AME 20231
Homework 8
Due: Friday, 23 March 2012, in class

1. 6.74; Let instead the delivery pressure be 180 kPa instead of the stated 200 kPa.

2. 6.103; Let instead the peak temperature be $T_4 = 550°C$.

3. 6.108; Let instead the peak temperature be $T_1 130°C$.

4. 6.109; Let instead the exit pressure 70 kPa. Use the ideal gas tables to evaluate all necessary enthalpies.

5. 6.173E

6. A tank containing 50 kg of liquid water initially at $45°C$ has one inlet and one exit with equal mass flow rates. Liquid water enters at $45°C$ and a mass flow rate of 270 kg/hr. A cooling coil immersed in the water removes energy at a rate of 8.0 kW. The water is well mixed by a paddle wheel so that the water temperature is uniform throughout. The power input to the water from the paddle wheel is 0.6 kW. The pressures at the inlet and exit are equal and all kinetic and potential energy effects can be ignored. Determine the variation of water temperature with time. Give a computer-generated plot of temperature versus time.