

Answer on Question #85468 – Chemistry – General Chemistry

A ball bearing with a density of 5.410 g/cm^3 and mass of 80.20 g is carefully dropped into a 100 ml graduated cylinder containing exactly 50.0 mL of water. What will the new reading be on the graduated cylinder?

Solution:

$$\rho = \frac{m}{V}$$

$$V = \frac{m}{\rho} = \frac{80.20 \text{ g}}{5.410 \text{ g/cm}^3} = 14.8 \text{ cm}^3 = 14.8 \text{ mL}$$

$$V(\text{water}) = 50.0 \text{ mL} + 14.8 \text{ mL} = 64.8 \text{ mL}$$

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