Introduction to Conversions

Target: Today I will be able to convert between quantities of time. I will also be able to use scientific notation correctly.

Pg. 109

Before we begin…

Bags of Reactions lab redo's due Friday. Take this opportunity to earn points back.

Pease do corrections in a different color pen

Science in Social media project update (**Pg. 91**)

Cross out "~~5~~ sources", write "3"

Cross out "~~2-5~~ pages", write "2-3"

Review of Scientific Notation

- In **scientific notation**, numbers are written in the form $M \times 10^n$, where the factor M is a number greater than or equal to 1 but less than 10 and n is a whole number.

- It's a way of writing very large numbers and very small numbers without all the extra places.

Scientific Notation in a Calculator

- How would you type 1.2×10^3 into a calculator?
  - Many students type: $1.2*10^3$ or 1.2*10^3
  - This is incorrect! The calculator multiplies before it applies the exponent.
- Write: 1.2E3
  - This way, the calculator applies the exponent before it multiplies.
- "Please Excuse My Dear Aunt Sally"

Let's Practice:

- **<u>Questions 1-25</u>** on *"Scientific Notation and Unit Prefixes."* **Pg. 108**
- Individual work, please.
- For this class, please round to TWO decimal places, no more.

Introduction to Conversions

- a.k.a. “Unit analysis”
- a.k.a. “Dimensional Analysis”

- What are units?
  - A measurement is made up of a quantity AND a unit.
  - Ex: 5.5 feet
  - Without the unit, the number means nothing.

Introduction to Conversions

- Units of measurement allow us to compare what is measured to a previously determined standard.
- Units allow us to communicate information about the world around us.
- Units are chosen based on the quantity being measured, and what is appropriate.
  - Ex: You wouldn't measure you height in millimeters. But you might choose meters or feet instead.

Introduction to Conversions

- Why convert?
  - We may wish to report a quantity in another, related unit.
    - Ex. Babies age reported in months.

- Converting is all about changing something into understandable units.

The most important thing in this unit:

- Converting units only changes the standard of measurement….

THE VALUE DOESN'T CHANGE!!!!!

Ex: I'm 5 foot 4 inches. In meters that's 1.63 meters. My height, however remains the same. ☹

Introduction to Conversions

- How old are you in seconds?
  - (Round to the nearest year)
  - Answer in scientific notation

- 15 years = 4.73×10^8 seconds
- 16 years = 5.05×10^8 seconds
- 17 years = 5.36×10^8 seconds
- 18 years = 5.68×10^8 seconds

Introduction to Conversions

- How much money is a dozen pennies?

Homework

- In your notebook, answer the following question:
  - "How much money is one hundred dozen pennies?"
  - **Pg.110**
  - **Due block day**

- Begin work on rough draft of Science in Social Media Project (see instructions in part 5 of assignment)
  - Rough draft due via email or Google drive by **Friday, 1/31**