1. Simplify $\frac{x^{3a+2}}{x^{a-1}}$ for $x$

   a. $x^{2a+3}$  
   b. $x^{2a-3}$  
   c. $x^{4a+1}$  
   d. $x^{2a+1}$

2. The average kinetic energy of the molecules in a sample of a gas is proportional to

   a. the pressure of the gas.  
   b. the volume of the gas.  
   c. the amount of gas.  
   d. the temperature of the gas.

3. The mass in grams of $N_2$ required to react with 2.00 moles of $H_2$ in the reaction below is

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

   a. 0.667  
   b. 4.67  
   c. 14.0  
   d. 18.7

4. For a sulfide ion, $S^{2-}$, with a mass number of 34, the number of protons, neutrons, and electrons is

   a. 16 protons, 16 neutrons, and 18 electrons.  
   b. 16 protons, 18 neutrons, and 16 electrons.  
   c. 16 protons, 18 neutrons, and 18 electrons.  
   d. 18 protons, 16 neutrons, and 18 electrons.

Answers: 1. d. 2. b. 3. d. 4. c.