**Quiz 1**

# Directions: Answer each of the following questions. Be sure to use complete sentences where appropriate. For full credit be sure to show all of your work. Where appropriate answers should be boxed for clarity, written to the correct number of significant figures, and, include the proper units.

1. Classify each of the following as physical or chemical properties (2 points):
   1. The color of copper \_\_\_\_\_\_\_physical
   2. The tendency of iron to rust \_\_\_\_\_\_\_chemical
2. A drop of water is put into a container and sealed. The drop of water vaporizes (2 points).
   1. Does the mass of the sealed container change upon vaporization? \_\_\_\_no
   2. Does its contents change upon vaporization? \_\_\_\_no
3. In early press conferences about the *Curiosity* rover on Mars scientists and engineers expressed distances in either the English or the metric system and temperatures in K, °C, and °F in response to questions from journalists from different countries. After an early drive, *Curiosity* stopped 8.0 ft away from an interesting football-shaped rock. *Curiosity’s* wheels are 50 cm in diameter, and the rover moves at a speed of 200 m/sol, where 1 sol = 1 Martian day = 24.65 hrs (14 points).
   1. How many minutes would it take the rover to move to within 1.0 ft of the rock?
   2. One night *Curiosity* recorded a temperature reported as “-132°” on the Fahrenheit scale. If the daytime temperature was 263 K, what was the day/night temperature range in °C?

The temperature range

1. Name the following reagents that are used in the Copper Reactions experiment (4 points):
   1. HNO3 (aq) \_\_\_\_nitric acid\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Cu(OH)2 \_\_\_copper(II) hydroxide\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Na3PO4 \_\_\_sodium phosphate\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_