10.7

Operations in Scientific Notation (Day 2)

Rules for Operations

To make scientific nation have a bigger exponent:

- **Move the decimal left**

- **Add the number of times you moved the decimal to the exponent.**

1) 2.4×10^3

2) 7.1×10^7

3) 8.2×10^{-9}

4) 4.6×10^{-4}

Adding Integers without a number line

-3 + -5 =

-1 + -3 =

-6 + -2 =

-9+ -14 =

-12 + -8 =

Adding Integers without a number line

-3 + 5 =

-1 + 6 =

-5 + 9=

5 + -7 =

8 + -6 =

14 + -18 =

DIFFERENT SIGNS
- Ignore the signs
- Subtract
- Put sign back of number that "looks" the biggest

Subtraction is the same as adding the opposite

1. Change the minus sign to addition
2. Change the second number into the opposite
3. Do the problem like a regular addition problem

$$5 - 7 \qquad\qquad 3 - (-7)$$

$$-3 - 6 \qquad\qquad -5 - (-9)$$

Simplify the following:

$$a) \quad -7-(-5)$$

$$b) \quad -2-6$$

$$c) \quad 64-(-13)$$

$$d) \quad 17-29$$

Review

1) $a^3 \cdot a^2$

2) $b^7 \cdot b^9$

3) $7^4 \cdot 7^5$

4) $10^7 \cdot 10^4$

5) $10 \cdot 10^2 \cdot 10^3$

<u>The Product of Powers Property:</u>

To multiply powers with the same base _____

_____.

The Quotient of Powers Property:

_____base & _____ the exponents.

6) $\dfrac{n^{24}}{n^{16}}$

7) $\dfrac{x^8}{x^5}$

8) $\dfrac{10^8}{10^5}$

9) $\dfrac{10^{15}}{10}$

Lesson

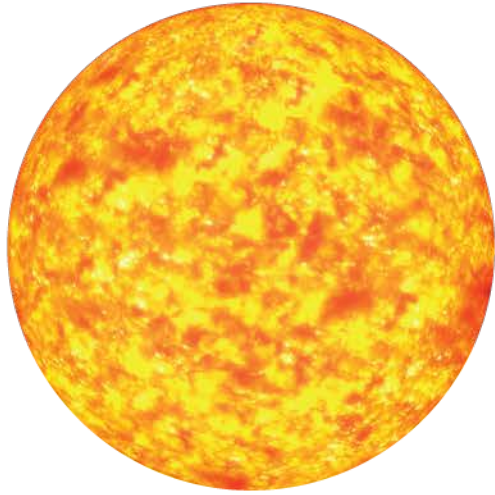Find $(3 \times 10^{-5}) \times (5 \times 10^{-2})$. Write your answer in scientific notation.

Find $(2 \times 10^{-4}) \times (6 \times 10^{-3})$. Write your answer in scientific notation.

Lesson

Find $\dfrac{1.5 \times 10^{-8}}{6 \times 10^{7}}$. Write your answer in scientific notation.

Find $\dfrac{5.3 \times 10^8}{4 \times 10^{-3}}$. Write your answer in scientific notation.

How many times greater is the diameter of the Sun than the diameter of Earth?

Diameter = 1.28×10^4 km

Diameter = 1,400,000 km