IME625: Stochastic Processes

2021-22 Sem-II

Homework-21

Let T denote the time gap between receiving successive orders for home delivery at a pizza shop. T is equally likely to take values $5,10,15$ minutes. On an average, how many orders are received in 20 minutes? Intuitively the answer is 2, as the expected gap between successive orders is 10 minutes. However, the correct answer is $148/81$.

Hint: Find the mass function of $N(20)$ from the first principles, and then find $E[N(20)]$.