Practice Questions for Final Exam

1. 5.0 g of nitrogen gas is reacted with 5.0 g of hydrogen gas to produce ammonia gas according to the chemical equation shown below. Which one of the following statements is **FALSE**?

$$N_2(g) + 3H_2(g) \longrightarrow 2NH_3(g)$$

   a) Nitrogen is the limiting reactant.
   b) The theoretical yield of ammonia is 6.1 g.
   c) 2.8 grams of hydrogen are left over.
   d) Hydrogen is the excess reactant.
   e) This reaction involves the conversion of 4 moles of gas to 2 moles of gas.

2. If the Earth's ozone (O_3) layer has a total volume of 1.00×10^{32} L, a partial pressure of 1.6×10^{-9} atm, and an average temperature of 230 K, how many ozone molecules are in the Earth's ozone layer?

   a) 2.3×10^{35} molecules
   b) 5.1×10^{35} molecules