Concentration Practice Homework

If I make a solution by adding 125 grams of ethanol (C₂H₅OH) to 450 mL of water...

a) What is the molality of ethanol in this solution?

b) What is the mole fraction of ethanol in this solution?

c) What is the percent by mass of ethanol in this solution?

d) Why is it impossible to find the percent by volume of ethanol for this solution, despite the fact that the density of ethanol is known to be 0.789 g/mL).

e) Why is it impossible to find the molarity of this solution?