Problem Set 3

Reading Assignment: Chapter 3, Sections 1 to 4

1) Exercise 2.3 in text.

2) Exercise 2.5 in text, parts a and b (you are encouraged to also do the other parts, but they are a little messier and should not be turned in). Note that $N(t) = \sum_{k=1}^{t} Y_k$, where $Y_1, Y_2, \ldots$ are the binary variables. Also, part a) has a typo in the binomial distribution; it should be $\mathsf{p}_{N(t)}(k) = \binom{t}{k} 2^{-t}$.

3) Exercise 2.10 in text.

4) Exercise 2.11 in text.

5) Exercise 2.12 in text.

6) Exercise 2.23 in text (Parts a, b, c only) (part d is somewhat instructive, but quite messy).

Note: If you find yourself writing multiple equations for any of the parts of these exercises, go back and look for a more insightful approach. Sections 2.3 and 2.5 of the text will be helpful.

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