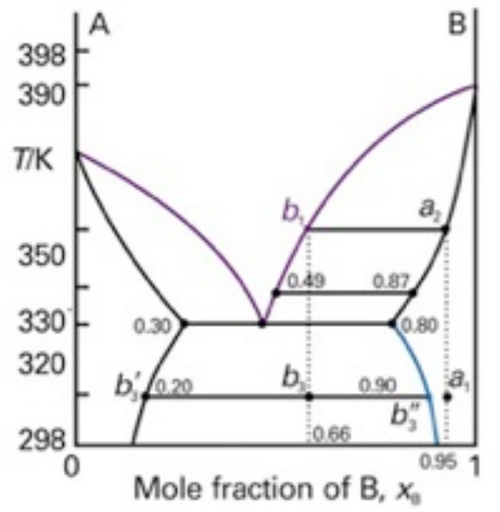

Friday, September 4

Last Time:

- Welcome and Introductions
- Course Policies and Procedures
- Course Overview
- Thermodynamic variables & relationships

Today:

- More on variables
  - Extensive vs. intensive
  - Conjugate pairs
- Systems and processes
- The First Law: heat & work

Readings:

•Levine,1.2, 2.1–2.4

Handouts:

Reminders:

•Office Hours: M 3–4:30, R 2–4

•Check the course blog for announcements & course documents

http://titania.stockton.edu/pchem

Recap: thermodynamic variables & relationships

$$dV = \left(\frac{\partial V}{\partial P}\right)_T dP + \left(\frac{\partial V}{\partial T}\right)_P dT$$

Ideal Gas: $V = \frac{RT}{P}$

$$\left(\frac{\partial V}{\partial P}\right)_T = -\frac{RT}{P^2} \qquad \left(\frac{\partial V}{\partial T}\right)_P = \frac{R}{P}$$

$$dV = -\frac{RT}{P^2}dP + \frac{R}{P}dT$$