February 3rd Class – Thermo class 3

Pre-Class Reading:

Sections 2-14 through Sections 2-20. (**THIS MUST BE DONE**)

Discussion questions for class:

(1) What is the first, second, and third law of thermodynamics?
(2) The textbook offers two approaches of the second law of thermodynamics? Compare and contrast.
(3) What is the difference between a refrigerator and a heat engine?
(4) Must there be a temperature change for an entropy change? Give examples to support your argument.
(5) What is the difference between efficacy and COP?
(6) Explain in detail 2.18, entropy change in a free expansion.
(7) What is the chemical potential?
(8) Be able to explain the following arbitrary equation

$$df = \left.\frac{\partial f}{\partial x}\right|_{yz} dx + \left.\frac{\partial f}{\partial y}\right|_{xz} dy + \left.\frac{\partial f}{\partial z}\right|_{xy} dz$$

In Class Problems:

Problem 2.20

Problem 2.21

Problem 2.24