

ME 201

Thermodynamics

Homework 22, Due Friday, May 5, 2006

Extra Credit worth 15 points

1. An ideal vapor –compression refrigeration cycle with refrigerant 134a as the working fluid operates with an evaporator temperature of -20°C and a condenser pressure of 1.2 MPa. For a refrigerant flow rate of 3 kg/min determine:
 - a. COP for the cycle
 - b. Cooling load in kW for the cycle
 - c. Carnot cycle COP for the given conditions