Chapter 17 HW

Review Questions: 5, 10, 11, 16, 18, 19, 21, 24

Exercises: 1, 3, 4, 5, 13, 14, 15, 22, 29, 34, 36, 37

Problems: 2, 3, 4, 5, 7, 8, 9, 10

Additional:

1. How many grams are in…

a) 3 moles of He (helium)
b) 3 moles of CO_2 (carbon dioxide)
c) 3 moles of H_2O (water)
d) 3 moles of $C_6H_{12}O_6$ (a form of sugar)

2. How many molecules are in…

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3. Determine whether the reaction in problem 8 is endothermic or exothermic. The C=C bond energy is 611 kJ/mole.

4. Balance the following equations.

a. $Al + Cl_2 \rightarrow AlCl_3$
b. $SiO_2 + C \rightarrow Si + CO$
c. $BF_3 + H_2O \rightarrow HF + H_3BO_3$
d. $NH_4NO_3 \rightarrow N_2O + H_2O$

5. In photosynthesis, carbon dioxide (CO_2) is combined with water (H_20) to form glucose ($C_6H_{12}O_6$) and oxygen (O_2).

a. Write and balance the chemical equation.
b. How many moles of CO_2 are required to produce one mole of glucose?
c. How many grams of glucose are formed in a single reaction?

Extra Credit (5 points possible): Balance the equation below.

$(CH_3)_2N_2H_2 + N_2O_4 \rightarrow N_2 + H_2O + CO_2$