

Notebook



STATISTICS

- Vocabulary
- Population and Sample
- Two types of population

Statistics

- gather, describe and analyze the data
- Actual numerical descriptions of sample data
- A target population is a particular group of interest.
 - A sample population is a group from which the sample is taken.
 - A sampling frame is a physical list of all members of the sampled population
 - A sample is a subset of the population from which data are collected.

Population - Everything or everyone being studied.

Parameter - Character of the population.

↳ Greek letters: μ, σ

Sample - portion of the larger population.

Statistics - characteristics of the sample

↳ English letters: \bar{x}, s

Variable - characteristic of interest gathered from each item in the sample

Data - Actual values of the data

You want to know the average cost of statistics textbooks: survey 25 textbooks.

Population - all statistics textbooks

Parameter - average cost of all textbooks

Sample - 25 statistics textbooks

Statistics - average cost of 25 textbooks

Variable - cost of a statistics textbook

Data - actual cost of the textbook

Frequency: how often a value occurs

Frequency Table

Vocabulary

Relative Frequency - proportion of times a value occurs.

$$(\text{freq} / \text{total})$$

Cumulative Frequency - sum of all previous entries.

Table -

<u>Data value</u>	<u>F</u>	<u>rf</u>	<u>crf</u>
1	3	0.3	0.3
2	7	0.7	1.0

↓
last entry
should sum
to 1

Example

A baker keeps track of how many free doughnut holes his customers eat. 25 eat 1, 15 eat 2, 7 eat 3, and 3 eat 4.

values	f	r	$\frac{r}{f}$	C	$\frac{r}{f}$
1	25	25	$\frac{25}{50} = .5$.5
2	15	40	$\frac{15}{50} = .3$	<	.8
3	7	47	$\frac{7}{50} = .14$	<	.94
4	3	50	$\frac{3}{50} = .06$	<	1.00

What percent ate between 2 and 3 donuts?

$$\rightarrow 0.3 + 0.14 = 0.44 \rightarrow 44\%$$

What percent ate more than 3?

$$\rightarrow 0.06 \rightarrow 6\%$$

What percent ate at most 3?

$$\rightarrow 100\% - 6\% = 94\%$$