PHYSICS-2
Elementary Physics of Energy

Homework 4
Due Date: APRIL 28, 2011

More problems from Chapter 3 of Ristinen and Kraushaar:

Questions & Problems (pg. 85): 3, 8 and 15

Multiple Choice Questions: 4, 6, 7, 13, 14 and 16

Other problems:

1. A certain system has a hot reservoir at 120°C and its cold one is 15°C. What are the Carnot efficiencies if it's a heat engine, a heat pump, or a refrigerator?

2. Using numbers from the previous problem, assume this is a heat engine that produces an amount of work 10% less than the ideal (Carnot) value. What are the first law and second law efficiencies? What are they if it's a heat pump?

3. Now assume the numbers in problem 1 apply to a refrigerator that requires 10% more work than the Carnot fridge. What are the first law and second law efficiencies of this device?