NAME: **HONORS CHEMISTRY**

SECTION: Stoichiometry Calculations Using Molarity

Answer the following questions. Show all your work in the space provided. Use factor label and report your answer with the appropriate unit and correct number of significant figures.

Molarity formula:

1. Sulfuric acid, H2SO4, reacts with copper in a single replacement reaction to form copper(II) sulfate and hydrogen gas. What mass of copper(II) sulfate will be recovered if 188 mL of 0.500 M sulfuric acid solution reacts with excess copper metal?

Cu(s) + H2SO4(aq) → CuSO4(aq) + H2(g)

1. A 0.25M solution of silver nitrate is combined with excess sodium chloride solution, producing 7.6 grams of silver chloride precipitate. Sodium nitrate is also formed in the reaction. What volume, in mL, of the silver nitrate solution is required?

AgNO3(aq) + NaCl(aq) → AgCl(s) + NaNO3(aq)

1. How many grams of MgCl2 are produced when 650 mL of 3.0M hydrochloric acid solution are reacted with excess magnesium hydroxide solution, Mg(OH)2?

Balanced equation:

1. Determine the volume of 0.250 M H2SO4 needed to react with 5.00 g of zinc metal to produce hydrogen gas and zinc sulfate.

Balanced equation:

Answers

1. 15.0 g
2. 210 mL
3. 93 g
4. 306 mL