1. How many moles of hydrogen atoms are there in 0.0010 mole (1.0 x 10^{-3} mol) of sucrose (C_{12}H_{22}O_{11})?
   A 0.0010  
   B 2.2 x 10^{-20}  
   C 0.011  
   D 0.022  
   E none of the above

2. How many hydrogen atoms are there in 0.0010 mole (1.0 x 10^{-3} mol) of sucrose (C_{12}H_{22}O_{11})? Avogadro's number (NA) = 6.0 x 10^{23}.
   A 1.3 x 10^{22}  
   B 0.022  
   C 6.0 x 10^{20}  
   D 22  
   E none of the above

3. How many moles of water molecules are in 1 L = 1000 mL = 1 kg = 1000g?
   A ~ 1 mol  
   B ~ 10 mol  
   C ~ 50 mol  
   D much more than 50 mol

4. How many water molecules are there per sugar molecule in a 1 M solution of sugar, C_{6}H_{12}O_{6}?
   A 1 water : 1 sugar  
   B 1 water : 10 sugar  
   C 10 water : 1 sugar  
   D None of these

5. 100 g of glucose (C_{6}H_{12}O_{6}) dissolves in 100 mL of water. Estimate how many molecules of water there are for each molecule of glucose.
   A 1000  
   B 100  
   C 10  
   D 1
6 Challenge: Estimate the molarity of the aqueous sugar solution represented in the figure.

A 0.3 M = 0.3 mol sugar/Liter water
B 1 M
C 3 M
D None of these