DATA 605: Assignment 8

CUNY Spring 2021

Philip Tanofsky

21 March 2021

Problem 1

The price of one share of stock in the Pilsdorff Beer Company (see Exercise 8.2.12) is given by Y_n on the nth day of the year. Finn observes that the differences $X_n = Y_{n+1} - Y_n$ appear to be independent random variables with a common distribution having mean $\mu = 0$ and variance $\sigma^2 = 1/4$. If $Y_1 = 100$, estimate the probability that Y_{365} is

A: $\geq$ 100

B: $\geq$ 110

C: $\geq$ 120

Problem 2

Calculate the expected value and variance of the binomial distribution using the moment generating function.

Answer

Problem 3

Calculate the expected value and variance of the exponential distribution using the moment generating function.

Answer