

Problem T12 (Unified Thermodynamics) (LO#5)

- a) In problem T3 you evaluated the work for two different adiabatic processes. Calculate the change in entropy for those same two processes. What is the relationship between entropy change, work and irreversibility for these two processes?
- b) In problem T7 part (d) you were asked to compare measured values for the compressor for MIT's ABB Cogeneration Plant to an ideal quasi-static, adiabatic compression process. Calculate the change in entropy for these two processes and plot them on a T-s diagram (include constant pressure lines in the background of the plot).
- c) Write a paragraph that explains the concepts of reversibility and irreversibility of various thermodynamic processes. Cite examples of how irreversibility would impact the performance of aerospace power and propulsion systems.