**Quiz 3A**

# 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. The density of pure water at 15 °C is 0.99913 g/mL. How many liters of water are in 432.18 g of water (4 points)?

$$432.18 g×\frac{1 mL}{0.99913 g}×\frac{1 L}{1000 mL}=0.432556324 L≈0.43256 L$$

1. What is the difference between a physical change and a chemical change (2 points)?

A physical change involves a change in state, appearance, etc. that does not change the chemical formula of the substance. A chemical change involves a change that results in the chemical formula of the substance being changed.

1. Determine the following information for an atom whose complete chemical symbol is $$(8 points).
	1. The total number of subatomic particles present in the atom.

63 + 29 = 92 subatomic particles

* 1. The total number of subatomic particles present in the nucleus of the atom.

63

* 1. The atomic number.

29

* 1. The mass number.

63

* 1. The number of neutrons, protons and electrons respectively.

63 – 29 = 34 neutrons, 29 protons, and 29 electrons

1. Classify each of the following as endothermic or exothermic with respect to the underlined substance (3 points):
	1. Burning a match exothermic
	2. Boiling water endothermic
	3. Cooling a glass of milk exothermic
2. How many graphs will you make in this experiment (2 points)? \_\_\_1\_\_\_

**Quiz 3B**

# 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. What is the difference between a homogeneous and heterogeneous mixture (2 points)?

A homogenous mixture is uniform in appearance with constant properties. A heterogeneous mixture has two or more layers with different properties.

1. Classify each of the following as endothermic or exothermic with respect to the underlined substance (3 points):
	1. Cooking a steak endothermic
	2. Freezing a popsicle exothermic
	3. Burning a piece of paper exothermic
2. How many graphs will you make in this experiment (2 points)? \_\_\_1\_\_\_
3. Determine the following information for an atom whose complete chemical symbol is $$(8 points).
	1. The total number of subatomic particles present in the atom.

31 + 15 = 46 subatomic particles

* 1. The total number of subatomic particles present in the nucleus of the atom.

31

* 1. The atomic number.

15

* 1. The mass number.

31

* 1. The number of neutrons, protons and electrons respectively.
		1. – 15 = 16 neutrons, 15 protons, 15 electrons.
1. The density of pure water at 35 °C is 0.99406 g/mL. How many liters of water are in 875.22 g of water (4 points)?

$$875.22 g×\frac{1 mL}{0.99406 g}×\frac{1 L}{1000 mL}=0.880449872 L≈0.88045 L$$