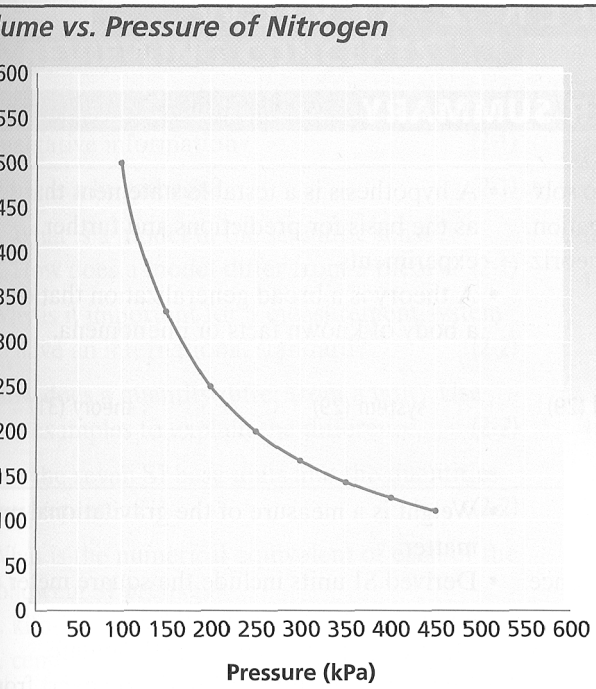

FIGURE 2-12 The graph of volume versus pressure shows an inversely proportional relationship. Note the difference between the shape of this graph and that of the graph in Figure 2-11.

TION REVIEW

The density of copper is listed as 8.94 g/cm^3. Two students each make three density determinations of samples of the substance. Student A's results are 7.3 g/mL, 9.4 g/mL, and 8.3 g/mL. Student B's results are 8.4 g/cm^3, 8.8 g/cm^3, and 8.0 g/cm^3. Compare the two sets of results in terms of precision and accuracy.

How many significant figures are there in each of the following measured values?

a. 6.002 cm
b. 0.0020 m
c. 10.0500 g
d. 7000 kg
e. 7000. kg

Round 2.6765 to two significant figures.

Carry out the following calculations.

a. 52.13 g + 1.7502 g
b. 12 m × 6.41 m
c. $\dfrac{16.25\ \text{g}}{5.1442\ \text{mL}}$

Perform the following operations. Express each answer in scientific notation.

a. $(1.54 \times 10^{-2}\ \text{g}) + (2.86 \times 10^{-1}\ \text{g})$
b. $(7.023 \times 10^{9}\ \text{g}) - (6.62 \times 10^{7}\ \text{g})$
c. $(8.99 \times 10^{-4}\ \text{m}) \times (3.57 \times 10^{4}\ \text{m})$
d. $\dfrac{2.17 \times 10^{-3}\ \text{g}}{5.022 \times 10^{4}\ \text{mL}}$

6. Write the following numbers in scientific notation.
a. 560 000
b. 33 400
c. 0.000 4120

7. A student measures the mass of a beaker filled with corn oil. The mass reading averages 215.6 g. The mass of the beaker is 110.4 g.
a. What is the mass of the corn oil?
b. What is the density of the corn oil if its volume is 114 cm^3?

8. Calculate the mass of a sample of gold that occupies 5.0×10^{-3} cm^3. The density of gold is 19.3 g/cm^3.

9. What is the difference between a graph representing data that are directly proportional and a graph of data that are inversely proportional?