Math 5710 Tuesday, 7/28/20 Quiz 25

1. What is your name?

Brock Francom

2. Re-examine the following two definitions and compare the role played by the summation function in the discrete case to the role played by the integration function in the continuous case:

41A. Definition for *expected value* for a discrete random variable X:

Given $X \in \{$ discrete random variables of $\Omega \} \wedge$
$(m \in \{$ discrete probability distribution for $X\}$, ($E(X)$ is the *expected value* of $X \Leftrightarrow$
$E(X) = \sum_{x \in \Omega} x m(x)$ provided that the series converges absolutely).

Note: If the series does not converge absolutely, then X does not have an expected value.

47A. Definition for *expected value* for a continuous random variable X:

Given $X \in \{$ continuous random variables of $\Omega \} \wedge (f \in \{$ density function for $X\}$,
($E(X)$ is the *expected value* of $X \Leftrightarrow$
$E(X) = \int_{-\infty}^{\infty} x f(x) dx$ provided that the definite integral $\int_{-\infty}^{\infty} |x| f(x) dx \}$ exists.

Write a paragraph that describes the salient points of your comparison.

3. Of course the integral in Glossary Entry 47A helps us compute areas of certain geometric objects. Now suppose we were confronted by an experiment in which we needed to compute the double integral of a function. For such an experiment instead of examining random events related to areas of geometric objects, we would be examining random events related to Volume of geometric objects. Fill in the blank.

4. Smile.

2) They seem pretty Similar, but there are some differences. The discrete random variable uses summations to calculate specific probabilities, The Continuous random variables though, use integration to calculate the propabilities instead. Both forms calculate the probability up to a certian point.