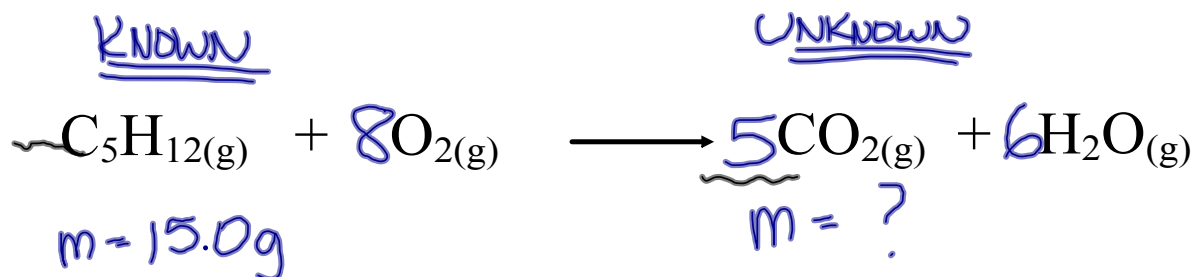


What mass of carbon dioxide would be produced from the burning of 15.0g of pentane?



Step 1: Moles Known

$$15.0\text{g C}_5\text{H}_{12} \times \frac{1 \text{ mol C}_5\text{H}_{12}}{72.17 \text{ g C}_5\text{H}_{12}} = 0.2078 \text{ mol C}_5\text{H}_{12}$$

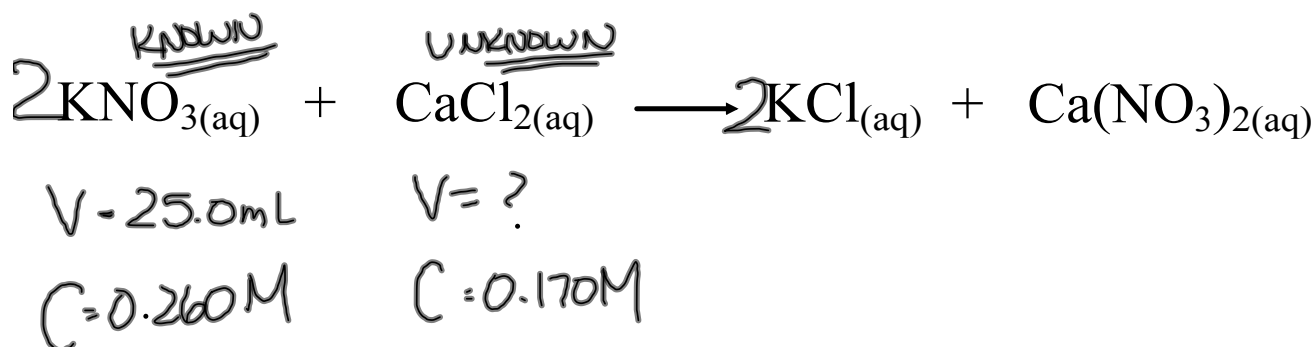
Step 2: Moles Unknown

$$0.2078 \text{ mol C}_5\text{H}_{12} \times \frac{5 \text{ mol CO}_2}{1 \text{ mol C}_5\text{H}_{12}} = 1.0392 \text{ mol CO}_2$$

Step 3: Mass Unknown

$$1.0392 \text{ mol CO}_2 \times \frac{44.01 \text{ g CO}_2}{1 \text{ mol CO}_2} = \boxed{45.7 \text{ g CO}_2}$$

What volume of 0.170M CaCl<sub>2</sub> is needed to react completely with 25.0 mL of 0.260M KNO<sub>3</sub>?



Step 1: Moles Known

$$0.0250 \text{ L KNO}_3 \times \frac{0.260 \text{ mol KNO}_3}{1 \text{ L KNO}_3} = 0.0065 \text{ mol KNO}_3$$

Step 2: Moles Unknown

$$0.0065 \text{ mol KNO}_3 \times \frac{1 \text{ mol CaCl}_2}{2 \text{ mol KNO}_3} = 0.00325 \text{ mol CaCl}_2$$

Step 3: Volume Unknown

$$0.00325 \text{ mol CaCl}_2 \times \frac{1 \text{ L CaCl}_2}{0.170 \text{ mol CaCl}_2} = \boxed{0.0191 \text{ L CaCl}_2}$$

$$C = \frac{n}{V}$$

$$n = C \times V$$

$$V = \frac{n}{C}$$

# **Review Worksheet**

**Test - tomorrow**