CA4 - Continuous Random Variables (CRVs) Basics and Gallery of CRVs

Add Instructions...

1 Multiple Choice 5 points

A continuous uniform random variable X has a lower bound of $a = -3$ and an upper bound of $b = 5$. What is $P\left(X > -1\right)$

- 0.2500
- 0.5000
- 0.1250
- 0.7500

2 Multiple Choice 5 points

You are waiting for a bus to take home from VinUni campus. The waiting time in minutes at the bus station follows the Exponential distribution $X \sim Exp\,(\lambda = 0.1)$. Given that you have waited for 5 minutes, what is the probability that you will wait for more than 10 minutes for the bus?

- ○ $1 - e^{-0.5}$
- ◉ $e^{-0.5}$
- ○ $e^{-1.0}$
- ○ $1 - e^{-1.0}$

3 Numeric 3 points

Let X be a continuous random variable with range [-1,1] and pdf $f\,(x) = cx^2$. What is the value of c? Please give your answer to two decimal places (e.g., 0.25)

1.50

4 Multiple Choice 3 points

Which of the following statement is **not** true for an exponential distribution with parameter λ?

- ○ Mean = $\frac{1}{\lambda}$
- ○ Standard deviation = $\frac{1}{\lambda}$
- ○ The area under the pdf curve is equal to one
- ◉ The distribution is a two-parameter distribution since the mean and standard deviation are equal

5 Multiple Choice 4 points

In a popular shopping centre, the waiting time for a Techcombank ATM machine is found to be uniformly distributed between 1 and 5 minutes. What is the probability of waiting time between 2 and 3 minutes to use the ATM?

- ◉ 0.25
- ○ 0.50
- ○ 0.75
- ○ 0.20
- ○ 0.40