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Chapter 1 (397847)

About this Assignment

Description

Matter and Measurement

Instructions

Matter and Measurement

1. KT6 1.P.014. [489836] [Show Details](#)

The cup is a volume measure widely used by cooks in the United States. One cup is equivalent to 237 mL. If 1 cup of oil has a mass of 215 g, what is the density of the oil (in grams per cubic centimeter)?

4.0 g/cm³

2. KT6 1.P.016. [489864] [Show Details](#)



Iron pyrite is often called "fool's gold" because it looks like gold. Suppose you have solid that looks like gold, but you believe it to be fool's gold. The sample has a mass of 23.5 g. When the sample is lowered into the water in a graduated cylinder, the water level rises from 45.3 mL to 46.5 mL. Is the sample fool's gold ($d = 5.00 \text{ g/cm}^3$) or "real" gold ($d = 19.3 \text{ g/cm}^3$)?

- real gold
- fool's gold

Give the density of this solid, to support your answer.

4.0 g/cm³

3. KT6 1.P.019. [467479] [Show Details](#)

Make the following temperature conversions.

°C	K
(a) 19	4.0 <input checked="" type="checkbox"/> <input type="text"/>
(b) 4.0 <input checked="" type="checkbox"/> <input type="text"/>	361
(c) 71	4.0 <input checked="" type="checkbox"/> <input type="text"/>

4. KT6 1.P.026. [489857] [Show Details](#)

Some soft drinks are sold in bottles with a volume of 1.5 L. What is this volume in milliliters?

4.0 ✓ mL

What is this volume in cubic centimeters?

4.0 ✓ cm³

What is this volume in cubic decimeters?

4.0 ✓ dm³

5. KT6 1.P.043. [467213] [Show Details](#)

The anesthetic procaine hydrochloride is often used to deaden pain during dental surgery. The compound is packaged as a 10.% solution (by mass; $d = 1.0$ g/mL) in water. If your dentist injects 0.70 mL of the solution, what mass of procaine hydrochloride (in milligrams) is injected?

4.0 ✓ mg

6. KT6 1.P.080.Tutor. [510538] [Show Details](#)**Tutorial Question**

If you have trouble answering the main question(s) below, a tutorial will guide you through the solution process.

Homework 1.80

	Question	Answer
MAIN QUESTION	Carry out the following calculation and report the answer in the correct number of significant figures. $(168) \left[\frac{23.56 - 2.3}{1.248 \times 10^3} \right] =$	Enter a response, then Submit. <input type="text"/> <input type="button" value="Submit"/>

Question has not been submitted for scoring.

7. KT6 1.P.094.Practice. [510118] [Show Details](#)

Answer all parts of the following question to receive credit.

Homework 1.94

MAIN QUESTION**Question 1 of 2**

When you heat popcorn, it pops because it loses water explosively. Assume a kernel of corn, with a mass of 0.125 g, has a mass of only 0.104 g after popping.

What percentage of its mass did the kernel lose on popping?

Answer

Enter a response, then Submit.

 %**Submit**

Question has not been submitted for scoring.

8. KT6 1.P.104.Tutor. [509975] [Show Details](#)

Tutorial Question

If you have trouble answering the main question(s) below, a tutorial will guide you through the solution process.

Homework 1.104

MAIN QUESTION

Question

A spherical metal ball has a mass of 6.823 g and a diameter of 7.66 mm. What is the density of the metal, in g/cm³?

The volume of a sphere = $\frac{4}{3}\pi r^3$,
where r = radius.

Answer

Enter a response, then **Submit**.

 g/cm³**Submit**

Question has not been submitted for scoring.

9. KT6 1.P.109.Tutor. [510264] [Show Details](#)

Tutorial Question

If you have trouble answering the main question(s) below, a tutorial will guide you through the solution process.

Homework 1.109

MAIN QUESTION

Question

Suppose you have a cylindrical glass tube with a thin capillary opening, and you wish to determine the diameter of the capillary. You can do this experimentally by weighing a piece of the tubing before and after filling a portion of the capillary with mercury. Using the following data, calculate the diameter of the capillary, in millimeters.

- Mass of tube before adding mercury 3.263 g
- Mass of tube after adding mercury 3.647 g
- Length of capillary filled with mercury 21 mm
- Density of mercury 13.546 g/cm³
- Volume of cylindrical capillary filled with mercury = $(\pi)(\text{radius})^2(\text{length})$

Answer

Enter a response, then Submit.

mm

Submit

Question has not been submitted for scoring.

10. KT6 1.P.039. [467523] [Show Details](#)

A red blood cell has a diameter of 7.5 μm (micrometer).



(a) What is this dimension in meters?

m

(b) What is this dimension in nanometers?

nm

(c) What is this dimension in picometers?

pm

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