CHE 362 **HW #8** **Due 6/15/23**

#1 a) Use Aspen to create an x-y diagram for water/ethylene glycol (EG) at 1 atm pressure.

Use your x-y diagram to solve the following flash problems. Show your solution graphically on the x-y diagram.

A 40 mole % water, 60 % EG mixture is fed to a flash vessel. The unit operates at 1 atm pressure.

b) What is the minimum mole fraction of water in the liquid that can be achieved in the flash?

c) What is the maximum mole fraction of water in the vapor that can be achieved in the flash?

d) If the liquid leaves the flash at 10 mole % water, what is the mole fraction of water in the vapor and what fraction of the feed is vaporized?

e) If the vapor leaves the flash at 90 mole % water, what is the mole fraction of water in the liquid and what fraction of the feed is vaporized?

f) If 75% of the feed is vaporized, what is the mole fraction of water in the liquid and vapor leaving the flash?

g) Confirm your solution from part f) using a Flash unit in Aspen. Submit a copy of the stream results table from Aspen showing the mole fractions as verification.