

Chem12 Molarity Problems : W.S.-40

- 1) Concentrations are usually measured in units of _____ .
- 2) Write out in words the meaning of : $[\text{CaCl}_2] = 3.5 \text{ M}$

- 3) Determine the concentration (in mol/l) of the following solutions.
 - a) 0.78 moles of CaCl_2 are dissolved in 2.7 liters of solution.
 - b) 0.350 moles of $\text{Sr}(\text{OH})_2$ are dissolved in 200.0 mL of solution.
 - c) 2.00 L of aqueous solution containing 365 g of NaNO_3 .
 - d) 23.0 g of KNO_3 in 300.0 mL of solution.
 - e) 5.0 g of NaOH in 50.0 mL of solution.
- 4) Find the number of moles of solute in each solution.
 - a) 3.2 L of 0.40 M NaF .
 - b) 0.50 L of 3.0 M Na_2SO_4 .
 - c) 25 mL of 0.65 M lead(II)nitrate.
- 5) Find the mass of each solute required in problem 4.
 - a)
 - b)
 - c)
- 6) Find the volume of solution required.
 - a) 0.48 M $\text{Ca}(\text{NO}_3)_2(\text{aq})$ is prepared from 0.27 moles of $\text{Ca}(\text{NO}_3)_2(\text{s})$.
 - b) 1.20 M $\text{NaCl}(\text{aq})$ is prepared from 35.0 g of $\text{NaCl}(\text{s})$.
 - c) 5.0 M $\text{BeCl}_2(\text{aq})$ is prepared from 150.0 g of $\text{BeCl}_2(\text{s})$.

Answers : 1) mol/L, or M, 2) The concentration of the calcium chloride solution is 3.5 moles per liter of water., 3)a) 0.29 M, b) 1.75 M, c) 2.15 M, d) 0.758 M, e) 2.5 M, 4)a) 1.3 mol, b) 1.5 mol, c) 0.016 mol, 5)a) 54 g, b) 210 g, c) 5.4 g, 6)a) 0.56 L , b) 0.499 L, c) 0.38 L.