1. A weather forecaster predicts the temperature will reach 31 °C. What is this temperature **(a)** in K, **(b)** in °F?

**2. a)** Calculate the density of mercury if 1.00 ✕ 102 g occupies a volume of 7.36 cm3.

**(b)** Calculate the volume of 65.0 g of liquid methanol (wood alcohol) if its density is 0.791 g/mL.

**(c)** What is the mass in grams of a cube of gold (density = 19.32 g/cm3) if the length of the cube is 2.00 cm?

1. The average speed of a nitrogen molecule in air at 25 °C is 515 m/s. Convert this speed to miles per hour.