

Name: _____

Circle The Period: 3/4/8

Exercise 1:

There are 10^{20} stars in the universe. A cubic meter of sand has 10^9 grains of sand.

If all sand in the world was combined to one huge beach, its dimensions would be

$1\text{m} \times 100\text{m} \times 100,000\text{km}$. $1\text{km} = 1000\text{m}$

Convert these to scientific notation; calculate how many cubic meters there is sand in the world.

Multiply by number of grains in a cubic meter of sand.

Are there more stars in the universe than sand grains in the world?

Exercise 2: $a^m * a^n = a^{m+n}$

- $8^3 * 8^6 =$
- $(0.5)^{-3} * (0.5)^{-8} =$
- $9^{-3} * 9^2 * 9^6 =$

Exercise 3: $ax^n * bx^m = ab(x^n * x^m) = ab(x^{(n+m)})$ or simplify as much as you can

- $5x^4 * x^9 * 3x =$
- $-4c^3 * 7c^2 * 2c^{-2} =$
- $j^2 * j^{-2} * 12j =$
- $-4c^3 * 7d^2 * 2c^{-2} =$
- $j^2 * k^{-2} * 12j =$

Exercise 4: Simplify and write answer in scientific notation

$$(3 \cdot 10^5)(5 \cdot 10^{-12}) =$$

This is your homework. Return to Mr. T latest on Thursday morning. To review lesson online go to:

<http://theprofessort.com/lesson-3-multiplying-powers-with-the-same-base/>