^2 = (x+3)(x+3) \\
 x^2 + 3x + 3x + 9 \\
 x^2 + 6x + 9$$