

Textbook questions from chapter 5

4h, 5c, 6b, 7e

Key ideas:

- Central limit theorem and how to use Phi function
- Exponential is a MEMORYLESS
- Derivation of Cauchy distribution

Other**Stock example**

A stock is 20\$. Every day, it increases by a tenth with probability $\frac{11}{20}$, and decreases by an eleventh with probability $\frac{1}{11}$.

What is the probability that it is above 30\$ after 100 days?

Some theory

Given a $X \sim N(0, \sigma^2)$, find $E[|X|]$.

This can also be written as: Find $E|X|$. (I.e. Expectation of the absolute value of X).

