

Name _____

Period _____

Section 16.2 Guided Reading (Part 2) - Dilutions: Use textbook page 528-529 to answer the following.

1. Diluting a solution does two things. What are they?
 - a.
 - b.

2. Review: What is the formula for molarity?

Rearrange this formula to solve for number of moles of solute.

3. Because the total number of moles of solute remains unchanged during a dilution, the molarity formula can be used to write a formula for dilutions. What is this formula?
4. Read Sample Problem 16.4 on page 529, then answer the following:
 - a. How many milliliters of a solution of 4.00M KI are needed to prepare 250.0 mL of 0.760M KI?
 - b. How could you prepare 250.0 mL of 0.20M NaCl from a solution of 1.0M NaCl?

Practice: Dilutions and Molarity

1. What volume of 12 M HCl must be used to prepare 0.75 L of 1.25 M HCl?
2. What is the molarity of a solution made by diluting 100.0 mL of 12.4M acid to 250.0 mL?
3. What is the resulting molarity of a solution prepared by diluting 125 mL of 2.5 M HNO₃ with 175 mL of water?
4. Review: How many moles of HNO₃ are in 5.50 L of a 2.50M solution?
5. Review: What volume in milliliters will result from a 1.25M solution of KCl being made from 3.20 moles of the salt?
6. CHALLENGE: A 350.0 mL volume of a NaNO₃ solution was prepared by diluting 125.0 mL of an 8.5M NaNO₃ solution. What mass of sodium nitrate is in the resulting solution?