Quiz #1

1. Which of the following statements best represents a law?
    a. Adding four pounds of air to a tire increases the volume of the tire by 1.0%
    b. The volume of a gas is inversely proportional to its pressure.
    c. A gas is composed of small molecules in constant motion.
    d. A gas with a mass of 10.5 grams has a volume of 34.8 liters.
2. A tentative interpretation or explanation of an observation is call a:
    a. law
    b. theory
    c. hypothesis
    d. observation
3. The way that scientists learn about the natural world involving experimentation, observations and hypothesis is known as:
    a. Scientific method
    b. Law of Science
    c. Theory of Chemistry
    d. Greek Philosophy
4. Which of the following elements would be considered an alkaline earth metal?
    a. Cesium
    b. Manganese
    c. Californium
    d. Strontium
5. Which of the following elements would be in the same period as tellurium?
    a. Oxygen
    b. Xenon
    c. Potassium
    d. Bromine
6. What is the symbol for manganese?
    a. Mn
    b. Mg
    c. Md
    d. Mt
7. What is the mass, in pounds, of an object having a mass of 1.5×10^5 mg?
    a. 3.3×10^{-4} pounds
    b. 0.16 pounds
    c. 1.6×10^{-2} pounds
    d. 0.33 pounds
8. The speed of sound at on a typical day in the Palouse is calculated to be 1.130×10^3 feet/second. Bill shouts to Sally, his hiking partner, who is 788 yards away. How long will it take in seconds for the sound of Bill's voice to reach Sally?
    a. 2.09 seconds
    b. 1630 seconds
    c. 5.88 seconds
    d. 0.0882 seconds

9. The masses of precious metals are often reported in troy units, conversions shown below.
   24 grains = 1 pennyweight; 20 pennyweights = 1 troy ounce; 12 troy ounces = 1 troy pound
   A piece of metal was purchased for $2054.00. The price of the metal at the time was $155.00 per troy ounce. What was the mass of the metal in grains?
   a. 265.0 grains
   b. 6361 grains
   c. 318.0 grains
   d. 76330 grains

10. In the make believe country of Nardonia, the "Nards" earn their living by making kabobs from bobs. A Nard uses 25 bobs to make 13 kabobs for which they are paid 6.5 nobs for each kabob. If a Nard uses about 4.85 bobs in an 8.0 hour workday, how many hours would it take them to earn 14005 nobs - the price of a Kob, the country's most popular car?
   a. 44400 hours
   b. 273 hours
   c. 854 hours
   d. 6830 hours

11. The density of mercury is 13.54 grams per milliliter. How many grams of mercury does it take to fill a 3.50 L bottle?
   a. 47.4 grams
   b. 2.11×10^{-6} grams
   c. 4.74×10^{4} grams
   d. 2.11×10^{-3} grams

12. What is the weight in grams of an aluminum bar, which has a height 12.5 cm, a width of 10.8 cm and a length of 18.0cm? The density of aluminum is 2.70 g/mL.
   a. 6560 grams
   b. 2430 grams
   c. 900 grams
   d. 1530 grams

13. In 1618, the Pharmacopoeia of London <u>defined</u> the following mass units to be used in the preparation of drugs: **20 grains = 1 scruple; 3 scruples = 1 drachm; 8 drachms = 1 ounce**
   How many ounces (as defined above) of aspirin would you have if you have 895 grains of aspirin?
   a. 14.9 ounces
   b. 4.29×10^{5} ounces
   c. 2.15×10^{4} ounces
   d. 1.86 ounces

14. The number 13040 has how many significant digits?
   a. 5
   b. 3
   c. 2
   d. 4

15. You land a job making $0.0250 per second. What is your annual salary? (Assume that you only work 40 hours a week and 52 weeks a year.)
    a. $3,120 per year
    b. $187,000 per year
    c. $4,680 per year
    d. $97,000 per year

16. Which of the following elements would be considered a non-metal?
    a. Bismuth
    b. Mercury
    c. Selenium
    d. Beryllium

17. Which of the following elements is in the same family as boron?
    a. Carbon
    b. Helium
    c. Lead
    d. Gallium

18. Which of the following elements is a Noble Gas?
    a. Hydrogen
    b. Chlorine
    c. Radon
    d. Oxygen

19. Which of the following elements is a metal?
    a. Germanium
    b. Astatine
    c. Antimony
    d. Technetium

20. What is 2.55×10^3 multiplied by 5.88×10^{-2}?
    a. 150.
    b. 15.0
    c. 1.50×10^{-2}
    d. 1.50×10^{-1}

21. What value would you get if you added 105 to 9.704? Be sure to following the rules for significant figures.
    a. 114.704
    b. 115
    c. 114.7
    d. 114

22. Which of the following is not an element?
    a. Cesium
    b. Tin
    c. Vanadium
    d. Bronze

23. If an object measure 27.5 centimeters in length, what would the length be in kilometers?
    a. 0.0275 km
    b. 27500 km
    c. 0.000275 km
    d. 2.75 x 10^{-3} km

24. Which of the following is not a base unit in the International System (SI)?
    a. Gram
    b. Second
    c. Kelvin
    d. Meter