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# 2015 Spring - Information Theory

## Homework 5 (Due to Apr.10)

### Part 1: Decoding

You had already known the CDF of the point  $cabbcbabc$  from HW4. Use the CDF you get to decode this sequence, where  $P(a) = 0.2, P(b) = 0.3, P(c) = 0.5$

### Part 2: Encoding

Please prove (4.23), which can really generates a prefix-free code.

### Part 3: Matlab Exercise

From HW4, you had build an arithmetic encoder. Now build an arithmetic decoder for the same source.