

Chapters 1 and 2 Review

- I. Significant Figures
 - A. The instruments, techniques, and conditions that we use to make measurements always limit us.
 - B. When taking a measurement, include all certain digits plus one *estimated digit*.
 - C. All non-zero intergers are significant.
 - D. All zeros to the left of the first non-zero digit are NOT significant.
 1. Example: 0.0045 = 2 sig figs
 - E. All zeros between non-zero digits are significant.
 - F. All zeros at the end of a number that has a decimal points are significant.
 1. Example: 56.7800 = 6 sig figs
 - G. Zeros at the end of a whole number may or may not be significant.
 - H. For exact numbers, there is no uncertainly as to its value.
 1. Examples: 20 people, 5 apples
- II. Adding and Subtracting Sig Figs
 - A. When adding and subtracting sig figs, the units must match.
 - B. Exponents in scientific notation must also match.
 - C. Sig figs are determined by the number of digits after the decimal point.
 1. Example: 5.62+ 3.2= 8.8
- III. Multiplying and Dividing Sig Figs
 - A. Sig figs are determined by whichever number is the limiting number.
 1. Example: 2.0/ .5000= 4.0
- IV. Periodic Table of Elements
 - A. The table is arranged in order of increasing atomic number.
 1. **Atomic Number**: number of protons in an atom.
 - B. The elements are also grouped by properties.
 - C. **Atomic Number**: whole number at the top of the element's box
 - D. **Atomic Mass**: decimal number at the bottom of the element's box
 1. Atomic Mass is calculated by averaging the weight of all of the elements naturally occurring isotopes.
 - E. Atoms have mass and we need to know their mass to weigh out a specific number of atoms .
 - F. For convieience, chemists use the following vocabulary:
 1. Atomic Mass Unit (amu): 1 amu is defined as 1/12 of the mass of an atom. It is the approximate weight of a proton or neutron.
 - 2.