Stoich Practice Part II

(1) (b) $? \text{ mol } N_2 \times \frac{2 \text{ mol } NH_3}{1 \text{ mol } N_2} = \underline{\quad ? \quad} \text{ mol } NH_3$

(c) $\frac{3 \text{ mol } H_2}{1 \text{ mol } N_2}$ (d) $\frac{1 \text{ mol } N_2}{3 \text{ mol } H_2}$ (e) $\frac{3 \text{ mol } H_2}{2 \text{ mol } NH_3}$

(f) $\frac{2 \text{ mol } NH_3}{3 \text{ mol } H_2}$

(2) $6.00 \text{ mol } NH_3 \times \frac{3 \text{ mol } H_2}{2 \text{ mol } NH_3} = \underline{9.00} \text{ mol } H_2$

(3) $18.0 \text{ mol } N_2 \times \frac{2 \text{ mol } NH_3}{1 \text{ mol } N_2} = \underline{36.0} \text{ mol } NH_3$

(4) $18.0 \text{ mol } H_2 \times \frac{2 \text{ mol } NH_3}{3 \text{ mol } H_2} = \underline{12.0} \text{ mol } NH_3$

(5) (a) $76.9 \text{ mol } NH_3 \times \frac{3 \text{ mol } H_2}{2 \text{ mol } NH_3} = \underline{115} \text{ mol } H_2$

(b) $76.9 \text{ mol } NH_3 \times \frac{1 \text{ mol } N_2}{2 \text{ mol } NH_3} = \underline{38.5} \text{ mol } N_2$

(c) $76.9 \text{ mol } NH_3 \times \frac{3 \text{ mol } H_2}{2 \text{ mol } NH_3} \times \frac{2.02 \text{ g } H_2}{1 \text{ mol } H_2} = \underline{233} \text{ g } H_2$

(d) $76.9 \text{ mol } NH_3 \times \frac{1 \text{ mol } N_2}{2 \text{ mol } NH_3} \times \frac{28 \text{ g } N_2}{1 \text{ mol } N_2} = \underline{1080} \text{ g } N_2$

(6) (a) periodic table, coefficients in equ., periodic table

(b) $38.1 \text{ g } H_2 \times \frac{1 \text{ mol } H_2}{2.02 \text{ g } H_2} \times \frac{2 \text{ mol } NH_3}{3 \text{ mol } H_2} \times \frac{17.0 \text{ g } NH_3}{1 \text{ mol } NH_3} = \underline{214} \text{ g } NH_3$

(7) $15.3 \text{ g } C_6H_{12}O_6 \times \frac{1 \text{ mol } C_6H_{12}O_6}{180 \text{ g}} \times \frac{6 \text{ mol } CO_2}{1 \text{ mol } C_6H_{12}O_6} \times \frac{44.0 \text{ g}}{1 \text{ mol } CO_2} = \underline{22.4} \text{ g } CO_2$