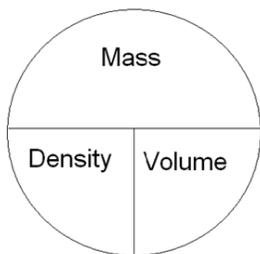


Calculating for Density, Mass, and Volume



1. A block of aluminum occupies a volume of 15.0 mL and has a mass of 40.5 g. What is its density? (D= M/V)

2. Mercury metal is poured into a graduated cylinder that holds exactly 22.5 mL. The mercury used to fill the cylinder has a mass of 306.0 g. From this information, calculate the density of mercury. (D= M/V)

3. A rectangular block of copper metal has a mass of 1896 g. The dimensions of the block are 8.4 cm by 5.5 cm by 4.6 cm. From this data, what is the density of copper? (D= M/V)

4. Calculate the density of sulfuric acid if 35.4 mL of the acid has a mass of 65.14 g. (D= M/V)

5. A block of lead has dimensions of 4.50 cm by 5.20 cm by 6.00 cm. The block has a mass of 1587 g. From this information, calculate the density of lead. (D= M/V)

6. 28.5 g of iron shot is added to a graduated cylinder containing 50 mL of water. The water level rises to the 53.6 mL mark, from this information, calculate the density of iron. (D= M/V)

7. A solid rubber stopper has a mass of 33.0 grams and a volume of 30.0 cm³. What is the density of rubber? (D= M/V)

8. A chunk of paraffin (wax) has a mass of 50.4 grams and a volume of 57.9 cm³. What is the density of paraffin? (D= M/V)

9. A marble statue has a mass of 6,200 grams and a volume of 2,296 cm³. What is the density of marble? (D= M/V)

Recycling centers, for example, use density to help sort and identify different types of plastics so that they can be properly recycled. The table below shows common types of plastics, their recycling code, and density. Use the table to solve problems

Plastic name	Common uses	Recycling code	Density (g/cm ³)	Density (kg/m ³)
PETE	plastic soda bottles	1	1.38-1.39	1,380 - 1,390
HDPE	milk cartons	2	0.95-0.97	950 - 970
PVC	plumbing pipe	3	1.15-1.35	1,150 - 1,350
LDPE	trash can liners	4	0.92-0.94	920 - 940
PP	yogurt containers	5	0.90-0.91	900 - 910
PS	cd "jewel cases"	6	1.05-1.07	1,050 - 1,070

10. A recycling center has a 0.125 m³ box filled with one type of plastic. The full box has a mass of 120 kilograms. What is the density of the plastic? What type of plastic is in the box? JUSTIFY your answer. (D= M/V)

11. The center grinds up plastic for recycling, but the workers forgot to label the type of plastic. The workers found that the plastic has a mass of 2.25 g and a volume of 2.5 cm³. What is the density of the plastic? What type of plastic was it? JUSTIFY your answer. (D= M/V)

12. A solid will float in a liquid if it is less dense than the liquid, and sink if it is more dense than the liquid. If the density of seawater is 1.025 g/mL, which types of plastics would definitely float in seawater? JUSTIFY your answer. (D= M/V)

13. COMPARE/CONTRAST *mass* and *weight* using the VENN table below. All bullets should be used.

MASS	Both	WEIGHT
<ul style="list-style-type: none"> • _____ • _____ • _____ 	<ul style="list-style-type: none"> • _____ • _____ • _____ 	<ul style="list-style-type: none"> • _____ • _____ • _____