

(5) (a) $H_2S = 34.1 \text{ g/mol}$ $H = \frac{2}{34.1} \times 100 = 5.9\%$

$S = \frac{32.1}{34.1} \times 100 = 94.1\%$

(b) $(NH_4)_2CO_3 = 124 \text{ g/mol}$ $N = \frac{28}{124} \times 100 = 22.6\%$

$H = \frac{8}{124} \times 100 = 6.5\%$

$C = \frac{24}{124} \times 100 = 19.4\%$

$O = \frac{64}{124} \times 100 = 51.6\%$

(c) $Mg(OH)_2 = 58.3 \text{ g/mol}$ $Mg = \frac{24.3}{58.3} \times 100 = 41.7\%$

$O = \frac{32}{58.3} \times 100 = 54.9\%$

$H = \frac{2}{58.3} \times 100 = 3.4\%$

(6) (a) $H_2S : 94.1\% S$ mass of S: $.941 \times 3.54 = 3.33 \text{ g S}$

(b) $(NH_4)_2CO_3 : 22.6\% N$ $.226 \times 25.0 = 5.65 \text{ g N}$

(c) $Mg(OH)_2 : 41.7\% Mg$ $.417 \times 97.4 = 40.6 \text{ g Mg}$

(7) (a) $CH_2O = 30 \text{ g/mol}$ $\frac{90}{30} = 3$ $(CH_2O)_3 = C_3H_6O_3$

(b) $HgCl_2 = 236.1$ $\frac{472.2}{236.1} = 2$ $(HgCl_2)_2 = Hg_2Cl_4$

(c) $C_3H_5O_2 = 73$ $\frac{146}{73} = 2$ $(C_3H_5O_2)_2 = C_6H_{10}O_4$