Reading Assignment 10/15

(due: Wednesday, October 15, 9 am)

Announcements:

- Test 2 will be Oct.27 (instead of Oct.29)
- Have a great break!

Read: pages 166 - 174

1.: Which parameters can cause a phase transformation? One answer is temperature. Which others?

2.: Why is graphite more stable than diamond at large pressures but diamond more stable than graphite at low pressures?

3. Comments: What of this reading did you find most difficult and what did you find most interesting? Any other comments?

Homework due Wed, Oct. 15 (evening): 5.12, 5.14 a-c, 5.14 d-g
Hints for 5.14:

- for 5.14c use isothermal compressibility is $\kappa_T = -\frac{1}{V}\left(\frac{\partial V}{\partial p}\right)_T$ (see problem 1.46b), thermal expansion coefficient $\beta = \frac{1}{V}\left(\frac{\partial V}{\partial T}\right)_p$, and $\left(\frac{\partial p}{\partial T}\right)_V = -\frac{(\partial V/\partial T)_p}{(\partial V/\partial p)_T}$ (see probl. 1.46c).
- for 5.14f use 1.46e for values of β and κ, $c_p = 4.186$ J/K for 1 g of water, and page 405 for V, C_p for 1 mol of mercury.
- for 5.14e use the result of problem 5.13 that $\beta(T \to 0) \to 0$.