Chemistry 115 Name key

Dr. Cary Willard

Quiz 2a (20 points) September 5, 2012

All work must be shown to receive credit. Give answers to the correct number of significant figures.

1. (4 points)Calculate the mass in grams of an elephant with a mass of 6390 lbs.

$$?g elephant=6390 lbs×\frac{454 g}{1 lbs}=2.90×10^{6}g$$

1. (4 points) What is the volume in quarts of 3.24 kg of gasoline. Gasoline has a density of 0.66 g/mL.

$$?qt gasoline=3.24 kg gas×\frac{1000 g gas}{1 kg gas}×\frac{1 mL gas}{0.66 g gas}×\frac{1 qt gas}{946 mL gas}=5.2 qt gas$$

1. (4 points) A recipe calls for heating the oven to 325oF. If you are vacationing in Europe and the oven only has temperatures in oC, to what temperature do you preheat the oven?

$$℃=\frac{\left(℉-32\right)}{1.8}=\frac{\left(325℉-32℉\right)}{1.8 ℉/℃}=163℃$$

1. (4 points) Classify each of the following as a pure substance or a mixture. Classify pure substances as elements or compounds and classify pure substances as homogeneous or heterogeneous.
	1. Strawberry ice cream

Strawberry ice cream is a heterogeneous mixture because it contains small pieces of strawberry mixed in with the ice cream.

* 1. Pure nitrous oxide (N2O) or laughing gas

Nitrous oxide is a pure substance which is a compound.

1. (4 points) Define the term physical property and give an example of a physical property.

A physical property is a property of a substance which can be observed without changing the identity of the substance. Some examples of physical properties are color, hardness and melting point

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Quiz 2b (20 points) September 5, 2012

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1. (4 points)Calculate the mass in grams of an elephant with a mass of 7490 lbs.

$$?g elephant=7490 lbs×\frac{454 g}{1 lbs}=3.40×10^{6}g$$

1. (4 points) What is the volume in quarts of 2.84 kg of gasoline. Gasoline has a density of 0.66 g/mL.

$$?qt gasoline=2.84 kg gas×\frac{1000 g gas}{1 kg gas}×\frac{1 mL gas}{0.66 g gas}×\frac{1 qt gas}{946 mL gas}=4.5 qt gas$$

1. (4 points) A recipe calls for heating the oven to 425oF. If you are vacationing in Europe and the oven only has temperatures in oC, to what temperature do you preheat the oven?

$$℃=\frac{\left(℉-32\right)}{1.8}=\frac{\left(425℉-32℉\right)}{1.8 ℉/℃}=218℃$$

1. (4 points) Classify each of the following as a pure substance or a mixture. Classify pure substances as elements or compounds and classify pure substances as homogeneous or heterogeneous.
	1. Chocolate fudge ice cream

Chocolate fudge ice cream is a heterogeneous mixture because it contains small ribbons of fudge mixed in with the ice cream.

* 1. Pure neon (Ne), the gas found in orange colored neon lights.

Neon gas is a pure substance which is an element.

1. (4 points) Define the term physical property and give an example of a physical property.

A physical property is a property of a substance which can be observed without changing the identity of the substance. Some examples of physical properties are color, hardness and melting point

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Quiz 2c (20 points) September 5, 2012

All work must be shown to receive credit. Give answers to the correct number of significant figures.

1. (4 points)Calculate the volume in milliliters of a giant cup of coffee which contains 761 qt of coffee.

$$?mL coffee=761 qt×\frac{946 mL}{1 qt}=7.20×10^{5}mL$$

1. (4 points) What is the volume in L of 3.24 lb of gasoline. Gasoline has a density of 0.66 g/mL.

$$?L gasoline=3.24 lb gas×\frac{454 g gas}{1 lb gas}×\frac{1 mL gas}{0.66 g gas}×\frac{1 L gas}{1000 mL gas}=2.2 L gas$$

1. (4 points) A friend from Europe sends you a recipe, Unfortunately, the oven temperatures are in oC. If the recipe calls for heating the oven to 215oC, to what temperature in oF do you preheat the oven?

$$℉=\left(℃×1.8\right)+32=\left(215℃×1.8℉/℃\right)+32℉=419℉$$

1. (4 points) Classify each of the following as a pure substance or a mixture. Classify pure substances as elements or compounds and classify pure substances as homogeneous or heterogeneous.
	1. Tomato sauce for pasta

Tomato sauce is a heterogeneous mixture because the sauce contains chunks of tomato and other herbs.

* 1. Baking soda (NaHCO3)

Baking soda is a pure substance which is a compound.

1. (4 points) Define the term chemical property and give an example of a chemical property.

A chemical property is a property of a substance which can be only be observed by changing the identity of the substance. Some examples of physical properties are iron reacting with oxygen to form rust and silver reacting with sulphur to form a black tarnish.

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Quiz 2d (20 points) September 5, 2012

All work must be shown to receive credit. Give answers to the correct number of significant figures.

1. (4 points)Calculate the volume in milliliters of a giant cup of coffee which contains 719 qt of coffee.

$$?mL coffee=719 qt×\frac{946 mL}{1 qt}=6.80×10^{5}mL$$

1. (4 points) What is the volume in L of 4.92 lb of gasoline. Gasoline has a density of 0.66 g/mL.

$$?L gasoline=4.92 lb gas×\frac{454 g gas}{1 lb gas}×\frac{1 mL gas}{0.66 g gas}×\frac{1 L gas}{1000 mL gas}=3.4 L gas$$

1. (4 points) A friend from Europe sends you a recipe, Unfortunately, the oven temperatures are in oC. If the recipe calls for heating the oven to 175oC, to what temperature in oF do you preheat the oven?

$$℉=\left(℃×1.8\right)+32=\left(175℃×1.8℉/℃\right)+32℉=347℉$$

1. (4 points) Classify each of the following as a pure substance or a mixture. Classify pure substances as elements or compounds and classify pure substances as homogeneous or heterogeneous.
	1. Cream sauce for pasta

Cream sauce is a heterogeneous mixture because the sauce contains small bits of herbs

* 1. A statue composed of pure copper metal (Cu)

Copper is a pure substance which is an element.

1. (4 points) Define the term chemical property and give an example of a chemical property.

A chemical property is a property of a substance which can be only be observed by changing the identity of the substance. Some examples of physical properties are iron reacting with oxygen to form rust and silver reacting with sulphur to form a black tarnish.