Assignment 33

On looseleaf. Show all work!

1) **M**ultiply and divide the numbers (5.6×10^4) and (1.4×10^2). Express your answers in both standard form and scientific notation.

   Multiply: *Divide:*

2) If the number of molecules in 1 mole of a substance is 6.02×10^{23}, then how many molecules would be in 300 moles? Write your answer in scientific notation.

     A) 1806×10^{23}

     B) 18.06×10^{25}

     C) 1.806×10^{25}

     D) 1.806×10^{26}

3) There are about 7.2×10^9 people on our planet. If there are about 1.8×10^8 square miles on the planet, then what is the average number of people per square mile?

4) Find the product of 3.4×10^3 and 6.1×10^{14}. Write your answer in scientific notation.

5) What is 4.4×10^7 divided by 1.1×10^4? Express your answer in scientific notation.

6)

Find the product.

     $(1.9 \times 10^3)(4.5 \times 10^2)$

A. 8.55×10^1

B. 8.55×10^3

C. 8.55×10^5

D. 8.55×10^6

7.

Find the quotient.

$$\frac{2.89 \times 10^2}{3.4 \times 10^{-2}}$$

A. 0.85×10^0

B. 0.85×10^4

C. 8.5×10^3

D. 8.5×10^5

14. The Andromeda Galaxy is about 2.3×10^6 light years away from Earth. One light year is equal to approximately 5.9×10^{12} miles. What is the approximate distance, in miles, between Earth and the Andromeda Galaxy?

A 1.357×10^{18}

B 1.357×10^{19}

C 8.2×10^{19}

D 8.2×10^{60}

Challenge: Good for 2 missing HW's (if you're missing any)…or will count as 5 points extra on your last test, provided you show your work and answer most questions correctly.

Assignment 33

LESSON	**Challenge**
7-2	*Using Scientific Notation to Make Comparisons*

The average distance between Earth and the sun is 93,000,000 miles.
The average distance between Jupiter and the sun is 484,000,000 miles.
Using scientific notation, you can answer questions like the one below.

How many times farther from the sun is Jupiter than Earth?

Answer the following questions.

1. a. Write the distance between Earth and
the sun in scientific notation. _____

b. Write the distance between Jupiter
and the sun in scientific notation. _____

c. How many times farther from the Sun
is Jupiter than Earth? _____

2. The average distance between Pluto and the sun
is 3,675,000,000 miles.

a. How many times farther from the
sun is Pluto than Earth? _____

b. How many times farther from the
sun is Pluto than Jupiter? _____

3. The star closest to the sun is 25,000,000,000,000 miles
from the sun. How many times farther is it from the
sun to the nearest star as it is from Earth to the sun? _____

**One light-year is the distance light travels in one year. Light
travels 186,282 miles in 1 second.**

4. How many miles does light travel in a year? Give your
answer in scientific notation rounded to the nearest tenth. _____

5. a. One galaxy is 200,000 light-years from the sun.
How many miles from the sun is the galaxy? _____

b. How many times farther is this galaxy from
the sun than Earth is from the sun? _____

You can use scientifc notation to compare masses of large
objects with masses of small objects.

Mass of hydrogen atom:	1.67×10^{-24} grams
Jerry's mass:	6.35×10^{1} kilograms
Mass of Earth:	5.97×10^{24} kilograms

6. Write a ratio to compare Jerry's mass with that of a hydrogen atom. _____

7. Write a ratio to compare the mass of Earth with that of a hydrogen atom. _____