Physics 301: Problems #6
Sept. 27, 2019

1. Show that
$$C_p = T\left(\frac{\partial S}{\partial T}\right)_P$$

2. Table 4.1 shows that the entropy of water increases with increasing T,P but that the entropy of steam decreases with increasing T,P. Why?

3. By calculating the COP, prove that an ideal gas taken around a rectangular PV cycle cannot be used as a refrigerator.