**Percent by Volume Problems % v/v**

**Volume Percent**

* is usually used when the solution is made by **mixing two liquids**.
* Rubbing alcohol is generally 70% by **volume** isopropyl alcohol.
* That **means** that 100 ml of solution contains 70 mL of isopropyl alcohol.

 Volume Percent = volume of solute (mL) x 100

 volume of solution (mL)

**1)** What would be the percent by volume of a solution made with 45.0 mL of alcohol with 1 25.0 mL of water? **(26.5 % v/v)**

**2)** What would be the concentration in percent volume of a solution made with 67.0 mL of acetone mixed with water to a total volume of 250.0 mL? **(26.8 % v/v)**

**3)** How would you make 300.0 mL of a 15 % by volume solution of hydrogen peroxide? **(45.0 mL of hydrogen peroxide)**

**4)** What volume of **water** would be used to make 280.0 mL of a 30. % alcohol solution?

 **(196 mL of water)**

**5)** A solution is prepared by dissolving 90 milliliters of pure hydrogen peroxide in enough water to make 3000 milliliters of solution.

 What is the concentration of the hydrogen peroxide solution? **(3.0 % v/v)**

**6)** Binge drinking is considered to be 5 or more drinks on one occasion for a male and 4 or more drinks for a female.

 A standard drink is the following:

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 Large wine glasses hold 250.0 mL or 1 cup, which is **one third** of a bottle of wine.

 What is the volume of a standard bottle of wine? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Most wines have an alcohol concentration of 12 % v/v. If a male binge drinks, what volume of alcohol has he consumed?