



Name: _____ Period: _____

Assigned on Tuesday, November 04, 2025

Replacement for 11.3 and 12.1 Assignments (Optional)

Due Friday, November 07, 2025

1. a. Write the balanced equation for the reaction of sodium metal with fluorine gas.
b. How many moles of fluorine gas are needed to react with 3.12 mol of sodium metal?
c. How many moles of sodium fluoride will be produced when 0.555 mol of fluorine gas react with excess sodium metal?
2. a. Write the balanced equation for the burning of propane, C_3H_8 .
b. Calculate the mass of propane burned that produces 45.2 g of CO_2 .
c. What mass of water will be produced given the same situation as problem b.
3. a. If 30.4 g of NaOH is dissolved in water to make 450 mL of solution, what is the molarity of the solution?
b. How many moles of $CuSO_4$ are contained in 45.0 mL of a 1.50 M $CuSO_4$ solution?
c. What volume of 0.350 M NaCl contains 2.55 moles of NaCl?
d. What mass of solid KI is needed to produce 4.5 L of 0.35 M KI solution?
e. What volume of 2.50 M $MgSO_4$ solution contains 13.2 g of $MgSO_4$?
3. a. Write the balanced equation for the reaction between a solution of $Cu(NO_3)_2$ and a solution of NaOH. Be sure to identify the precipitate.
b. If 0.823 L of 4.10 M $Cu(NO_3)_2$ is reacted with excess NaOH solution, what mass of $Cu(OH)_2$ will be produced?
c. If you need 42.7 g of $Cu(OH)_2$, what volume of 0.56 M NaOH is needed if it is reacted with excess $Cu(NO_3)_2$?
d. What volume of 0.466 M NaOH solution will react with 0.823 L of 4.10 M $Cu(NO_3)_2$?

Answers

1. b. 1.56 mol; c. 1.11 mol

2. b. 15.1 g; c. 24.7 g

3. a. 1.7 M; b. 0.0675 mol; c. 7.29 L; d. 260 g; e. 0.0439 L

4. b. 331 g; c. 1.6 L; d. 14.5 L