CHEMISTRY 31
Quiz 1 - Key
Spring, 2017

A solution of concentrated HNO_3 (molecular weight = 63.0 g/mol) that is 15.7 M has a density of 1.43 g/mL.

a) Determine the mass % of HNO_3 in the concentrated HNO_3. (5 pts)

*Mass % = (g HNO_3/g sol'n)*100*
= (15.7 mol HNO_3/L sol'n)(63.0 g HNO_3/mol HNO_3)(1 L sol'n/10^3 mL sol'n)
*(1 mL sol'n/1.43 g sol'n)*100 =* ***69.2%***

b) How many g. of concentrated HNO_3 are needed to deliver 10.0 g of HNO_3? (5 pts)

Mass sol'n = (10.0 g HNO_3)(100.0 g sol'n/69.2 g HNO_3) = ***14.5 g.***