

Topic 1: Frequency Tables, Bar Graphs, and Histograms

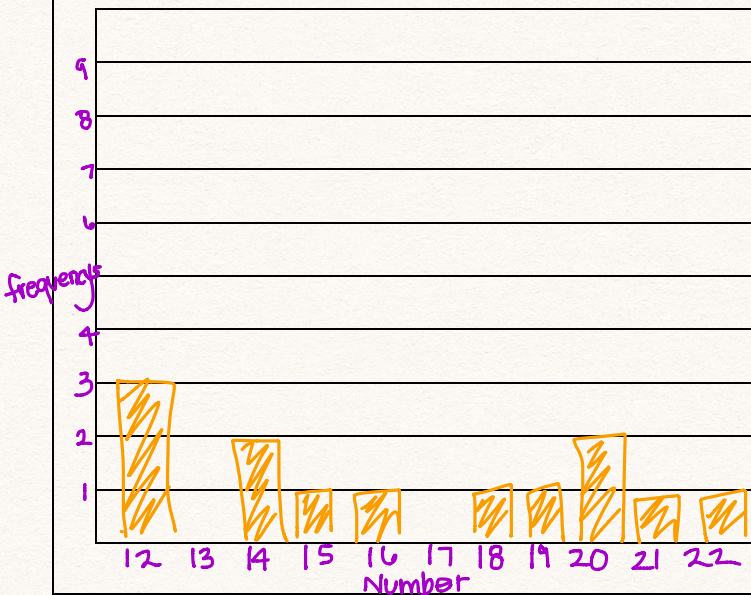
Frequency tables are used to show organized data that shows how often each # occurs
 Bar graphs are used to show data grouped into categories
 Histograms are used to show bar graphs showing the frequency of data in an interval

Create a frequency table from the data.

1. ~~12~~, ~~14~~, ~~16~~, ~~20~~, ~~21~~, ~~22~~, ~~12~~, ~~14~~, ~~18~~, ~~20~~, ~~12~~, ~~15~~

Number	12	13	14	15	16	17	18	19	20	21	22
Frequency	3	0	2	1	1	0	1	1	2	1	1

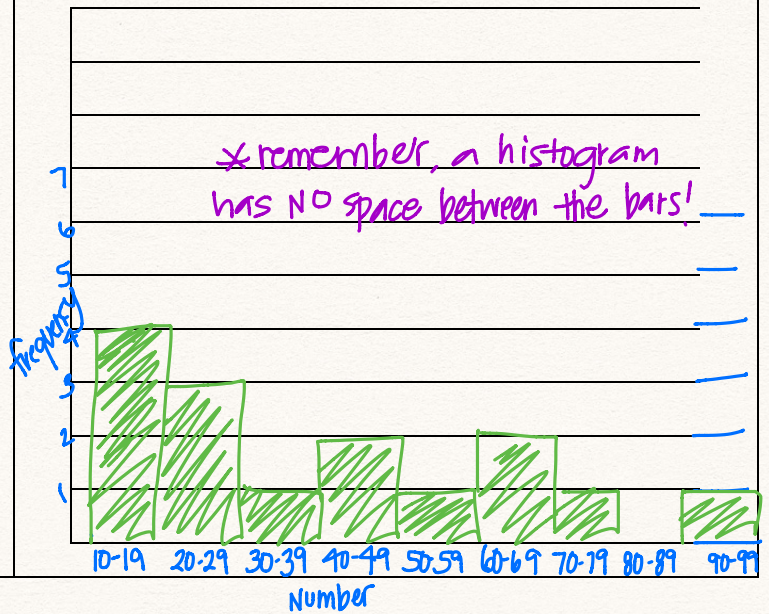
Create a bar graph from the data.



2. ~~64~~, ~~66~~, ~~17~~, ~~23~~, ~~12~~, ~~99~~, ~~15~~, ~~45~~, ~~25~~, ~~36~~, ~~43~~, ~~18~~, ~~25~~, ~~76~~, ~~56~~

Number (intervals of 10)	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Frequency									
	4	3	1	2	1	2	1	0	1

Create a histogram from the data.



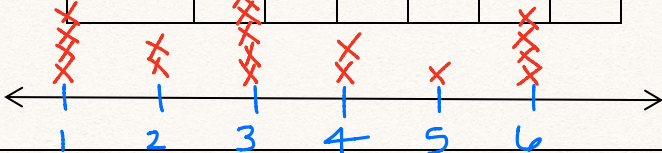
MODE!

Topic 2: Line Plots and Stem-and-Leaf Plots

Line plots are used to show frequency of data along a # line
 Stem-and-leaf plots are used to show data arranged in order L > G ← easy to find Median, Mode, & Range!

1. Draw a line plot from the frequency table below.

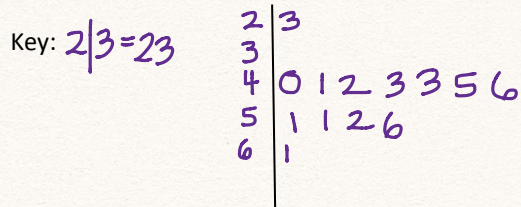
Number	1	2	3	4	5	6
Frequency	4	2	6	2	1	4



2. Create a stem-and-leaf plot from the data below.

Daily High Temperatures in January in °F:

~~43~~, ~~46~~, ~~52~~, ~~61~~, ~~43~~, ~~56~~, ~~45~~, ~~42~~, ~~41~~, ~~40~~, ~~51~~, ~~23~~, ~~51~~



Topic 3: Measures of Central Tendency

Measures of central tendency are used to describe the middle of a data set.

1. Find the mean, median, mode and range of the data set:

5 8 9 15 20
9, 5, 15, 8, 20

Mean = 11.4 Median = 9 Mode(s) = No Mode Range = 15

2. Find the mean, median, mode and range of the data set:

30 32 33 34 34 35 36 38
36, 38, 33, 34, 32, 30, 34, 35

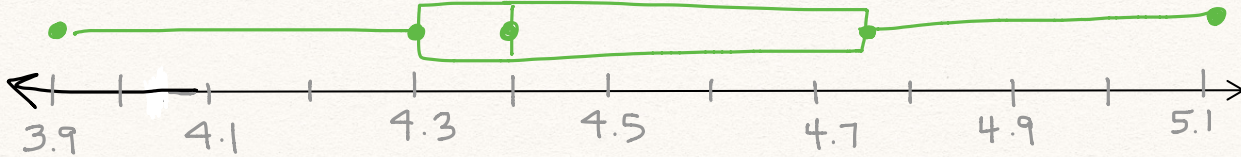
Mean = 34 Median = 34 Mode(s) = 34 Range = 8

Topic 4: Measures of Variability

Box-and-whisker plots are used to describe how spread out the data is.

1. Create a box-and-whisker plot from the data.

4.3, 5.1, 3.9, 4.5, 4.4, 4.9, 5.0, 4.7, 4.1, 4.6, 4.4, 4.3, 4.8, 4.4, 4.2, 4.5, 4.4
3.9, 4.1, 4.2, 4.3, 4.3, 4.4, 4.4, 4.4, 4.5, 4.5, 4.6, 4.7, 4.7, 4.8, 4.9, 5.0, 5.1
4.3 4.75



What is the median? 4.4

What is the lower quartile? 4.3

What is the upper quartile? 4.75

What is the range? $5.1 - 3.9 = 1.2$

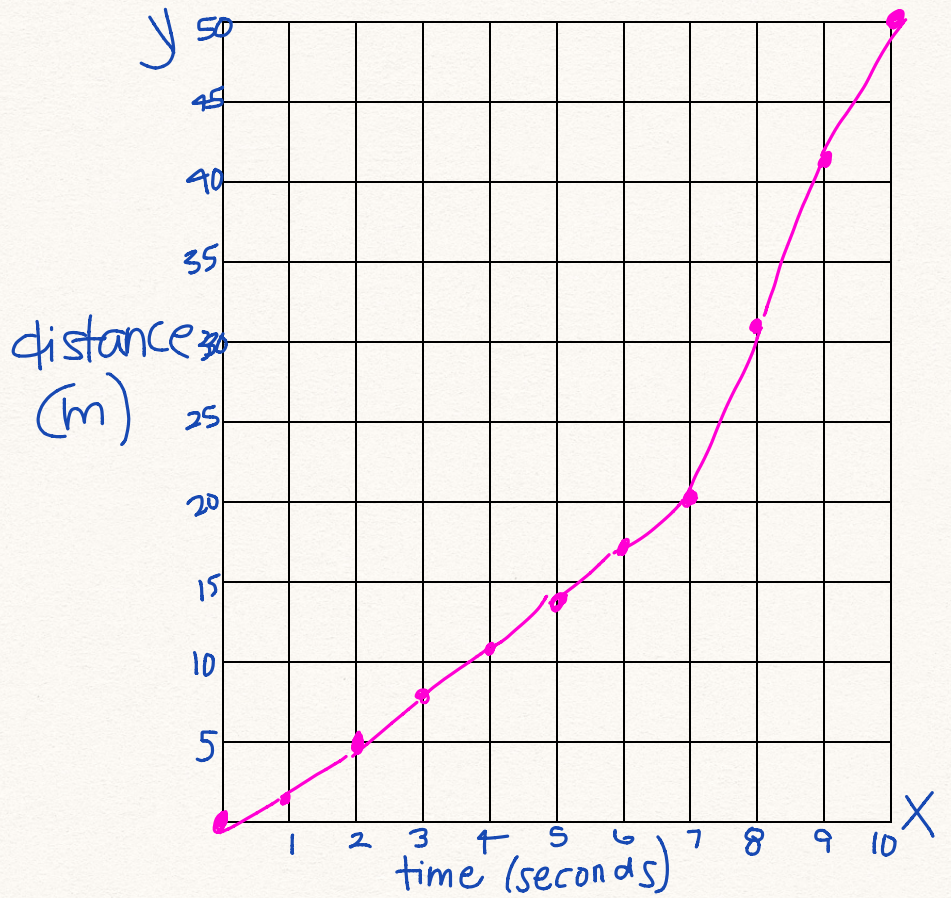
What is the interquartile range? $4.75 - 4.3 = .45$

Topic 5: Line Graphs

Line graphs are used to show how data changes over time

1. Create a line graph from the data.

Time (sec.)	Distance (meters)
0	0
1	2
2	5
3	8
4	11
5	14
6	17
7	20
8	31
9	42
10	50



Topic 6: Scatter Plots

Scatter plots are used to show a relationship between 2 data sets

1. Create a scatter graph from the data. Answer the questions below.

using ordered pairs in a coordinate plane

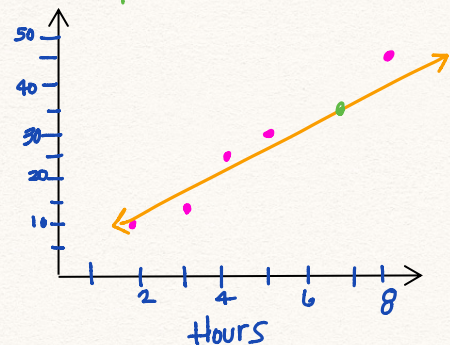
Hours	3	5	4	8	2
Tip (\$)	16	33	27	48	11

What kind of correlation does the data show?

positive!

How much tip should a server earn after 7 hours?

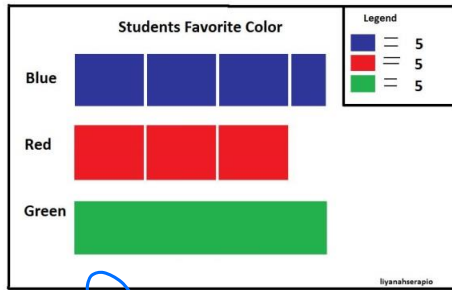
≈ \$35-40



Topic 7: Misleading graphs and data

Misleading graphs and data are used *often in false advertising.*

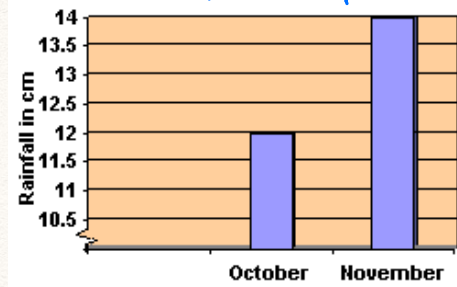
How is this graph misleading? *the blocks are different sizes - 1 green is the size of 3 1/2 blue*
 How could we fix it so that it wasn't misleading?
Make all the blocks uniformly sized



How is this graph misleading? *it looks like Shayna's candy could fit 3X into Michael's*
 How could we fix it so that it wasn't misleading?
Make it a bar graph with uniform bar widths



How is this graph misleading? *it doesn't start at 0 on the vertical axis; differences look greater because of the 0.5 scale*
 How could we fix it so that it wasn't misleading?
Start at 0, use a scale of 1



How is this misleading?

A small business has 5 employees with the following salaries: \$80,000 owner, \$18,000, \$22,000, \$20,000, \$23,000. The owner places an ad that says:
Help Wanted! Average salary \$34,600!

His salary (an outlier) was included to make the average much higher

Topic 8: Populations and Samples

Population: *the entire group being surveyed or studied*

Sample: *a part of the population being studied*

- Customers at the first 5 tables at a vegetarian restaurant are asked if they prefer meat or vegetarian dishes.

Identify the:

Population: *customers at a vegetarian restaurant*

Sample: *customers at the 1st 5 tables*

Possible Bias: *if they are eating at a vegetarian restaurant, they more than likely don't eat a bit of meat*

Identify the sampling method:

systematic

- University of Georgia Biology students with last names that start with A, M, and Y are asked what their favorite academic subject is.

Identify the:

Population: *UGA biology students*

Sample: *UGA Biology students with last names that start*

Possible Bias: *they are biology majors, with A, M, Y they probably enjoy science!*

Identify the sampling method:

systematic

↳ review sampling Methods

To prepare for your test:

- Review your notes, practice, and quizzes.
- Review using IXL practice.
- Review when each type of graph is best used.