

Mole Ratios

Data Table

Mass of silver nitrate	
Mass of copper wire (initial)	
Observations—Reaction of copper and silver nitrate	
Mass of empty 100-mL beaker (step 10)	
Mass of leftover copper wire	
Appearance of leftover copper wire	
Mass of beaker plus silver product (step 22)	

Post-Lab Calculations and Analysis *(Show all work on a separate sheet of paper.)*

1. Calculate the mass and moles of copper wire that reacted in this experiment.
2. Calculate the mass and moles of silver metal produced in the reaction.
3. Determine the mole ratio—the ratio of the number of moles of silver to the number of moles of copper. *Note:* Round the result to the nearest whole number.
4. Use the silver/copper mole ratio to write the balanced chemical equation for the reaction of copper and silver nitrate.
5. Did all of the silver nitrate react in this experiment? Show all calculations and explain your reasoning.
6. What factors might account for the answer to Question #5?
7. Silver is a precious metal. The price of silver fluctuates daily as it is traded on the open market. Look up the current market value of silver in the financial section of the daily newspaper or on the Internet and record the price. *Note:* The price of metals is usually quoted per Troy ounce, where 1 Troy ounce = 31.0 grams.
8. Calculate the current market value of the silver produced in this experiment.