CALCULATING DENSITY

Density = \frac{\text{Mass}}{\text{Volume}}

\begin{align*}
\text{Sample 1} & : \\
\quad d_1 &= \frac{m (g)}{v (mL)} = \frac{54 \text{ g}}{45 \text{ mL}} = 1.2 \text{ g/mL} \\

\text{Sample 2} & : \\
\quad d_2 &= \frac{m (g)}{v (mL)} = \frac{132 \text{ g}}{120 \text{ mL}} = 1.1 \text{ g/mL}
\end{align*}

The question to ask yourself is “What is the mass of 1 mL of the solution?” That’s what density is . . . grams per milliliter, or grams per cubic centimeter.

To find out, divide the mass of the sample by the volume of the sample.

Another way to think about density is “I know the mass of 45 mL of this solution. One-45th of the sample is 1 mL. To find the mass of 1/45 of the sample, I divide the mass of the sample by 45.”