1. A mixture of water, sugar, ethanol, oil and salt is held in a sealed container at conditions where salt crystal are visible at the bottom of the container; and 2 liquids and vapor are visible. Calculate the degrees of freedom and give a set of intensive variables to fix the state of the system. (/1.5)

C =	P =	F =

2. A liquid mixture contains water, ethanol and sugar. The mixture is then cooled to a point where sugar crystal begins to appear. The system is then held in a controlled environment where the temperature is held constant, equilibrium is reached and no reaction occurs. (/3)

   a. How many components, phase and degrees of freedom are present in the final mixture?

C =	P =	F =

   b. Specify a typical set of intensive variables to fix the system!