STA 4321

Spring 2019

Quiz 5

Full Name: _____

On my honor, I have neither given nor received unauthorized aid on this quiz

Signature: _____

This is a 10 minute quiz. There are 5 multiple choice problems, each having EXACTLY ONE correct answer. You may *not* use any books, other references, or text-capable electronic devices.

1. Let X be a continuous random variable with density function f_X. Then

    (a) $\int_{-\infty}^{\infty} f_X(x)dx = 0$.

    (b) $\int_{-\infty}^{\infty} f_X(x)dx = \frac{1}{2}$.

    (c) $\int_{-\infty}^{\infty} f_X(x)dx = 1$.

    (d) $\int_{-\infty}^{\infty} f_X(x)dx = F_X(1)$.

    See lecture notes

2. If $X \sim \text{Uniform}[0, 1]$, then

    (a) $E[X] = 0$.

    (b) $E[X] = 1$.

    (c) $E[X] = \frac{1}{2}$.

    (d) $V(X) = 1$.

    If $X \sim$ Uniform (a,b), then $E(X) = \frac{a+b}{2}$

3. The exponential random variable is a special case of the class of

    (a) gamma random variables.

    (b) uniform random variables.

    (c) normal random variables.

    (d) discrete random variables.

    See lecture notes

4. If Z is a standard normal random variable, then

    (a) $E[Z] = 1$.

    (b) $E[Z^2] = 0$.

    (c) $V(Z) = \frac{1}{2}$.

    (d) $V(Z) = 1$.

    See lecture notes

5. The exponential distribution is the only continuous distribution which has the memoryless property. This statement is

(a) True.   *See lecture notes*

(b) False.