ME 24-221
Thermodynamics I

Quiz No: 5
3 November, 2000
Instructor: J. Murthy
15 minutes
Open textbook, closed notes

A rigid tank is initially evacuated. A valve on the tank is opened and air from a supply line at 20°C and 1 MPa flows into the tank until the pressure reaches 500 kPa. If a total of 0.115 kg of air flows into the tank during the process and there is a heat loss from the tank of 8.8 kJ, find (i) the final temperature in the tank in°K, and (ii) the volume of the tank in m^3.

Assume that air has constant specific heats.