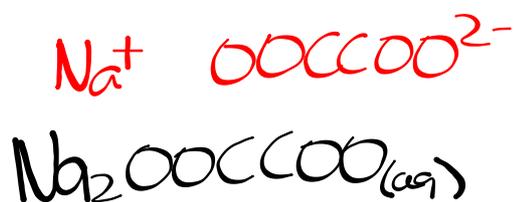
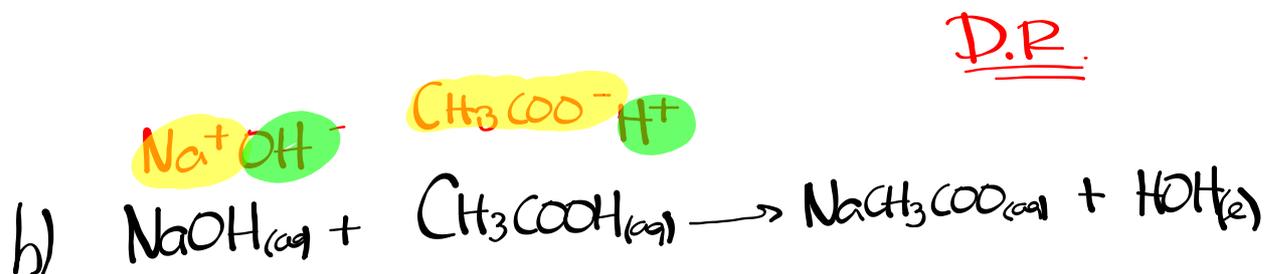
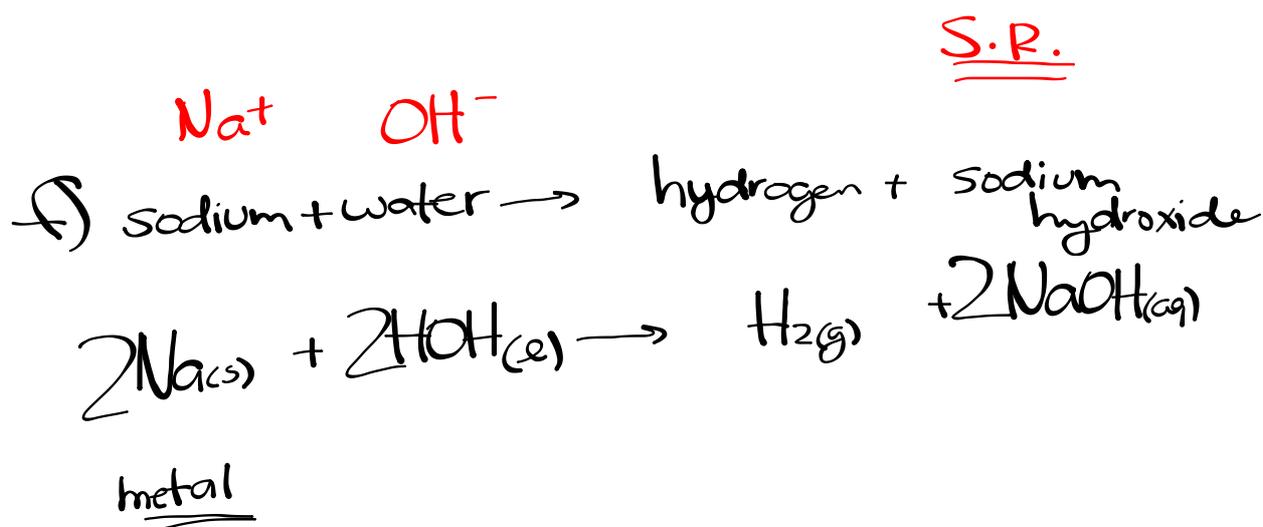


Homework - Reactions Worksheet



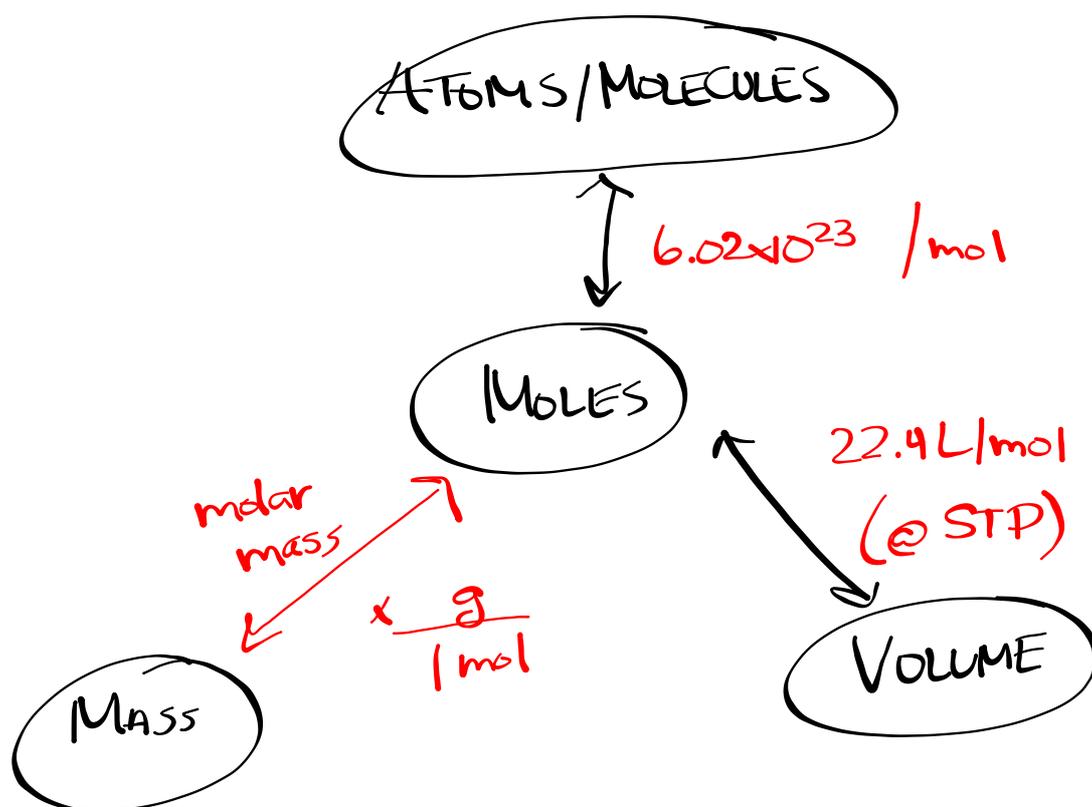
Determine the number of molecules found in 6.09 moles of NH_3 .

$$6.09 \text{ mol } \text{NH}_3 \times \frac{6.02 \times 10^{23} \text{ molecules } \text{NH}_3}{1 \text{ mol } \text{NH}_3} = 3.67 \times 10^{24} \text{ molecules } \text{NH}_3$$

Determine the number of atoms found in 12.6 moles of H_2O .

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

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



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

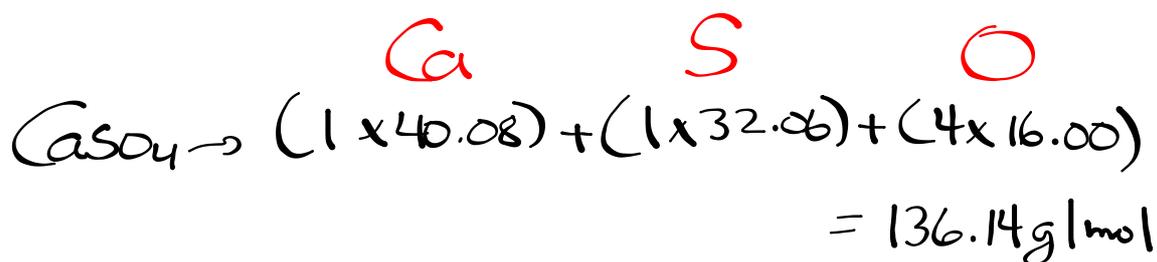
$$45.0\text{g LiNO}_3 \times \frac{1\text{ mol LiNO}_3}{68.95\text{g LiNO}_3} = 0.653\text{ mol LiNO}_3$$

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

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

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

Determine the percent composition of CaSO_4 .



$$\% \text{Ca} = \frac{(1 \times 40.08) \text{ g/mol}}{136.14 \text{ g/mol}} \times 100\%$$

$$\% \text{Ca} = 29.4\%$$

$$\% \text{S} = \frac{(1 \times 32.06) \text{ g/mol}}{136.14 \text{ g/mol}} \times 100\%$$

$$\% \text{S} = 23.5\%$$

$$\% \text{O} = \frac{(4 \times 16.00) \text{ g/mol}}{136.14 \text{ g/mol}} \times 100\%$$

$$\% \text{O} = 47.0\%$$

Worksheet