** Mathematics Assignment 3**

**How Much Do You Know About Canada?**

**Date:** Due

**Overview:**

Canadians often express surprise at how little Americans know about Canada, but sometimes Canadians don’t know that much about their own country either. Do you know the words to Canada’s national anthem? Do you know who Canada’s first prime minister was?

**Preparation Work and Tasks:**

1. Choose a topic about Canada that interests you. Some possible topics include Canadian sports, geography, history, politics, or famous people. **(/1)**
2. Use various databases to collect information about your topic. Write 10 trivia questions. Be sure that all your questions are about Canada or Canadians. **(/4)**
3. Give your questionnaire to a variety of people and record their answers. **(/3)**
4. Take the answers and create a frequency table to compare the frequency of each answer. **(/3)**
5. Use this data to change your trivia questions into multiple choice questions. Be sure to include the most frequent answers. Each question should have four choices: A, B, C, D. Randomize your quiz so that the letter of the correct answer varies. **(/4)**
6. Choose two different groups of people (e.g., males and females, or grade 7 and grade 8s) and give your questionnaire to each group. Each group is a sample. Be sure each sample has at least five people. **(/3)**
7. How confident will you be with your choice of sample as a prediction for the population? **(/1)**
8. Organize your results on a spreadsheet showing the score of each participant in each sample. **(/3)**
9. Use your spreadsheet to create a graph comparing the scores of each sample. **(/3)**
10. What was the higest score, in percent, for each sample? The lowest? **(/1)**
11. Create two histograms, one for each sample, that display the percent of participants who scored at each interval. You can use intervals of 0%-10%, 10%-20%, and so on. **(/3)**
12. Use your spreadsheet to find the average score for each sample. **(/2)**
13. Find the median score of that sample. **(/2)**
14. Calculate the mean of that sample. **(/2)**
15. Draw conclusions based on the data you collected. **(/3)**
16. How certain are you about the results and accuracy of the data collected? Explain. **(/2)**

**Evaluation:**

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| **Category** | **Level 4** | **Level 3** | **Level 2** | **Level 1** | **%** |
| Depth of Understanding | Demonstrates thorough understanding of concepts. | Demonstrates considerable understanding of concepts. |  |  | 20 |
| Problem Solving / Thinking | Use of procedure includes almost no errors or omissions. | Use of procedures is mostly correct, but there may be a few minor errors and / or omissions. |  |  | 20 |
| Application of Learning | Demonstrates sophisticated ability to make connections between mathematics learning and the real world. | Demonstrates considerable ability to make connections between mathematics learning and the real world. |  |  | 20 |
| Explanation and Justification of Concepts, Procedures, and Problem Solving | Provides thorough, clear and insightful explanations / justifications, using a range of words, pictures, symbols, and / or numbers. | Provides complete, clear and logical explanations / justifications, using appropriate words, pictures, symbols, and / or numbers. |  |  | 20 |
| Use of Mathematical Vocabulary | Uses a broad range of mathematical vocabulary to communicate clearly and precisely. | Uses mathematical vocabulary with considerable clarity and precision. |  |  | 20 |