

Section 9.1 - 9.2 Complete the following assignment in your class notebook with the heading: Stoichiometry

Key

1.) Given the balanced chemical equation  $\text{Br}_2 + 2\text{NaI} \rightarrow 2\text{NaBr} + \text{I}_2$

a. how many moles of sodium bromide could be produced from 0.172 moles of bromine?

$$0.172 \text{ mol Br}_2 \times \frac{2 \text{ mol NaBr}}{1 \text{ mol Br}_2} = \boxed{0.344 \text{ mol NaBr}}$$

b. how many grams of sodium iodide are required to produce 28.2 grams of iodine?

$$28.2 \text{ g I}_2 \times \frac{1 \text{ mol I}_2}{253.81 \text{ g I}_2} \times \frac{2 \text{ mol NaI}}{1 \text{ mol I}_2} \times \frac{149.89 \text{ g NaI}}{1 \text{ mol NaI}} = \boxed{33.3 \text{ g NaI}}$$

c. how many grams of bromine are required to react with 98.2 grams of sodium iodide?

$$98.2 \text{ g NaI} \times \frac{1 \text{ mol NaI}}{149.89 \text{ g NaI}} \times \frac{1 \text{ mol Br}_2}{2 \text{ mol NaI}} \times \frac{159.80 \text{ g Br}_2}{1 \text{ mol Br}_2} = \boxed{52.3 \text{ g Br}_2}$$