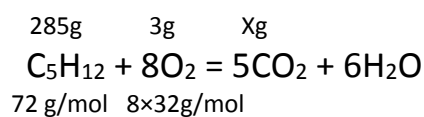


## Answer on Question #59985, Chemistry / General Chemistry

1. Mr. Rogers has  $2.85 \times 10^2$  g of pentane,  $C_5H_{12}$ , and it reacts with 3.00g of oxygen gas, what is the mass of carbon dioxide gas produced?

**Solution:**



$$n = \frac{m}{M}$$

$$n(C_5H_{12}) = \frac{285}{72} = 3.985 \text{ mol - excess}$$

$$n(O_2) = \frac{3}{8 \times 32} = 0.117 \text{ mol - limiting reactant}$$

calculate mass of  $CO_2$ :

$$n(8O_2) = n(5CO_2) = \frac{m}{M}(O_2) = \frac{m}{M}(CO_2)$$

$$\frac{3g}{8 \times 32g/mol} = \frac{Xg}{5 \times 44g/mol}$$

$$X = \frac{3g \times 5 \times 44g/mol}{8 \times 32g/mol} = 2.578g$$

**Answer:** mass of  $CO_2 = 2.578g$ .