

**14** Water has a density of  $1.0 \text{ g cm}^{-3}$ .

Glycerine has a density of  $1.3 \text{ g cm}^{-3}$ .

A student measures out a volume of  $40 \text{ cm}^3$  of glycerine into a container.

The student adds water to the container to make a mixture of water and glycerine. Assume that the total volume of water and glycerine does not change when the two liquids are mixed.

Which volume of water needs to be added to make a mixture of density  $1.1 \text{ g cm}^{-3}$ ?

**A**  $4.0 \text{ cm}^3$

**B**  $8.0 \text{ cm}^3$

**C**  $34 \text{ cm}^3$

**D**  $80 \text{ cm}^3$

**15** Which of the following is the correct unit for the density of a substance?