

## Homework 09:

Do problem **6.3** in the text

**A.1** Compute the “Shannon Entropy” for the following strings. The relative probabilities of A, B, and C are  $1/6$ ,  $1/3$ , and  $1/2$ . (Doing this by hand shouldn’t be too hard, but if you want to use MATHEMATICA or MATLAB, go ahead.) Any-take home message?

Would the Shannon Entropy reflect the information content of real English text? Why or why not?

C, B, B, C, A, B, A, C, C, C

B, B, C, C, C, B, B, A, B, C

B, B, B, B, C, B, B, C, C, C

A, A, B, B, B, B, C, C, C, C, C, C

Do problem **5.8** in the text. (Don't be intimidated by the "Track 2" designation. This problem doesn't use any ideas that we didn't cover in class. This problem requires some thinking but mathematically, it's not very difficult.)