Stochastic processes : Quiz

March 10, 2025

Question. Name a *discrete* memoryless distribution.

Problem. Students arrive to a classroom according to a Poisson process with rate $\lambda > 0$. The professor decides to wait for 2 minutes. If at least one student has entered the classroom, the lecture begins. If not, the professor waits until the first student arrives then starts.

1. What is the probability that the lecture doesn't start within 2 minutes?

2. What is the expected future waiting time given that the professor has already waited for 3 minutes?

3. What is the probability that the lecture begins within 5 minutes but past 2 minutes?

Full name: