

**Perform the following calculations involving molarity. The molarity equation is on Chart B.**

1. What is the molarity of an aqueous solution containing 0.3 mol  $\text{Na}_2\text{SO}_4$  in a 0.5 L solution?
2. What is the molarity of an aqueous solution containing 1.2 mol  $\text{FeCl}_3$  in a 400 mL solution? [Hint: what unit must volume be in?]
3. What is the molarity of an aqueous solution containing 25.5 g of  $\text{KBr}$  in a 0.25 L solution? [Hint: what unit must mass be converted to?]
4. How many moles of  $\text{LiF}$  are in 0.15 L of a 1.5 M aqueous solution? [Hint: rearrange the formula for molarity and solve for moles of solute.]
5. What mass of  $\text{CaCl}_2$  is present in 50 mL [convert!] of a 0.20 M aqueous solution? [Hint: find moles first!]

6. What is the volume of a 0.35 M aqueous solution containing 0.07 moles of  $\text{KNO}_3$ ? [Hint: set up the formula for molarity and rearrange to solve for volume.]
  
7. If you dilute 100 mL of a 0.15 M NaOH solution to a final volume of 150 mL, what will the molarity of the diluted solution be? [Remember, for dilutions you do not need to convert to L.]
  
8. What volume of a 0.15 M NaOH stock solution will you need to make 250 mL of a 0.030 M solution?
  
9. You have 345 mL of a 1.5 M NaCl solution. If you boil the water until the volume of the solution is reduced to 250 mL, what will the molarity of the solution be?
  
10. What volume of 0.050 M HCl solution can be made by diluting 250. mL of 10. M HCl stock solution?