Q2 – Algorithm to calculate the isentropic compression of an ideal gas mixture.

* Calculate the constants a, b, σ and ε (which are the function of Tc, Pc)
* We don’t know the values of T (temperature), so we assume different range of temperatures from 298.16K to around 1000K.
* So from the guess temperature values, we calculate the values of Cp (ig) (equation having different constants) and then create an array of [Cp (ig), T].
* After that assume the reference temperature for further calculations. Let’s take Tf- (reference temperature) = 298.16K.
* At that temperature, find the corresponding gas entropy (*S*0*Tf* ) using Perry’s Data.
* Now as we know, for isentropic compression, temperature of the system increases, *S*= *S*0*Tf*
* So value of T should be such that the integral part must be ‘0’.
* So we program the code for the integral such that the integral value should be zero and hence we find that required temperature.