Concentration Units
Molarity (M) (mol solute)/(L of solution)
% by mass   (g solute/g of solution) x 100 %
Molality (m) (mol solute)/kg of solvent)
mole fraction (X) (mol solute)/(total moles)

1. Calculate the percentage by mass of the solute in a solution of 5.50g of NaBr in 78.2 g of solution

2. Calculate the amount of water that must be added to 5.00g of urea $(NH_2)_2CO$ to make a 16.2 percent by mass solution

3. Calculate the molality of a solution that contains 14.3 g of sucrose $(C_{12}H_{22}O_{11})$ in 676 g of water.

4. Calculate the molality of a 1.22 M sucrose solution. The density of the solution is 1.12 g/mL.

5. What is the mole fraction of sugar in a 1.22 M solution of sucrose? (1.12g/mL)