CONCEPT: MOLE FRACTION

- **Mole Fraction (X)** represents _____ of solute per _____ of solution.

Mole Fraction Formula

$$\text{Mole Fraction (X)} = \frac{\text{solute}}{\text{solution}}$$

EXAMPLE: A solution contains 85.2 g of ascorbic acid ($C_6H_8O_6$), a water soluble vitamin, in 270.0 g of water. Calculate the mole fraction of ascorbic acid in this solution.

PRACTICE: Calculate mole fraction of a 2.4 m aqueous solution of citric acid ($C_6H_8O_7$).

a) 0.96 b) 0.041 c) 0.55 d) 0.024

PRACTICE: If mole fraction of urea is 4.55×10^{-1}, what is the mass of urea needed to dissolve in 38.0 g of water? The molar mass of urea is 60.062 g/mol.

a) 26.7 g b) 106 g c) 39.6 g d) 8.19 g