

Name: _____

Calculating Density, Mass and Volume

Answer the following questions. Remember to include units and significant figures in your answer.

1. Calculate the density of each of the following:

- a. 252 mL of a solution with a mass of 500. g
- b. 252 mL of a solution with a mass of 500 g
- c. A 6.75 g solid with a volume of 5.35 cm^3
- d. 50.0 mg of a gas which occupies a volume of 0.0064 L
- e. A substance with a mass of $7.55 \times 10^4 \text{ kg}$ and a volume of $9.50 \times 10^3 \text{ L}$

2. Calculate the volume of each of the following:

- a. 26.5 g of a solution with a density of 7.48 g/mL
- b. A 3.400 kg solid with a density of 10.74 g/mL

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3. Calculate the mass of each of the following:
 - a. A solid with a volume of 1.68 ft^3 and a density of 9.2 g/mL
 - b. An 80 mL aliquot of a solution with a density of 5.80 g/cm^3
 - c. A solid with a density of 2.65 g/mL and dimensions of $2.5 \text{ cm} \times 2.5 \text{ cm} \times 2.5 \text{ cm}$
4. The mass of an empty flask is 49.74 g . What is the mass of the flask filled with acetone ($d = 0.792 \text{ g/mL}$) if the same flask weighs 75.2 g when filled with water?
5. An empty flask has a mass of 123.4 g . When the flask is filled with water, the mass is 211.6 g . If 10.0 g of zinc ($d = 7.14 \text{ g/cm}^3$) are added to the flask filled with water (and the sides of the flask are dried from the displaced water) what is the new mass of the flask?