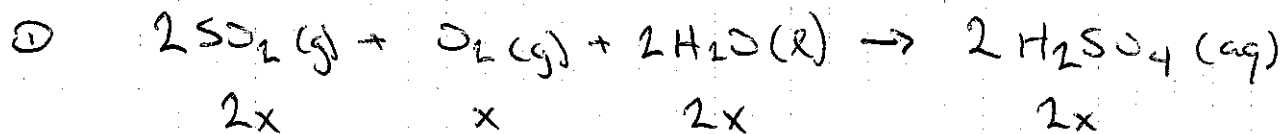


# Stoichiometry WS # 1

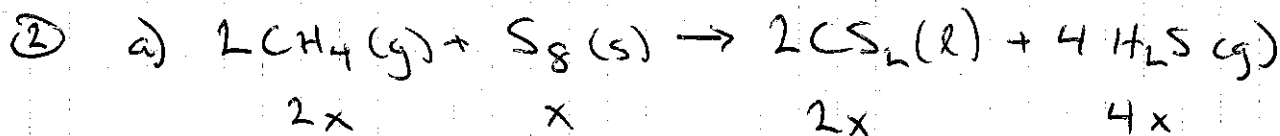


$$\text{SO}_2 = 2x = 12.5$$

$$x = \frac{12.5}{2} = 6.25 \text{ mol}$$

$$\text{H}_2\text{SO}_4 = 2x = 2(6.25) = \boxed{12.5 \text{ mol}}$$

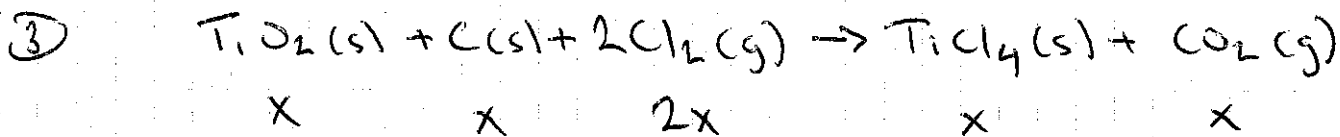
$$\text{O}_2 = x = \boxed{6.25 \text{ mol}}$$



$$\text{b) } \text{S}_8 = x = 1.5 \text{ mol}$$

$$\text{CS}_2 = 2x = 2(1.5) = \boxed{3 \text{ mol}}$$

$$\text{c) } \text{H}_2\text{S} = 4x = 4(1.5) = \boxed{6 \text{ mol}}$$



$$\text{TiO}_2 = x = 1.25 \text{ mol}$$

$$\text{Cl}_2 = 2x = 2(1.25) = 2.5 \text{ mol}$$

$$2.5 \text{ mol} \times 71 \text{ g/mol} = \boxed{177.5 \text{ g}} \text{ Cl}_2$$

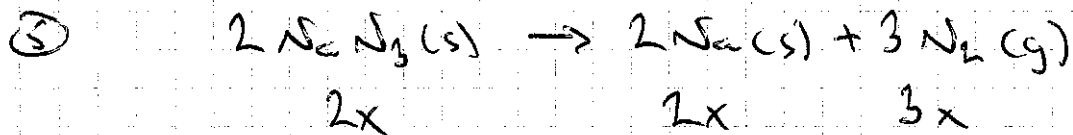


$$\text{NaCl} = 2x = 2.5 \text{ mol}$$

$$x = \frac{2.5}{2} = 1.25 \text{ mol}$$

$$\text{Cl}_2 = x = 1.25 \text{ mol}$$

$$1.25 \text{ mol} \times 71 \text{ g/mol} = \boxed{88.75 \text{ g}} \text{ Cl}_2$$



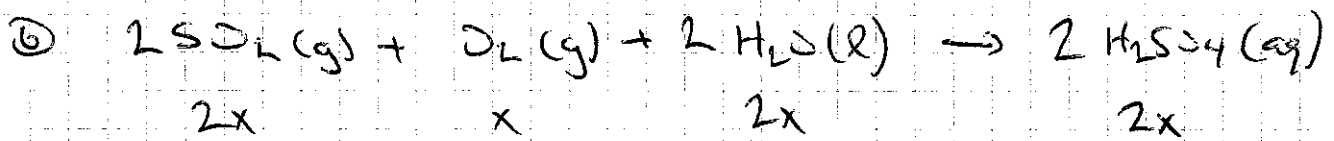
$$\text{NaN}_3: \frac{100 \text{ g}}{65 \text{ g/mol}} = 1.538 \text{ mol}$$

$$\text{NaN}_3 = 2x = 1.538$$

$$x = \frac{1.538}{2} = 0.769 \text{ mol}$$

$$\text{N}_2 = 3x = 3(0.769) = 2.308 \text{ mol}$$

$$2.308 \text{ mol} \times 28 \text{ g/mol} = \boxed{64.6 \text{ g}} \text{ N}_2$$



$$\text{SO}_2 = \frac{2.5 \text{ g}}{64.1 \text{ g/mol}} = 0.039 \text{ mol}$$

$$\text{SO}_2 = 2x = 0.039$$

$$x = \frac{0.039}{2} = 0.0195 \text{ mol}$$

$$\text{H}_2\text{SO}_4 = 2x = 2(0.0195) = 0.039 \text{ mol}$$

$$0.039 \text{ mol} \times 98.12 \text{ g/mol} = \boxed{3.83 \text{ g}} \text{ H}_2\text{SO}_4$$