Tips for HW8

1. Use Eq 4.10 for first law problems where there is a high rate of mass leaving the system. In particular, there is one term where the mass is multiplied by the sum of (u\_dot, ke\_dot, and pe\_dot). These represent the rate of change of u, ke, and pe. Since these are constant, the rate of change of these terms is zero.
2. The generator is operating at steady state (meaning there is no storage/depletion of energy in the generator). This should turn in to a simple energy balance, but you will want to keep track of signs (in vs. out).
3. If you start with First Law for a closed system, and no work crossing the boundary you will get to the governing equation. However, you will be missing the value of u\_2 to solve for the heat transfer requirement. Remember that rigid and sealed means that specific volume remains the same between two states. You have enough information to identify State 1. You also know that state 2 is saturated vapor with ν\_1 = ν\_2. Use interpolation to find u\_2 where ν\_1 = ν\_2. Once you know u\_2, have all the information you need to complete your First Law analysis.