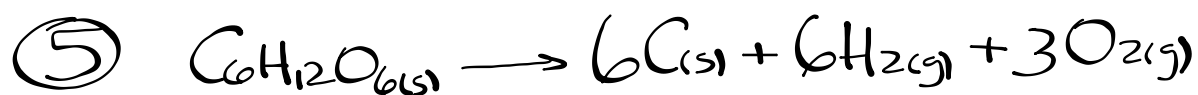


Homework - Reactions Worksheet

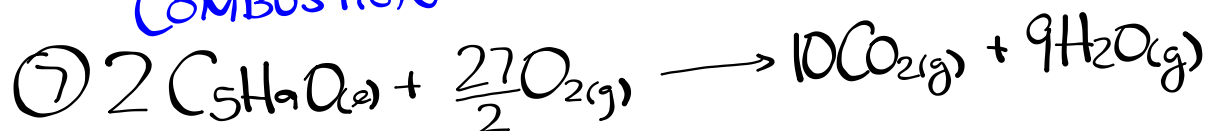
DECOMP.



DECOMP.



COMBUSTION

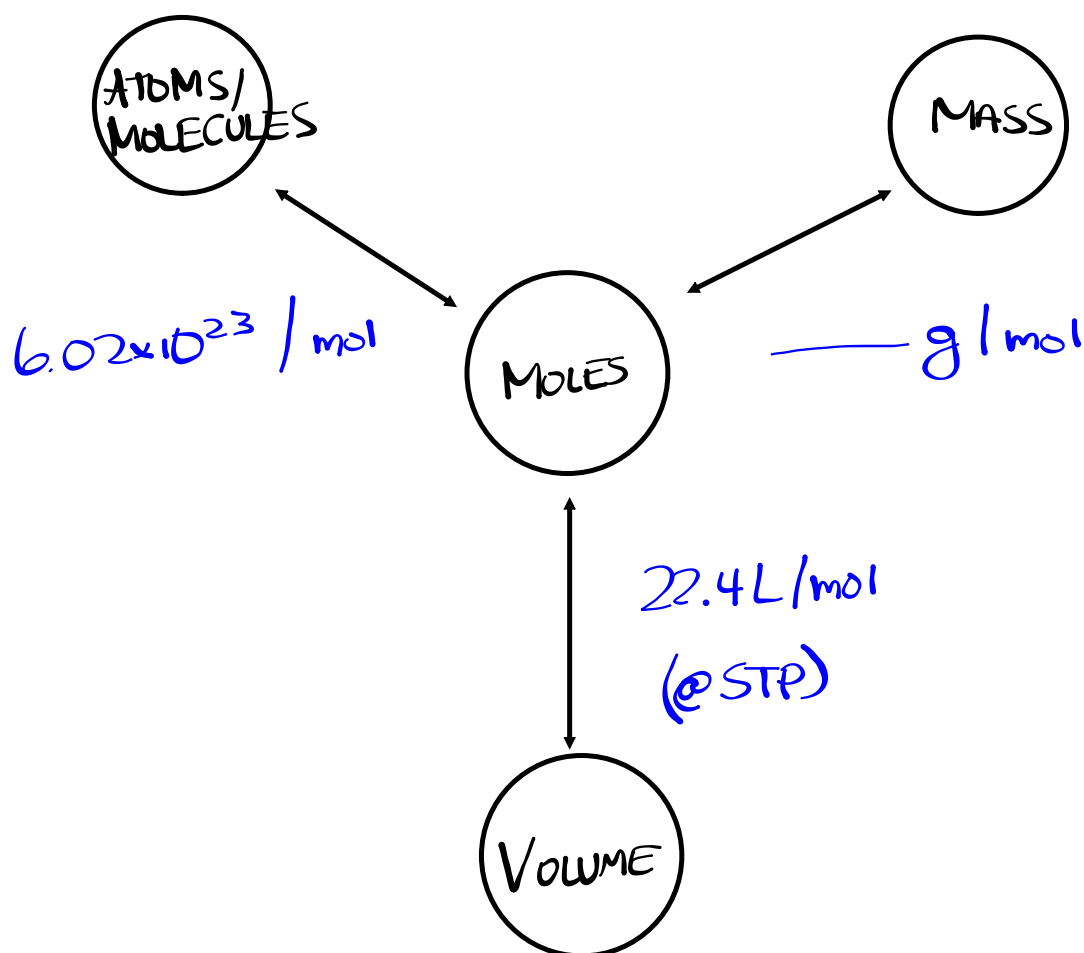


4

27

20

18




Determine the number of **atoms** found in 2.78 moles of **carbon**.

$$2.78 \text{ mol C} \times \frac{6.02 \times 10^{23} \text{ atoms C}}{1 \text{ mol C}} = 1.67 \times 10^{24} \text{ atoms C}$$

Determine the number of **molecules** found in 6.09 moles of **NH₃**.

Determine the number of atoms found in 12.6 moles of H₂O.

$$12.6 \text{ mol H}_2\text{O} \times \frac{6.02 \times 10^{23} \text{ molecules H}_2\text{O}}{1 \text{ mol H}_2\text{O}} \times \frac{3 \text{ atoms}}{1 \text{ molecules H}_2\text{O}}$$


$$= 2.28 \times 10^{25} \text{ atoms}$$

Determine the number of atoms found in 2.78 moles of carbon.

Calculate the number of moles contained in 45.0g of LiNO_3 .

$$45.0\text{g LiNO}_3 \times \frac{1 \text{ mol LiNO}_3}{68.95 \text{ g LiNO}_3} = \boxed{0.653 \text{ mol LiNO}_3}$$

$$\text{LiNO}_3 \rightarrow (1 \times 6.94) + (1 \times 14.01) + (3 \times 16.00) = 68.95 \text{ g/mol}$$

$$\frac{45.0\text{g}}{68.95 \text{ g/mol}} = 0.653 \text{ mol}$$

$$68.95 \text{ g/mol} = \frac{45.0\text{g}}{n}$$

Calculate the volume of 4.58 moles of oxygen gas at STP conditions.

$$4.58 \text{ mol O}_2 \times \frac{22.4 \text{ L O}_2}{1 \text{ mol O}_2} = \boxed{103 \text{ L O}_2}$$

Determine the percent composition of CaSO₄.

$$\begin{array}{c} \text{Ca} \qquad \qquad \qquad \text{S} \qquad \qquad \qquad \text{O} \\ \text{CaSO}_4 = (1 \times 40.08) + (1 \times 32.06) + (4 \times 16.00) \\ \qquad \qquad \qquad = 136.14 \text{ g/mol} \end{array}$$

Worksheet