Bookmarks

- Module 1: The Basics of R and Introduction to the Course
- Entrance Survey
- Module 2: Fundamentals of Probability, Random Variables, Distributions, and Joint Distributions
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- Module 4: Joint, Marginal, and Conditional Distributions & Functions of Random Variable

Representing Poisson Distributions - Quiz

Bookmark this page

Question 1

1/1 point (graded)

For the next question, take a look at the following three Poisson variables. Based on what you know about the visual representation of the probability distribution of a Poisson distribution, which of the three distributions has the highest lambda?

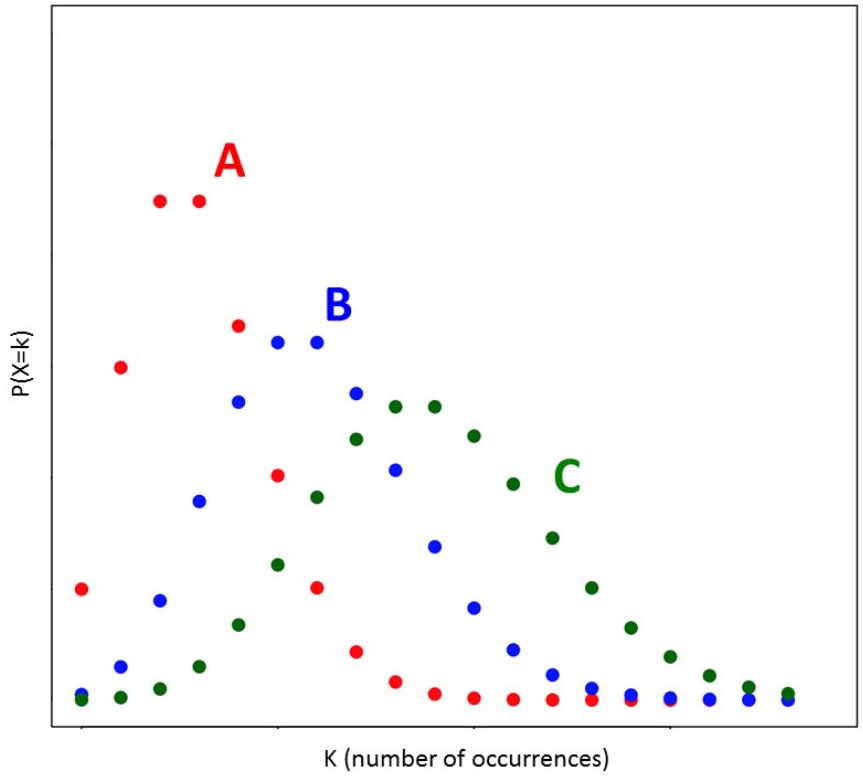
- Module 5: Moments of a Random Variable, Applications to Auctions, & Intro to Regression
- Module 6: Special Distributions, the Sample Mean, the Central Limit Theorem, and Estimation

Human Subjects and Special Distributions
Finger Exercises due Nov 07, 2016 at 05:00 IST

The Sample Mean, Central Limit Theorem, and Estimation
Finger Exercises due Nov 07, 2016 at 05:00 IST

Module 6: Homework
Homework due Oct 31, 2016 at 05:00 IST

- Exit Survey



- a. A
- b. B
- c. C ✔
- d. It could be any, it depends on other parameters

Explanation

With higher lambda, the mass of the distribution moves right. In the diagram shown above, C shows the probability distribution with the largest lambda (λ). Note that, as discussed in class, as lambda increases (λ), the Poisson distribution begins to be approximated by the binomial distribution.

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Question 2

1/1 point (graded)

Now suppose that we want to plot the number of shots on goal during a soccer match. Suppose that there is a fixed propensity for a shot on goal in any given minute of the match. Suppose that the total match is 90 minutes, and you want to plot three probability distributions that represent the total number of shots on goal in 30 minutes, 45 minutes, and 90 minutes. Suppose that the 3 curves represent the 3 distribution.

Which one would represent the probability distribution for the 30 minute window?

- a. A ✔
- b. B

c. C

d. It could be either A or B, but depends on other parameters

Explanation

While gamma (γ), is fixed, lambda (λ) is a function of the window of time that you are interested in. Recall that $\lambda = \gamma * t$. λ will be 90*γ for the 90 minute window, 45*γ for the 45 minute window, and 30*γ for the 30 minute window. λ is the smallest for the 30 minute window, which would be represented by the probability mass function labeled A. Of course it makes perfect sense when you think about it: you are less likely to see a goal in 30 minutes than in 90 minutes!

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

Discussion

Topic: Module 6 / Representing Poisson Distributions - Quiz

Show Discussion

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