

Unit 2 - Week 1

Course outline

How does an NPTEL online course work?

Week 1

- Statistical Inference-1
- Statistical Inference-2
- Statistical Inference-3
- Quiz : Assignment 1
- Week 1 Feedback Form

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

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Assignment Solution

Assignment 1

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-02-12, 23:59 IST.

1) The given table shows the data of sports enthusiasts in a class of 30. Find the probability that a given sports enthusiast is a girl. 1 point

	Enthusiast	Not an enthusiast
Girl	6	8
Boy	12	13

- $\frac{1}{3}$
 $\frac{3}{8}$
 $\frac{8}{3}$
 $\frac{11}{3}$
 $\frac{3}{30}$

No, the answer is incorrect.
Score: 0

Accepted Answers:

$$\frac{1}{3}$$

2) Let $\{X_1, X_2, \dots, X_n\}$ be iid random variables each having $N(\mu, \sigma^2)$. Let $X = \sum X_i$. Find $E(X)$? 1 point

- $n\mu$
 $n\sigma^2$
 μ
 σ^2

No, the answer is incorrect.
Score: 0

Accepted Answers:

$$n\mu$$

3) Let $X \sim Z(0,1)$ (Standard Normal distribution). Then, find $E(|X|)$: 1 point

- 0
 $\frac{1}{\sqrt{2\pi}}$
 $\frac{2}{\sqrt{2\pi}}$
 2

No, the answer is incorrect.
Score: 0

Accepted Answers:

$$\frac{2}{\sqrt{2\pi}}$$

4) If there is a very strong correlation between two variables, then the correlation coefficient must be 0 points

- any value larger than 1
 much smaller than 0, if the correlation is negative
 much larger than 0, regardless of whether the correlation is negative or positive
 None of these alternatives is correct.

No, the answer is incorrect.
Score: 0

Accepted Answers:

much smaller than 0, if the correlation is negative

5) Let X be an exponential distributed random variable with parameter 3. Suppose $Y = F(X)$ where F is the cdf of X . Then, Y is 1 point

- a uniform distributed random variable on the interval $[0,1]$
 an exponential distributed random variable with parameter 3
 an exponential distributed random variable with parameter $1/3$
 a uniform distributed random variable on the interval $[0,3]$

No, the answer is incorrect.
Score: 0

Accepted Answers:

a uniform distributed random variable on the interval $[0,1]$

6) Memoryless property: A continuous random variable is said to possess the memoryless property if $P(X > t+s | X > t) = P(X > s)$ where r and s are real numbers, i.e, the value of random variable depends only upon the length of the time interval since observation and not upon the time from starting. Which of the following continuous distributions has the memoryless property? 1 point

- Normal $(N(\mu, \sigma))$
 $\text{Exp}(\lambda)$
 Uniform $U(0,1)$
 Beta $(\beta(n, m))$

No, the answer is incorrect.
Score: 0

Accepted Answers:

$\text{Exp}(\lambda)$

7) Memoryless property: A discrete random variable is said to possess the memoryless property if $P(X > m+n | X > m) = P(X > n)$ where m and n are integers, i.e, the value of random variable depends only upon the length of the time interval since observation and not upon the time from starting. Which of the following discrete distributions has the memoryless property? 1 point

- Binomial
 Geometric
 Hypergeometric
 Poisson

No, the answer is incorrect.
Score: 0

Accepted Answers:

Geometric