Math 21 – Pointers for Section 2.1

There are only 3 major topics in this section: organizing qualitative (categorical) data in tables, making a bar graph for qualitative data, and making a pie chart for qualitative data.

Frequency Distribution

A frequency distribution is a table that lists each possible categorical value with its frequency. (The frequency is just the number of times that value occurs.)

Relative Frequency Distribution

To make a relative frequency distribution, start with a regular frequency distribution. Divide each frequency by n (the sample size) to find the relative frequency.

A relative frequency is like a percentage (written in decimal format) that makes it easier to compare two groups of different sizes.

StatCrunch

- To make a frequency distribution in StatCrunch, type the data in 1 column (1 value per line).
- Click on Stat > Tables > Frequency.
- Select the column containing the data.
- Frequency and relative frequency are pre-selected by default, if you only want one you will have to select that one.
- Click on "Compute!"

Bar Graph

To make a bar graph, begin by looking at your frequency distribution.
The frequencies go on the y-axis, and be sure that your axis must go up to your highest frequency.
List each category along the x-axis.
Draw a bar above each category to the height of its frequency.
The bars should have a gap between them, and should have the same width.

StatCrunch – With Actual Data

Here is how to make a bar graph when you have the list of actual data.

- Type the data in 1 column (1 value per line).
- Click on Graph > Bar Plot > with data.
- Select the column containing the data.
- For Type, choose between frequency and relative frequency.
- Select "Value above bar" under "Display".
- Click on "Compute!"

StatCrunch – With a Summary of the Data

Here is how to make a bar graph when you have a summary of actual data, like
Back   9
Neck   5
Shoulder   4
…

- Type the categories in 1 column (1 category per line), with the frequencies next to them in the next column.
- Click on Graph > Bar Plot > with summary.
- Categories: Select the column containing the categories.
- Counts: Select the column containing the frequencies.
- For Type, choose between frequency and relative frequency.
- Select "Value above bar" under "Display".
- Click on "Compute!"

Pie Chart

To make a pie chart, begin by computing the percentages for each category.
Draw a circle that represents 100%.
For each category, draw a slice whose size is determined by the percentage.
Keep in mind that 25% should be a quarter-circle, 50% should be a half-circle, …

StatCrunch – With Actual Data

Here is how to make a pie chart when you have the list of actual data.

- Type the data in 1 column (1 value per line).
- Click on Graph > Pie Chart > with data.
- Select the column containing the data.
- Click on "Compute!"

StatCrunch – With a Summary of the Data

Here is how to make a pie chart when you have a summary of actual data, like
Back   9
Neck   5
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…

- Type the categories in 1 column (1 category per line), with the frequencies next to them in the next column.
- Click on Graph > Pie Chart > with summary.
- Categories: Select the column containing the categories.
- Counts: Select the column containing the frequencies.
- Click on "Compute!"