Concepts Assignment Segment - Discrete Random Variables & Probability Distributions

Description

In this assignment, you will provide a plain language explanation of the primary concepts of this topic and the types of probability distributions that may be used for it.  In addition, you will provide examples of how your field would apply each of these probability calculations in your field to predict or present issues in and around the pandemic.

Assignment Preparation

* **Read** Chapter 3 of your textbook.
* If you want additional resources to look at see [Week 6: Additional Resources](https://usflearn.instructure.com/courses/1457942/pages/week-6-additional-resources)Page

Assignment

While the primary purpose of this assignment is for you to think about and work with statistical concepts, it is important after you complete your writing that you take the time to review and edit it for coherence, completeness, and grammar.  Using a grammar and spelling program such as Grammarly is highly recommended, as excessive grammar errors and incoherent writing will lower your grade. Download and use the [CA 2.3 Template](https://usflearn.instructure.com/courses/1457942/files/100212144/download?wrap=1) to answer the questions for this assignment.  Use ONLY words (no formulas, no equations, and no symbols) to answer the following questions:

1. Define in your own words what a random variable is and what makes it discrete?

a. What limitations are there in using this approach to probability prediction?

b. What type of data do you need?

2. Define Expected Value in words only.

For the following 3 types of distributions explain in words (no formulas, no equations, and no symbols) a)what they model and b) what the given elements are for each (i.e. event, sample, conditional/independent). c) Then provide one example from your field \*of how they could be applied (you may use sources but must have more than one, you may not quote them, and you must cite them):

3. Binomial

4. Hypergeometric

5. Negative Binomial

6. How does the Bernoulli random variable relate to the binomial and negative binomial distributions?

*\* Think of the applications in your field as starting points for your group project case research.  You may start developing that as early as you like.  However, each group member must have a different case to present.*

Assignment Submittal

The work is set up as a regular assignment.  The assignment is submitted as an upload in doc, docx, or pdf formats only.

Assignment Grading

This assignment will be graded on completed with exceptional effort, completed, not completed, or not submitted. Getting points for exceptional work requires demonstrating that you have thought about the concepts enough to express them in exceptional detail in your own words.

Rubric

**CA2 segment 2, 3, 4, & 5 2020F**

| CA2 segment 2, 3, 4, & 5 2020F |
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| **Criteria** | **Ratings** | **Pts** |
| This criterion is linked to a Learning OutcomeQuestionsYou are expected to use the statistics and probability in the resource provided to demonstrate an understanding of the concepts in the questions |

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| **10.0 pts****Excels**You made an exceptional effort to use the assignment to explore the concepts under discussion | **7.5 pts****You did an average job**You completed the assignment | **5.0 pts****Your assignment was incomplete or substantially incorrect demonstrating a lack of attention to the concepts involved** | **0.0 pts****Questions were not answered** |

 | 10.0 pts |
| Total Points: 10.0 |

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