

1. What does a balanced equation tell you that an unbalanced equation does not? (2 points)
2. Using this balanced equation: $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$, complete the following Mole Ratios: (3 Points)

_____ moles of Na = _____ moles of H_2O

_____ moles of Na = _____ moles of H_2

_____ moles of Na = _____ moles of NaOH

_____ moles of H_2O = _____ moles of NaOH

_____ moles of H_2O = _____ moles of H_2

_____ moles of NaOH = _____ moles of H_2

3. According to the following balanced equation, $2\text{Fe} + 3\text{Cl}_2 \rightarrow 2\text{FeCl}_3$, how many moles of Chlorine (molar mass = 70.906 g/mol) will be needed to produce 10.9 moles of Iron (III) Chloride (FeCl_3 , molar mass = 162.204 g/mol)? (3 Points)
4. According to the following balanced equation, $2\text{Fe} + 3\text{Cl}_2 \rightarrow 2\text{FeCl}_3$, how many moles of iron (atomic mass = 55.845 g/mol) will be needed to produce 1.89 moles of Iron (III) Chloride (FeCl_3 , molar mass = 162.204 g/mol)? (3 Points)
5. Using this balanced equation, $2\text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$ how many grams of magnesium (Mg atomic mass = 24.305 g/mol) will be used if 2.14 moles of magnesium oxide (MgO , molar mass = 40.304 g/mol) are reacted? (5 Points)

Chemistry CP
Stoichiometry Quiz #1

Name: _____

6. Using this balanced equation, $2 \text{Mg} + \text{O}_2 \rightarrow 2\text{MgO}$ how many grams of oxygen (O_2 molar mass = 31.998 g/mol) will be used if 3.62 moles of magnesium oxide (MgO , molar mass = 40.304 g/mol) are reacted? (5 Points)
7. Using this balanced equation, $2\text{BCl}_3 + 3 \text{H}_2 \rightarrow 2 \text{B} + 6\text{HCl}$, how many grams of hydrochloric acid (HCl , Molar mass = 36.4609 g/mol) can be produced from 4.65 grams of Hydrogen gas (molar mass= 1.0158 g/mol)? (7 Points)
8. Using this balanced equation, $2\text{BCl}_3 + 3 \text{H}_2 \rightarrow 2 \text{B} + 6\text{HCl}$, how many grams of hydrochloric acid (HCl , Molar mass = 36.4609 g/mol) can be produced from 17.6 grams of boron trichloride (molar mass= 117.17 g/mol)? (7 Points)