Unit 1 Test Review Guide

1. Volume is an example of which of the following properties (check all that apply):
   a. [x] Quantitative Property
   b. [ ] Qualitative Property
   c. [x] Extensive Property
   d. [ ] Intensive Property
   e. [x] Physical Property
   f. [ ] Chemical Property

2. List the four possible indicators of a chemical reaction:
   - Color change
   - Temp change
   - Release of a gas
   - Formation of a precipitate

3. Chemistry is the study of [matter] and the changes it undergoes.

4. Fill in the blanks below with the physical state of matter that applies to the description.
   a. Solid [ ] has a definite shape and a definite size
   b. Liquid [x] has a definite size, but not a definite shape
   c. Gas [ ] has an indefinite (changing) size and an indefinite shape

5. What is the simplest form of matter?
   Element

6. What is it called when a substance is made up of 2 or more elements?
   Compound

7. Check which of the following are heterogeneous mixtures:
   a. [x] Trail Mix
   b. [x] Chicken Noodle Soup
   c. --- Pepsi cola
   d. --- Koolaid
   e. [x] Ice Tea

8. What is the act of separating a liquid by evaporating it and condensing it back?
   Distillation
9. Conan O'Brien wanted to see how his choice in outfits would affect the show's ratings. HE ran the following trials:

Trial 1: Conan wore a black suit with a red tie. He drank out of his blue coffee mug, while he hosted an actor from a popular tv show.

Trial 2: Conan wore a gray suit with a pink tie. He drank out of his blue coffee mug while he hosted an actor from a different a popular tv show.

In Conan's experiment what were the following?

Dependent variable: shows ratings
Independent variable: choice in outfits
Control: Blue coffee mug, an actor from a popular tv. show.

10. If the density of copper is 8.96g/ml and a sample takes a volume of 46ml, what is its mass?

\[ D \cdot V = m \]
\[ (8.96g/ml)(46ml) = 412.16g \]

11. Convert the following numbers into scientific notation:
   a. 120045 \[ 1.20045 \times 10^5 \]
   b. .006301 \[ 6.301 \times 10^{-3} \]
   c. 85,000,000 \[ 8.5 \times 10^7 \]

12. Convert the following numbers out of scientific notation:
   a. 6.0791 \times 10^2 \[ 607.91 \]
   b. 2.03 \times 10^{-7} \[ 0.000000203 \]
   c. 4.95 \times 10^8 \[ 495,000,000 \]

13. Convert 5.7km to miles

\[
\begin{array}{cccccccc}
5.7\text{km} & 1000\text{m} & 100\text{cm} & 1\text{in} & 1\text{ft} & 1\text{mi} \\
1\text{m} & 1\text{x} & 2.54\text{cm} & 12\text{in} & 5280\text{ft} & \\
\end{array}
\]

\[ = 3.5\text{mi} \]

14. Mr. Gates wanted to buy his 82 students donuts. He figures each student will eat 2 donuts and when he picked up the donuts the drive through menu said that the cost is $13.58 for a box of a dozen (12) donuts. How much will it cost for Mr. Gates to feed his students donuts? If Mr. Gates has a coupon that will give him one additional free donut for every $20 spent on purchasing donuts, how many additional donuts will you get for free?

\[
\begin{array}{c|c|c}
82 \text{ students} & 2 \text{ donuts} & \$13.58 \\
\hline
1 \text{ student} & 12 \text{ donuts} & \hline
\$175.59 & 1 \text{ free donut} & \hline
\$20 & = 9 \text{ free donuts} \\
\end{array}
\]