Problem Set Chapter 3, Part 2

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1. Balance the following:

   (a) $Zn(C_2H_3O_2)_2 + Na_3PO_4 \rightarrow NaC_2H_3O_2 + Zn_3(PO_4)_2$

   $$3Zn(C_2H_3O_2)_2 + 2Na_3PO_4 \rightarrow 6NaC_2H_3O_2 + Zn_3(PO_4)_2$$

   (b) $Ca_{10}F_2(PO_4)_6 + H_2SO_4 \rightarrow HF + Ca(H_2PO_4)_2 + CaSO_4$

   $$Ca_{10}F_2(PO_4)_6 + 7H_2SO_4 \rightarrow 2HF + 3Ca(H_2PO_4)_2 + 7CaSO_4$$

   (c) $C_2H_6 + O_2 \rightarrow CO_2 + H_2O$

   $$2C_2H_6 + 7O_2 \rightarrow 4CO_2 + 6H_2O$$

2. Calculate the number of grams of both products when 17.8[g] of C_3H_8 is combusted.

   (a) $C_3H_8 + 5O_2 \rightarrow 4H_2O + 3CO_2$

   $$\frac{17.8[\text{g}]}{44[\text{g}\,\text{mol}^{-1}]} =$$