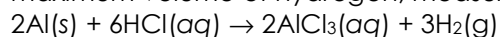


Practice Quiz: Gas Laws

If this were an actual quiz, each problem would be worth 4 points for a total of 20 points.

1. Calculate the density in g/L of gaseous SF₆ at 50.0°C and 650. torr. (You should be able to calculate the density of any gas at any temperature and pressure assuming ideal gas behavior.)

2. Aluminum metal shavings (10.0 g) are placed in 100. mL of 6.00 M hydrochloric acid. What is the maximum volume of hydrogen, measured at STP, which can be produced?



3. A 20.0-L container holds 15.3 mol of Cl₂ gas at 227°C.

- a. Calculate the pressure in atmospheres, assuming ideal behavior.

- b. Calculate the pressure in atmospheres, assuming van der Waals behavior. The van der Waals constants for Cl₂ are $a = 6.49 \text{ atm}\cdot\text{L}^2/\text{mol}^2$ and $b = 0.0562 \text{ L/mol}$. The van der Waals gas equation is:

$$\left(p + \frac{n^2a}{V^2}\right) (V - nb) = nRT$$

