

## Density Calculations

Name: \_\_\_\_\_

1. A block of aluminum occupies a volume of 15.0 mL and weighs 40.5 grams. What is the density of the block?
2. Mercury metal is poured into a graduated cylinder that holds exactly 22.5 mL. The mercury used to fill the cylinder weighs 306.0 grams. From this information calculate the density of mercury.
3. What is the weight of the ethyl alcohol that exactly fills a 200.0 mL container if the density of ethyl alcohol is 0.789 g/mL?
4. A rectangular block of copper metal weighs 1896 grams. 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?
5. A flask that weighs 345.8 grams is filled with 225 mL of carbon tetrachloride. The weight of the flask and carbon tetrachloride is found to be 703.55 grams. From this information, calculate the density of carbon tetrachloride.
6. Calculate the density of sulfuric acid if 35.4 mL of the acid weighs 65.14 grams.
7. Find the mass of 250.0 mL of benzene if the density of benzene is 0.8765 g/mL.
8. A block of lead has dimensions of 4.50 cm by 5.20 cm by 6.00 cm. The block weighs 1587 grams. Calculate the density of lead from this information.
9. A sample of iron shot with a mass of 28.5 grams is added to a graduated cylinder containing 45.50 mL of water. The water level rises to the 49.10 mark on the cylinder. From this information calculate the density of iron.
10. What volume of silver metal will weigh exactly 2500.0 grams? The density of silver is 10.5 g/cm<sup>3</sup>.

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11. An unknown sample occupies a volume of 35.0 mL and weighs 80.2 grams. What is the density of the block?
12. A liquid is poured into a graduated cylinder that holds exactly 45.0 mL. The liquid used to fill the cylinder weighs 63.9 grams. From this information calculate the density of the liquid.
13. What is the weight of the sample that exactly fills a 200.0 mL container if the density is 0.989 g/mL?
14. A rectangular block of metal weighs 4876 grams. The dimensions of the block are 10.4 cm by 5.5 cm by 4.6 cm. From this data, what is the density of the metal?
15. A flask that weighs 400.0 grams is filled with 350 mL of liquid. The weight of the flask and liquid is found to be 803.55 grams. From this information, calculate the density of the liquid.
16. Calculate the density of a solution if 85.3 mL of the solution weighs 75.14 grams.
17. Find the mass of 850.0 mL of benzene if the density of benzene is 0.8765 g/mL.
18. A block of material has dimensions of 4.50 cm by 5.20 cm by 3.00 cm. The block weighs 1281 grams. Calculate the density of the material from this information.
19. A sample of iron shot is added to a graduated cylinder containing 95.50 mL of water. The water level rises to the 99.10 mark on the cylinder. The mass of the sample is 28.5 grams. From this information calculate the density of iron.
20. What volume of gold metal will weigh exactly 2500.0 grams? The density of gold is 19.32 g/cm<sup>3</sup>.