Exercise for Week 9

This is a preview of the published version of the quiz

Started: 13 Oct at 18:58

Quiz instructions

Quiz time is from 09:15am to 10:30am of October 11.

Question 1 — 1 pts

The daily number of crimes in a city is most suitably modelled by a random variable that follows

- ○ Negative Binomial Distribution
- ○ Binomial Distribution
- ◉ Poisson Distribution
- ○ Bernoulli Distribution

Question 2 — 1 pts

Suppose $X \sim \mathbf{Exp}(\lambda)$ with $\lambda > 0$. Which of the following is **INCORRECT**?

- ○ For any real numbers $x_2 > x_1 > 0$, we must have $P(X > x_2 | X > x_1) = P(X > x_2 - x_1)$.
- ○ For any real numbers $x_2 > x_1 > 0$, we must have $P(X > x_2) > P(X > x_1) > 0$.
- ◉ For any real numbers $x_2 > x_1 > 0$, we must have $P(X > x_2) - P(X > x_1) = P(X > x_2 - x_1)$.
- ○ None of the given options

needs to be revised as $P(X>x_1) > P(X>x_2) > 0$. So it will be counted correct if this option is chosen.

Question 3 1 pts

Let X and Y be independent random variables. Which of the following is **INCORRECT**?

- If $X \sim B(10, 0.5)$ and $Y \sim B(10, 0.5)$, then $X + Y \sim B(20, 0.5)$.
- If $X \sim \mathbf{Poisson}(2)$ and $Y \sim \mathbf{Poisson}(4)$, then $X + Y \sim \mathbf{Poisson}(6)$.
- If $X \sim \mathbf{Exp}(2)$ and $Y \sim \mathbf{Exp}(4)$, then $X + Y \sim \mathbf{Exp}(6)$.
- None of the given options

Saved at 19:00 Submit quiz