- 1. Calculate the following with your scientific calculator:
 - (a) $(3.21 \times 10^{-4})(5.6 \times 10^{-2}) =$
 - (b) $\frac{1.2 \times 10^5}{5.21 \times 10^{-3}} =$
 - (c) $-log(2.1 \times 10^{-7}) =$
 - (d) $10^{-4.23} =$
- 2. The concentration of ethanol in gasoline is 0.22 M.
 - (a) Calculate the molar mass of ethanol (C_2H_5OH).
 - (b) Determine how many moles of ethanol are present in 1.0 L of gasoline.
 - (c) Determine how many moles of ethanol are present in 15.0 mL of gasoline.
 - (d) Determine how many grams of ethanol are present in 15.0 mL of gasoline.
- 3. Determine the number of grams of KCl in 350 mL of a 0.25 M solution of potassium chloride.

4. Calculate the concentration (in M) of a salt solution that was prepared by adding water to 18.65 g of NaCl to give a final volume of 250.0 mL.

5. 100.0 mL of a 0.22 M solution was diluted to 500.0 mL. What is the concentration of the new solution?

6. If a solution is diluted, say by adding 100 mL of solvent, does the number of moles of solute change? Does the concentration increase, decrease, or stay the same?