

MATH10282: INTRODUCTION TO STATISTICS
SEMESTER 2
QUIZ PROBLEM 3
(Deadline: Friday 4 March 2022, 11:00am)

Suppose that X_1, \dots, X_n is a random sample from a Poisson distribution with parameter λ . The probability given by

$$\Pr(X_1 = 1, X_2 = 2, \dots, X_n = n)$$

can be simplified to

a) $\lambda^{\frac{n(n+1)}{2}} \exp(-n\lambda) \left(\prod_{i=1}^n \frac{1}{i!} \right).$

b) $\lambda^{\frac{n(n-1)}{2}} \exp(-n\lambda) \left(\prod_{i=1}^n \frac{1}{i!} \right).$

c) $\lambda^{\frac{n(n+1)}{2}} \exp(-\lambda) \left(\prod_{i=1}^n \frac{1}{i!} \right).$

d) $\lambda^{\frac{n(n-1)}{2}} \exp(-\lambda) \left(\prod_{i=1}^n \frac{1}{i!} \right).$

This problem is worth 1 mark. Marking scheme: 1 mark if the answer is correct, 0 mark if the answer is incorrect.

Please use Blackboard to enter your answer.