Density Practice (8 Questions)

**Calculate density, and identify substances using a density chart.**

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| --- | --- |
| **Substance** | **Density (g/cm3)** |
| Gold | 19.3 |
| Mercury | 13.5 |
| Lead | 11.4 |
| Iron | 7.87 |
| Aluminum | 3.7 |
| Bone | 1.7-2.0 |
| Gasoline | 0.66-0.69 |
| Air (dry) | 0.00119 |

Density is a measure of the amount of mass in a certain volume. This physical property is often used to identify and classify substances. It is usually expressed in grams per cubic centimeters, or g/cm3. The chart on the right lists the densities of some common materials.

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| Equation: | **Density** | **= mass** | **or** | **D** | **=** | **m** |
|  |  | **Volume** |  |  |  | **V** |

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| **Problem Statement** | **Formula** | **Define Variables** | **Substitution** | **Answer** |
| ***Sample:*** What is the density of a billiard ball that has a volume of 100 cm3 and a mass of 250 g? | D = m  V | M = 250 g V = 100 cm3 | D = 250 g  100 cm3 | 2.5 g/cm3 |
| 1. A loaf of bread has a volume of 2270 cm3 and a mass of 454 g. What is the density of the bread? |  |  |  |  |
| 2. A block of wood has a density of 0.6 g/cm3 and a volume of  1.2 cm3. What is the mass of the block of wood? |  |  |  |  |
| 3. A 800g boulder has a density of 8 g/cm3. What is the volume of the boulder? |  |  |  |  |
| 4.What is the mass of the block of iron illustrated below?  **2 cm 5 cm**  **10 cm** |  |  |  |  |

Use the data below to calculate the density of each unknown substance.

Then ***use the density chart above*** to determine the identity of each substance.

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| **Mass (g)** | **Volume (cm3)** | **D = m/v Variable Substitutions** | **Density (g/cm3)** | **Substance** |
| 4725 | 350 | D = 4725  350 | D = 13.5 | Mercury |
| 171 | 15 |  |  |  |
| 148 | 40 |  |  |  |
| 475 | 250 |  |  |  |
| 680 | 1000 |  |  |  |