**Math 20-2 Research Project**

Part of the requirements of the math 20-2 course is a research project. The project is connected to the statistics section of this course and will be part of your final grade.

* You are expected to collect numerical data on a topic that is of interest to you
* You will perform a statistical analysis of your data
* You will use your analysis to make prediction about a larger population or the likelihood of future events

Requirements

The student will

* collect at least 250 pieces of statistical data
  + This may be done by survey or by internet research
* create a line plot, histogram, and frequency polygon of your data (poster)
* discuss in a paragraph the dispersion of the data (poster)
* calculate the mean, median, mode of the data (poster)
* determine the standard deviation (poster)
* use standard deviation, along with mean, to create a distribution displaying 3 standard deviations above and below the mean. Display this overtop of your histogram. (poster)
* Determine the z- scores of at least 5 pieces of data that are scattered throughout your data. (poster)
* For the above 5 z-scores determine the likelihood of achieving a data amount that high or higher (poster)
* Create a well designed, neat, clean looking poster that displays all of the information above as indicated by (poster) behind the instruction. Calculations are not required on the poster but must be handed in separately from the poster.
  + You must have a title on your poster
  + You should include items that will make your poster attractive such as pictures, charts, titles, color, etc.
  + You must use the poster that I provide for you in class.

Scoring Criteria

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| --- | --- | --- | --- |
|  | Calculations  (8 Marks) | Required elements (8 Marks) | Presentation  (4 Marks) |
| Excellent | Calculations are all essentially accurate and are reliable predictors of a larger population or future event | Student has included all elements required of this project and those elements (outside of calculations) are used and interpreted correctly. | Presentation is:   * Stunning * Carefully executed * Clearly using creative visuals * Creates compelling interest to viewers |
| Proficient | Calculations are mostly accurate and are reasonable predictors of a larger population or future event | Student has included the vast majority of elements required of this project and those elements (outside of calculations) are used and interpreted generally correctly. | Presentation is:   * attractive * executed well * Clear effort in creating effective visuals   - Inviting and interesting to viewers |
| Satisfactory | Calculations are periodically correct and are vague predictors of a larger population or future event | Student has included more than half of elements required of this project and those elements (outside of calculations) are used and interpreted in a satisfactory manner. | Presentation is:   * straightforward * simplistic execution * using appropriate visuals * Basic appeal and interest |
| Limited | Calculations are rarely accurate and are suspect predictors of a larger population or future event | Student has included less than half of elements required of this project and those elements (outside of calculations) are used and interpreted generally poor. | Presentation is:   * Ineffective * Poorly executed * Lack of effective visuals * Lacks appeal and generates little interest to the viewer. |