Assignment #3. Due Thurs March 5

1. Explain in your own words what the Boltzmann entropy of a macrostate measures. According to Boltzmann, why does this quantity increase (or remain constant) over time?

2. How can the Shannon entropy be understood as a measure of the maximum amount a message can be compressed? How can it be understood as the expected information gain associated with a message?

3. Why does a copying operation cost no entropy?