Tips for HW33

* For turbine you want to find specific work (W\_dot / m\_dot). We know that this is h1 – h2. But since there is no phase change we can approximate this as cp\_mix­\*(T1-T2)
  + To find T2 you can use T2 = T1 \* (P2/P1)(k-1)/k
  + However you don’t know k. To find k you will need:
    - Find cp­\_bar = Σ yi \* c­p\_bar\_i
    - Same is true for cv
    - k = cp­\_bar/cv\_bar
  + cp\_mix = cp\_bar/Mmix
  + cv­\_bar = 25.6 kJ/kmol-K
* Intermediate values for 33-2
  + See molar composition of dry air from values in table of example 12.2 in textbook
  + Pw = Psat(20°C) = 0.0023 MPa
  + yw = 0.023
  + Pm = 0.101 MPa
  + Pair = 0.0989 MPa
  + PN2 = yN2­\*Pair
  + yO2 = 0.205
  + wCO2 = 0.0004

FE Questions

* 33-FE1 is d)
* 33-FE2 is c)