

Chapter 5 Project Skewed Data Analysis

Online Class Directions: *This will be an individual project. Each student will analyze one quantitative data set from the math 075-survey data fall 2015, create a poster summarizing their findings, and present the poster to other students in the class.*

Each student will pick one of the following data sets from the math 075 survey data fall 2015 to analyze: Hours work per week, Hours sleep per night, Hours of exercise per week, Number of Minutes to get to school, College GPA, Number of Units completed at COC, Average cell phone bill per month, Dollars spent on a meal when eat out, Number of times eat at restaurant or fast food per week, Number of U.S. states visited, Number of minutes spent on social media.

The Individual Poster Should Have

- First and Last Name of student
- Why is this data important or interesting to you?
- Go to www.lock5stat.com and open StatKey. Click on “one quantitative variable” under the “descriptive statistics and graphs” menu. Click on “edit data” and copy and paste your one column of quantitative data into Statkey. If you data has a title, click on “data has a header row”. Do NOT click the box the says data has identifier. Press OK.
- Click on histogram in StatKey, and pull the slider to “3 buckets”. Your histogram should have 3 bars. Sketch the histogram onto your poster.
- Click on “Box Plot” in StatKey and sketch the box plot onto your poster.
- Write down the Median, 1st Quartile, 3rd Quartile, SMin, Max and Sample Size onto your poster. You will see them under the “Sample Statistics” menu in StatKey.
- Calculate the Interquartile Range $IQR = Q3 - Q1$
- What is the data measuring?
- What are the units?
- How many numbers are in the data set : sample size (n)
- What is the Shape? Look at your histogram.
- Write a sentence to explain the median.
- What is the average? (Use the median if data is skewed.)
- What is your spread for the data? (Use the Interquartile Range if data is skewed.)
- Write a sentence to explain the interquartile range.
- Find two numbers that typical values fall in between (Q1 and Q3)
- Calculate Unusually high cutoff: $Q3 + (1.5 \times IQR)$
- List all unusually high values (high outliers) in the data set. Find these on the box plot. If there are none, say “No high outliers”.
- Calculate Unusually low cutoff: $Q1 - (1.5 \times IQR)$
- List all unusually high values (high outliers) in the data set. Find these on the box plot. If there are none, say “No high outliers”.
- Estimate the largest value in the data set that is not an outlier. Look at the right whisker on the box plot. Does not have to be exact.
- Estimate the smallest value in the data set that is not an outlier. Look at the left whisker on the box plot. Does not have to be exact.
- Decorate Poster

Now take a picture of your poster project and submit the picture to your instructor in Canvas.

After submitting the picture of the poster, go to the discussion menu in Canvas and complete the “Chapter 5 Project Discussion”. You will be discussing your findings with other students in the class.



Face to face Class Directions: *The class will be separated into groups. Each group is required to pick a “team name” for their group and analyze one skewed quantitative data set from the math 075-survey data fall 2015, create a poster summarizing their findings, and present the poster to other students in the class.*

Each group will have a different topic and will pick one of the following data sets from the math 075 survey data fall 2015 to present it to their classmates: Hours work per week, Hours sleep per night, Hours of exercise per week, Number of Minutes to get to school, College GPA, Number of Units completed at COC, Average cell phone bill per month, Dollars spent on a meal when eat out, Number of times eat at restaurant or fast food per week, Number of U.S. states visited, Number of minutes spent on social media.

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Presentation

Make sure each person on the team understands the poster and can present your findings. Bring your poster to a designated presentation area in the classroom and hang or tape your poster to a wall. One person at a time will present the poster. We will then rotate so that each member of the team gets to present. Everyone else will listen to presentations and give feedback.

