AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 2-3 Section Description: Intro and So, What Is (Are?) Statistics?

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

variation: a change or difference in condition, amount, or level, typically with certain limits

statistics: a way of reasoning, along with a collection of tools and methods, designed to help us understand the world

2. In one or 2 sentences, what is the main idea of your section?

statistics allows us to see the world more clearly and accurately.

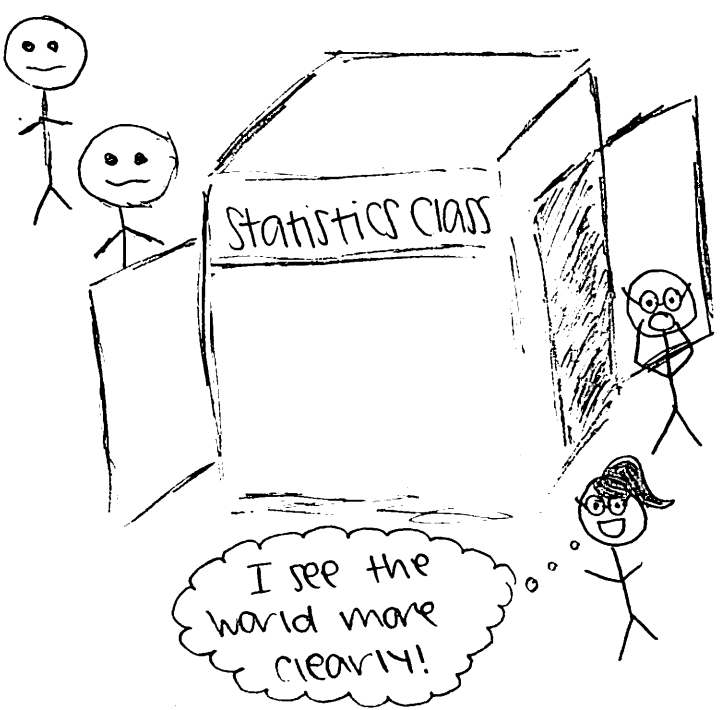
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

statistics is about variation. since data varies and we can't see everything nor measure it all, it's a challenge to make sense of it.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- thinking statically = seeing world more clearly & accurately
- -Staticians help numerous other occupations such as scientists and social scientists
- -need statistics for data & understanding the world
- -statistics is about variation (people are different, we can't see everything nor measure it all)

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 3-4 Section Description: Entire Pages

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Think: a step to do stats correctly by just thinking where you're headed and why.
Show: A step that shows that the mechanics and displays and visuals are important.
Tell: The step saying that until you tell/explain your results so that someone understand it, the job is not done.
Step-by-Step → This is how the book illustrates the way statisticians attack and solve problems step by step.
Just Checking → Questions in the chapter that check to see if you understand the material
Math Boxes → these contain formulas & procedures and explanations of stats

2. In one or 2 sentences, what is the main idea of your section?

The main idea of my section is to explain what and how stats is presented in the book. It also talks about the methods on how to do stats correctly and tips and tools the book have to understand the material

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

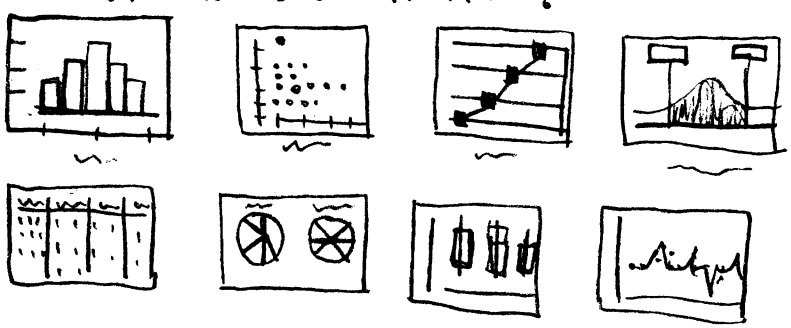
Some individuals may have a problem with how statistics problems are presented. There is no specific way that the problems and data are presented.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Statistics is about variation
- When doing stats, just:
  - Think
  - Show
  - Tell
- Work problems step-by-step; emulating statisticians.
- Answer Just Checking questions to make sure you're understanding the material.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

Welcome to Statistics!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 5-6 Section Description: Entire Pages

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

What Can Go Wrong? - helps you avoid some of the most common mistakes.
TI Tips - teaches you how to use it
What Have We Learned - list of Terms/ summary of important skills
Excercises - help you learn to use the stats you've learned.

2. In one or 2 sentences, what is the main idea of your section?

This section is basically telling you what to expect and what you are going to be dealing with.

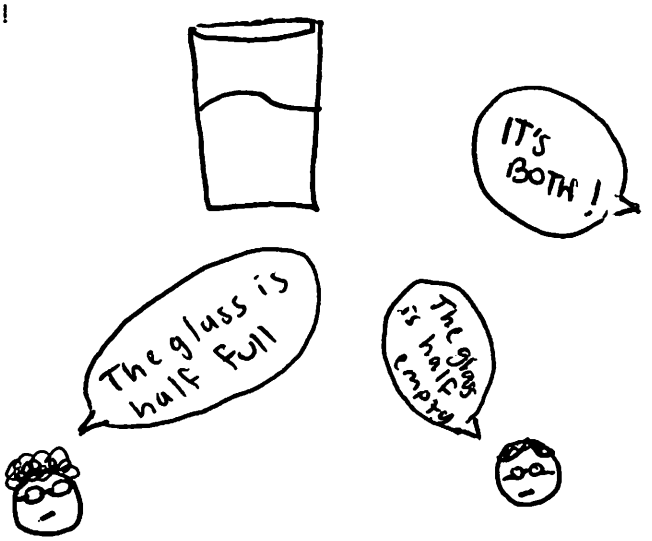
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Some individuals may have problems with the difference of "answers" rather than "solutions". Also some may be confused as to which solution is actually correct because it could be both.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- could be one or more solution
- TI Tips help you w/ calculations
- Each chapter has a section called WhatCan Go Wrong.
- You need to understand calculations
- No one can learn stats by just reading or listening
- Answers are sketches of complete solutions

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 7-8 Section Description: Everything until Data Tables - Including But What ARE data?

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

context - the five w's (who, what, when, where, why)
data - the who & the what; information / labels in a situation

2. In one or 2 sentences, what is the main idea of your section?

Businesses use data on customers, transactions, & sales to maximize their sales performance. Data - numerical values or labels - needs to be given a context (the who, what, when, where, why).

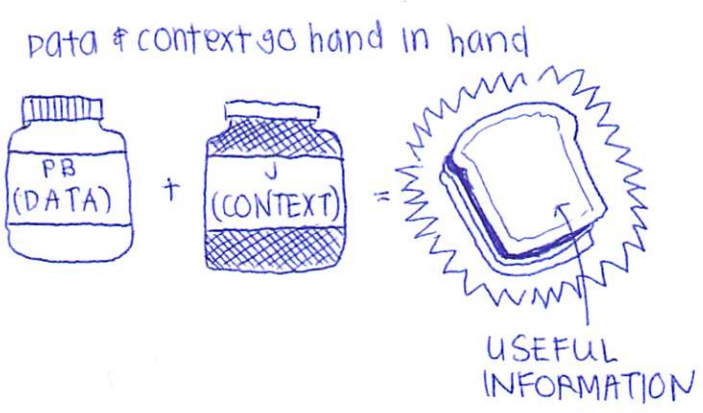
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

The idea that context is a must when working with data may be a problem to some because ~~so~~ they may be too lazy to ~~include~~ notice background info or labels.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Data is extremely important for businesses
- Data can help them:
  - know where inventory is
  - know what customers prefer
  - predict future purchases & how much of each item to stock
  - improve customer service
- "Data trumps intuition"
- Data isn't all numerical
  - can be names / labels
- Data is useless without context
- NO who/what = no data or useful information

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 8-9 Section Description: Data Tables and Who

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

variables: the characteristics recorded about each individual

Context: Who, What, When, Where, Why, and How
Data: information, usually the Who or What in context.
Data table: a table that is filled in with specific data pertaining to something
Respondents: Individuals who answer a survey.
Subjects/participants: People on whom we experiment
Records/cases: rows in a database

2. In one or 2 sentences, what is the main idea of your section?

To understand the concepts of filling in data and its terms.

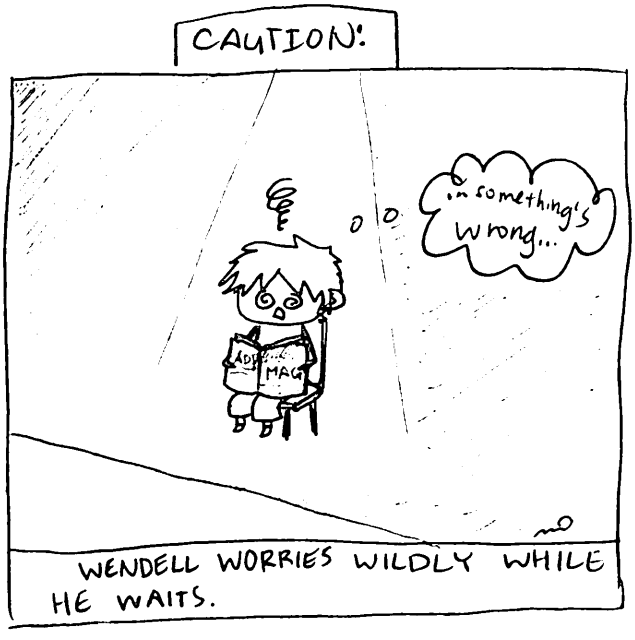
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Some people may have a problem with including all of the parts of context in their data.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- data is useless without context
- Context is made up of:
  - Who
  - What
  - When
  - Where
  - How
  - Why

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please! To remember that context is important, you should know the 5 W's and 1 H. Remember this sentence to remind yourself:



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 9-11 Section Description: What and Why

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

2. In one or 2 sentences, what is the main idea of your section?

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

1. Cases - the issue(s) being dealt with
respondents - Individuals who answer a survey
subjects - individual(s) used in the experiment
participants - individual(s) used in the experiment
experimental units - animals, plants, web sites, and other inanimate subjects
records - the rows in a database
observations - obtained data values
variables - characteristics recorded about each individual
Units - measured values
Categorical variable - when a variable names categories and answers questions about how cases fall into those categories
Quantitative variable - when a measured variable answers questions about the quantity of what is measured

2. The main idea revolves on the basic concepts and its future uses in the application of statistical analysis.

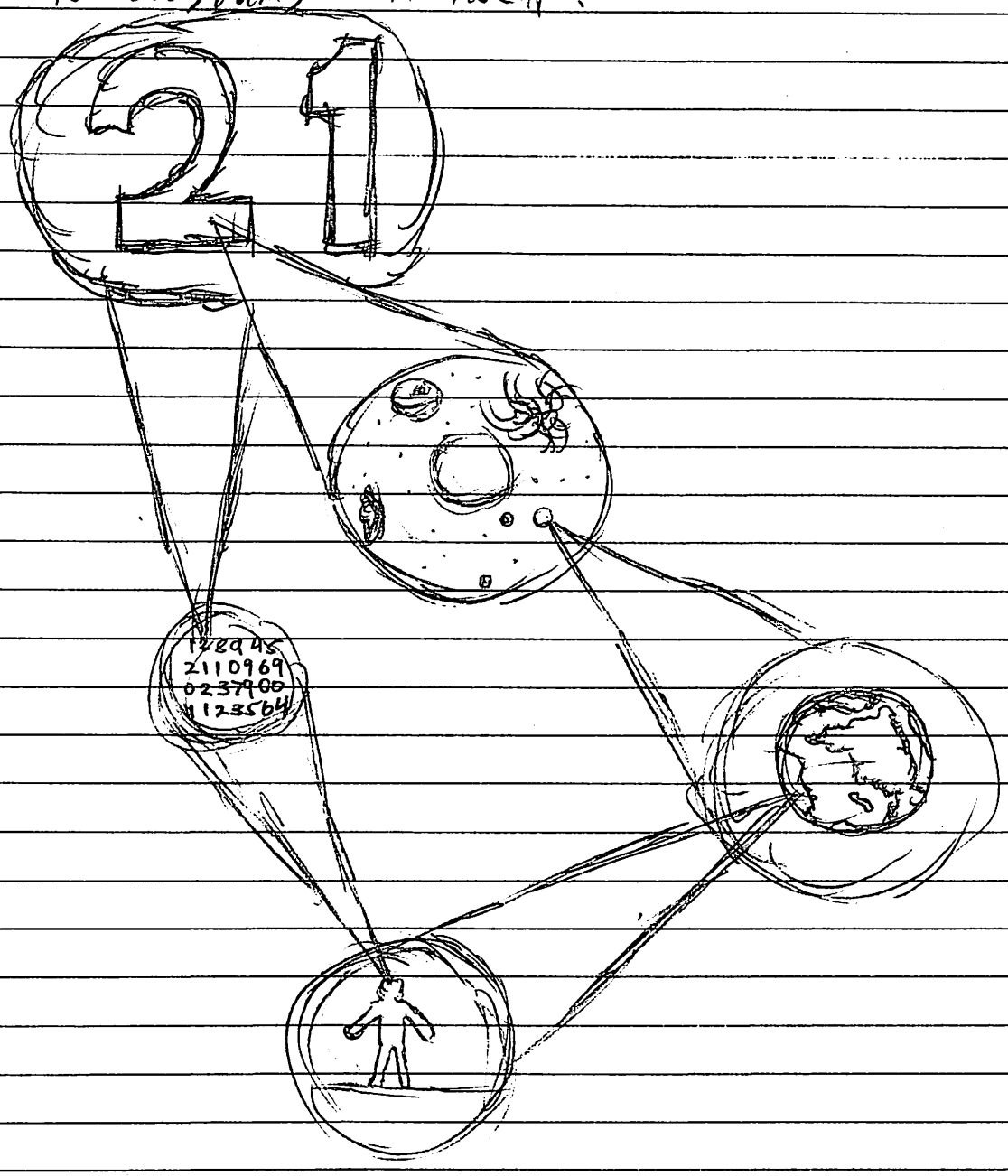
3. The concepts of variables and their various roles / natures may confuse some students as to what they analyze and how it greatly affects that analysis in the end result.

4. • When dealing with cases, the "who" must be identified and observed
• The "What" and "Why" come next in analysis of the case being studied.
• Variables, subjects, and experimental units

will be deeply part of your results.

- Observe and analyze everything that can be done.
- Everything is statistics as statistics is everything in itself.

5.



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 11-12 Section Description: Counts Count and Identifying Identifiers

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

counting: natural way to summarize the categorical variable shipping method.
to measure the amount of things
quantitative variable: a number with units

2. In one or 2 sentences, what is the main idea of your section?

The main idea of my section is the difference between the 2 types of counting and the importance of each kind. In addition, the difference between a variable and an identifier is discussed.

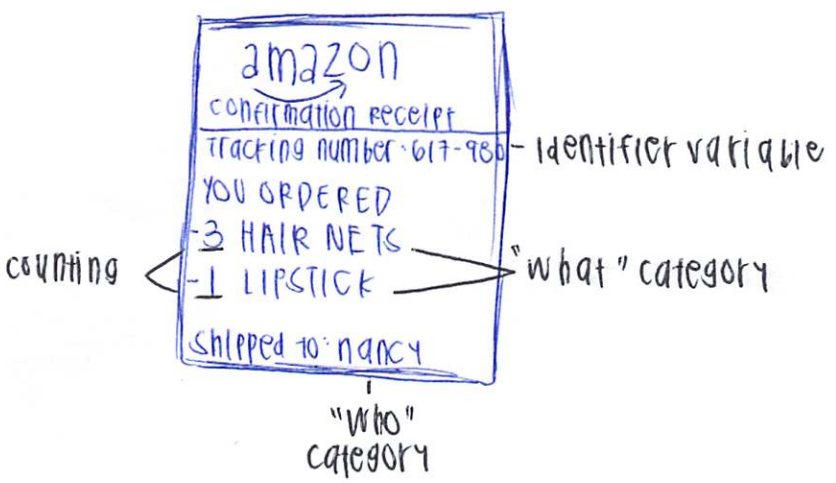
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

The concept of the alleged "who" and "what" is confusing because the two variables change depending on the situation.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- counting
  - to summarize categorical variable
  - measure amt. of things
- category
  - labels are "what"
  - individuals are "who"
- identifier variables (SSN, password)
  - combines data
  - protect confidentiality
  - provide unique labels

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 12-13 Section Description: Where, When, and How

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

HOW: data collected can make the difference between insight and nonsense

Where: Values measured in tanzania may different from similar measure in mexico.

2. In one or 2 sentences, what is the main idea of your section?

In APStat, it is important to know who, what and why to collect concise data. Also to know where, when and are also important factors in order to have a better understanding on the Data.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

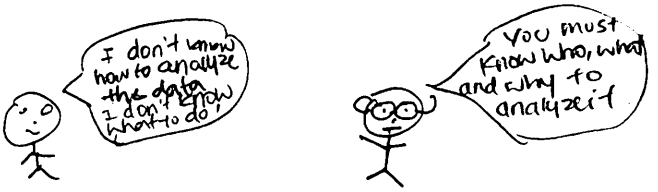
sometimes the person may not know how the different datas collected can make a difference because they ~~can~~ don't know why they are examine the data.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- knowing who, what, why will is necessary to get concise analyzed data.
- knowing when and where also help produces a more concise data.
- one primary concern of statistics is the design of sound methods for collecting data
- 1st step of data analysis is to know why you are examine it.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

	scc	(m)
Mexico	58.33	27.65
tanzania	57.59	27.10



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 14-16 Section Description: Entire Pages

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

context - describes who x what measured, how & where data collected, when & why study performed
data - recorded info ~~either~~ with #s or labels w/ context withheld.
data table - arranged data by rows (cases) and columns (variables)
cases - individual of whom or which has data
variables - holds info of characteristics in cases →

2. In one or 2 sentences, what is the main idea of your section?

The main idea of this section is to find out information of context of the problem and organize them into categories to solve problems

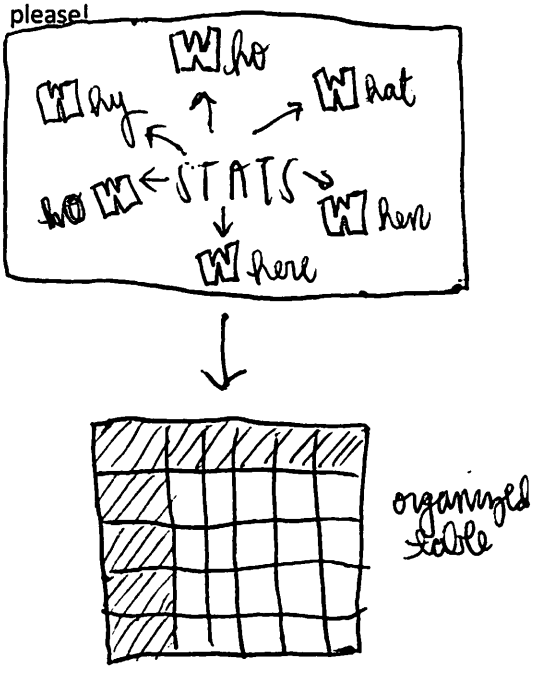
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Individuals may have trouble finding information from a problem and correctly organizing their information. because the concept and category is new and may need time to learn.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- know your 6 W's & be able to identify: who, what, when, where why, how
- record information accordingly; data table, chart, etc.
- case is the thing, variables are information of the thing.
- Categorical variable - places thing into its own place using a name or numerals
- Quantitative variable - variable corresponds to a numerical value and always uses labels.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



1.
Categorical variable - variable that names categories (w/ #s or words)
Quantitative variable - always have units, variables have numerical values
Units - quantity/amount for standard measurement. ex. $, hours, grams

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 20-21 Section Description: Intro and The Three Rules Of Data Analysis

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

WHO: people on the Titanic
WHAT: survival status, age, sex, ticket classes
WHEN: April 14th, 1912
WHERE: North Atlantic
HOW: A variety of sources & internet sites.
WHY: Historical interest.

2. In one or 2 sentences, what is the main idea of your section?

With 1500 passengers over all, the surveyor tries to seperate each group. The variables being dead or alive, age, sex, and ticket class (first, second, third, & crew).

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

There needs to be a way to put the data into perspective, so the surveyor can see patterns and relationships.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

* When given data ... *

- Make a picture.
  - By doing so, you can see important patterns & relationships in your data.
- Make a table
  - This gives a nice & clean format to work with.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

9 PEOPLE:

survived	Age	sex	class
dead	Adult	Male	Third
dead	Adult	Male	crew
dead	Adult	Male	Third
dead	Adult	Male	crew
dead	Adult	Male	crew
dead	Adult	Male	crew
Alive	Adult	female	First
dead	Adult	Male	Third
dead	Adult	Male	crew.

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 21-22 Section Description: Frequency Tables: Making Piles

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

frequency table: records totals + category names
proportion: fraction
relative frequency table: displays percentages
area principle: says that area occupied by a part of the graph should correspond to magnitude of value it represents

2. In one or 2 sentences, what is the main idea of your section?

Data analysis should be done with pictures - they can display things clearly and show important features.

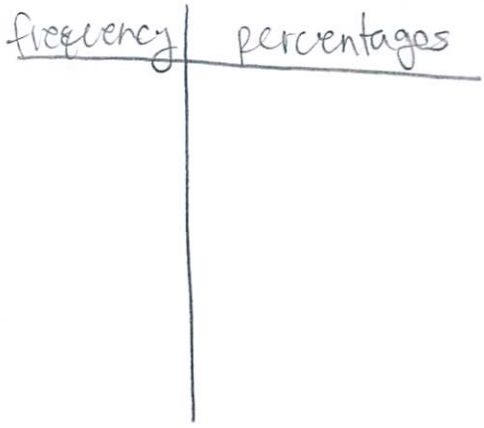
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

The area principle sounds complicated but it's simply ensuring that drawings are proportional.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- pictures make data reading and analysis easier

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please! Relative frequency table



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 22-23 Section Description: The Area Principle and Bar Charts

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

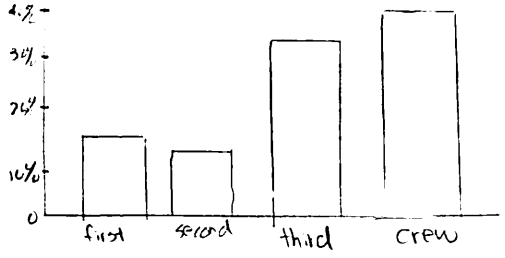
1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:
   - observe a fundamental principle of graphing data called "area principle" says the area occupied by a part of graph should correspond to the magnitude of value it represents
   - Bar chart displays the distribution of a categorical variable, showing the counts for each category next to each other for easy comparison
   - Pie chart: show the whole group of cases as a circle

2. In one or 2 sentences, what is the main idea of your section?
   - Bar charts help you understand.makes it easier to compare

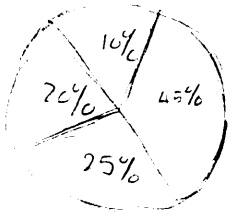
3. In one or 2 sentences, which concepts may some individuals have problems with and why?
   - How could you tell the area could be the same?

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.
   - Graph, charts help you see the problem clearly. Easier to understand.
   - Bar chart give an accurate visual impression of the distribution

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



← Bar chart



← Pie chart

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 23-24 Section Description: Pie Charts

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:
Pie charts: A circle chart that slices the circle into pieces proportional to the fraction of the whole in each category.
Categorical Data condition: The data are counts or percentages of individuals in categories

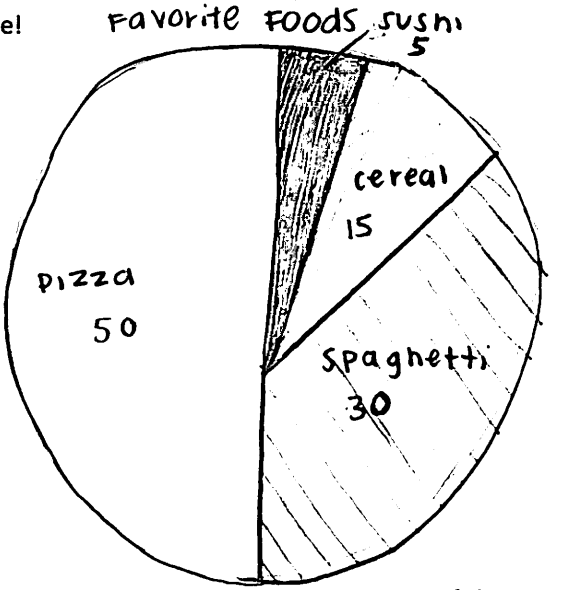
2. In one or 2 sentences, what is the main idea of your section?
Pie charts provide a visual interpretation of how a whole group is partitioned into smaller fractions

3. In one or 2 sentences, which concepts may some individuals have problems with and why?
Some individuals might have difficulty using the categorical data condition to ensure that the pie chart can be used in a problem.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Pie charts help the reader visualize a problem.
- use the categorical data condition to ensure that pie charts can be used.
- categories cannot overlap and must add up to 100%

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



50 + 5 + 30 + 15 = 100 = 100
100%

8/20/2012

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 24-26 Section Description: Contingency Tables:

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Categorical Data Condition: The data are counts or percentages of individuals in categories

contingency table: A display format used to analyze and record the relationship between two or more categorical variables.

Marginal distribution: The frequency distribution of one of the variables in the margin of a contingency table.

2. In one or 2 sentences, what is the main idea of your section?

The section shows how to properly choose which diagrams to use for certain types of datas and that by reading the data, one can assume the answer to questions. It introduced contigency table and how it is drawn, and that some of wording of questions can be confusing.

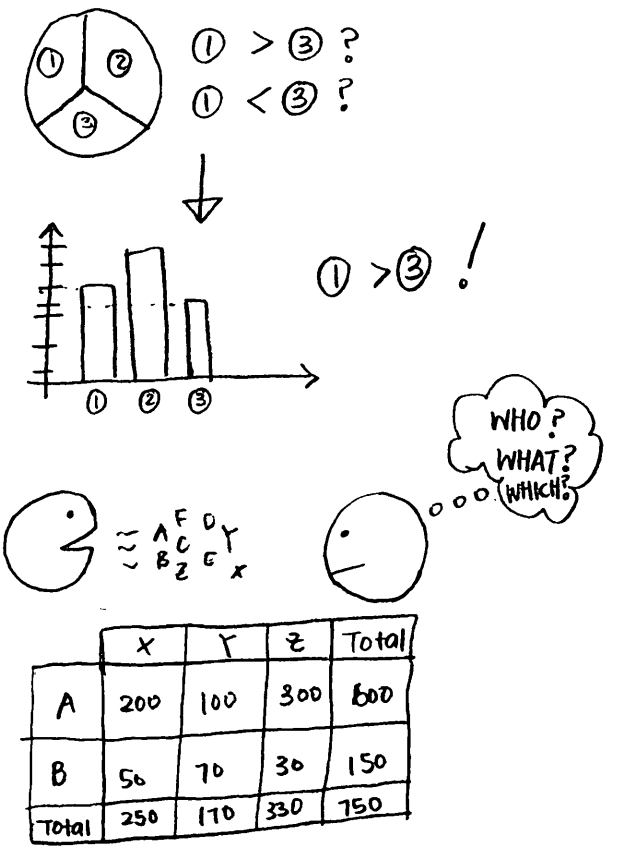
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

The way a question was asked can be confusing to some people because in some cases, it is ambiguous what it is exactly asking for, for example, "What percent were second-class passengers who survived?" can confuse which percentage the question is asking for. So, the reader has to read carefully and fully understand the question in order to answer.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Comparison is easier to be noticed with a bar graph
- When there are many categories to look at, it is better to look at them one by one, rather than as a whole.
- Always try to find WHO and whether the question is asking for column or row.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic to help people better understand or remember what you said above. PG only please!



	X	Y	Z	Total
A	200	100	300	600
B	50	70	30	150
Total	250	170	330	750

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 24-26 Section Description: Contingency Tables:

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:
- pie charts = show the whole group of cases as a circle. They slice the circle into pieces whose size is proportional to the fraction of the whole in each category.
- categorical data condition: the data are counts or percentages of individuals in categories.
- contingency table = shows how the individuals are distributed along each variable, contingent on the value of the other variable.
- marginal distribution = the frequency distribution of one of the variables when presented in the margins of a contingency table.

2. In one or 2 sentences, what is the main idea of your section?
This section talked about contingency tables, and how to read them. Contingency tables take two variables that relate to each other, and allows one to look at them together. There are different sub topics under the big umbrella variable that allows one to look at the table in more detail

3. In one or 2 sentences, which concepts may some individuals have problems with and why?
when displaying data on the tables as percentages, it can be difficult to figure out what to make the percentage out of. There are a lot of data that can be interpreted on the table so it gets confusing to read.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.
- contingency tables allow one to see the relationship between one variable and another.
  - generally a two-way table.
  - margin on the right and bottom give totals.
  - each cell gives the count for a combination of value of 2 variables
- because there is so much information, it is better to look at them one at a time.
  - can look at column or row denominated for percentage = conditional distribution

* always be sure to ask "percent of what" to know whether you want row, column, or table percentage.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

relationship between the kind of ticket and the rate of survival on the Titanic.

		class				
		1st	2nd	3rd	crew	total
survival	Alive	203	118	178	212	711
	Dead	122	167	528	673	1490
	Total	325	285	706	885	2201

cell

margin

conditional distribution.

		class				
		1st	2nd	3rd	crew	total
survival	Alive	count	203	118	178	212	711
		% of column	62.5%	41.4%	25.2%	24.0%	32.3%
	Dead	count	122	167	528	673	1490
		% of column.	37.5%	57.6%	74.8%	76.0%	67.7%
	Total	count	325	285	706	885	2201

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 26-27 Section Description: Conditional Distributions

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Conditional Distribution: Shows the distribution of one variable for just the individuals who satisfy some condition on another variable.

Contigency Table: A table that shows how individuals are distributed along each variable

2. In one or 2 sentences, what is the main idea of your section?

In my section, the book teaches students a conditional distribution; which is basically the distribution of a variable based on conditions.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Students might have problems getting use to reading contigency tables - as did I; however, the data can seem more familiar when put into something like a Pie Graph.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

1. Conditional Distribution
   a. a distribution of a variable based on conditions

ex.

Alive	White	Asian	Indian
Dead			

2. Contigency Table
   a. A table with the variables organized on the x-axis

ex

Variable	White	Asian	Indian
Alive			
Dead			

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

Class

	First	2nd	3rd	Crew	Total
Alive	203	118	178	212	711
	28.6%	16.6%	25.0%	29.8%	100%

Conditional Distr. of ticket class, conditional on having survived.

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 26-27 Section Description: Conditional Distributions

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Conditional distribution - when a contingency table shows the distribution of one variable for just the individuals who satisfy some condition on another variable.

Independent - In a contingency table, when the distribution of one variable is the same for all categories of another, we say that the variables are independent.

2. In one or 2 sentences, what is the main idea of your section?

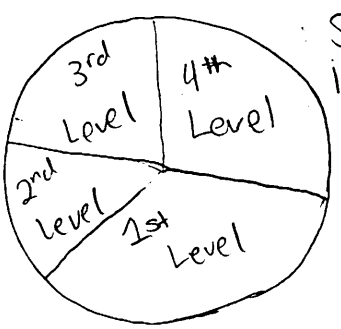
The main idea of this section is to have different perspectives of how to look at the probabilities of an event, and to narrow it down to more and much deeper information. In this case, figuring out if ticket classes was the key to surviving the Titanic, by analyzing a chart of just percentages of survival in different classes and another for non-survival.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

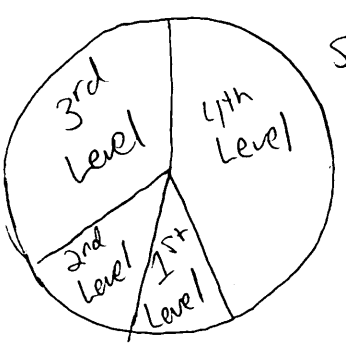
Individuals, facts or information can be applied, or used, to two or more variables in a conditional distribution

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



Size of survivors in each level



Size of those who died in each level.

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 28-29 Section Description: Everything on pg 28 & Segmented Bar Charts

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Independent is the categories that are not effected by a variable

Segmented bar chart treats each bar as a whole and divids into segegment sort of like a piechart

2. In one or 2 sentences, what is the main idea of your section?

The main idea is that categories can be depent or indepent of variables

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

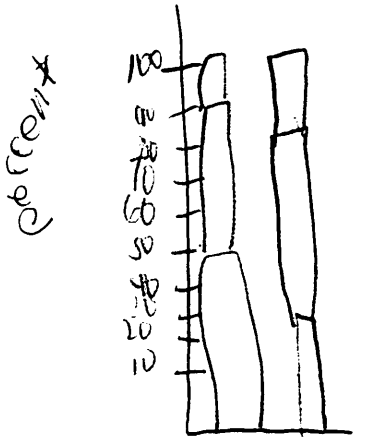
the idea that a varible might not affect data because we have been taught that variables affect data.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- not all variable effect the category and the ones that don't effect data are called indpendent.
- segmented bar charts can help tell you whether or not a varible is indpendent or dependent

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

Segmented bar chart



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 28-29 Section Description: Everything on pg 28 & Segmented Bar Charts

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Independent: in a contingency table, when the distribution of one variable is the same for all categories of another, we say that the variables are independent. Segmented bar chart: treats each bar as the "whole" and divides it proportionally into segments corresponding to the percentage in each group.

2. In one or 2 sentences, what is the main idea of your section?

A Segmented bar chart can be used as a substitute of a circle to represent data as each bar is 100 percent. When the distribution of one variable is the same for all categories, the variables are independ

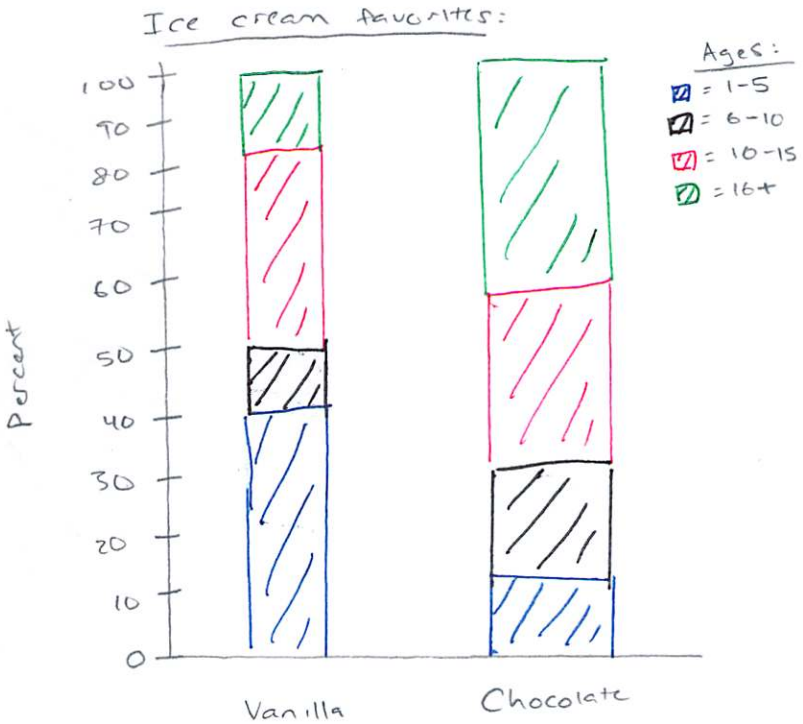
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

A concept that might confuse people is to differentiate between independent and dependent variables. Since some situations can be ambiguous, people can be unsure about the variables.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- To compare between Statistics, find if the variables are dependent or independent.
- If the variable is the same for all, it is independent.
- Another chart is the Segmented bar chart to show the statistics in bar graph style.
  - The numbers have to be converted to percentages for Segmented bar chart.
  - Percentage can be found by dividing individuals by total.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 29-31 Section Description: Examining Contingency Tables Step-By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

variable- a quantity or function that may assume any given value or set of values.

categorical- pertaining to, or in a category.

2. In one or 2 sentences, what is the main idea of your section?

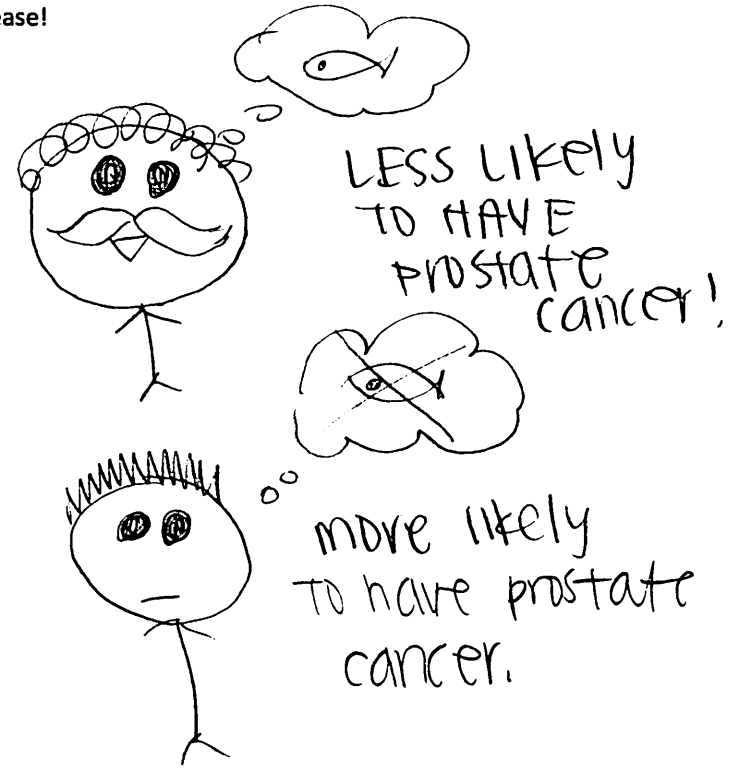
The main idea of this section shows the fish diet of men with and without prostate cancer. It shows that the more fish consumed, the less likely of prostat

3. In one or 2 sentences, which concepts may some individuals have problems with and why? cancer development people may have it because of some other reason, a diet of fish can't determine the entire cause for prostate cancer.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- it is possible that fish consumption and prostate cancer could be related.
- many charts are used to show the statistics of how fish consumption is possibly effective

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 29-31 Section Description: Examining Contingency Tables Step-By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

- Categorical Data condition: ex. I have counts for both fish consumption and cancer diagnosis. The categories of diet do not overlap, and the diagnoses do not overlap. It is okay to draw pie or bar charts.
- relative proportions: A relationship between quantities such that if one varies then another varies in a manner dependent on the first

2. In one or 2 sentences, what is the main idea of your section?

Contingency tables are two-way tables that exam relationships between categorical variables. They show the association with one another, and they can be either frequency counts or relative frequency. (It is similar to a one-way table)

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Deciding wether or not the two categories associate with one another and discussing the possible real-world consequences. You have to be careful to not overstate what you see because the results may not generalize to other situations. One must not violate the area principle as well. This is considered the most common mistake in graphical display and it is the result of artistic presentation

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Mechanics - It is important to check the marginal distributions first before taking a look at the two variables together
- Plan / variables - be sure to understand the problem and be able to identify the variables. Report the W's as well.
- Use appropriate displays as well. Both pie charts and bar charts can be used.
- Conclusion - the last thing to do is to interpret the patterns in the table and displays in context.
- Must try to keep it honest!

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

Prostate cancer

Fish Consumption	No	Yes	total
never / seldom	1110	14	1124 (7.0.1.)
small part of diet	2420	201	2621 (41.8.1.)
Moderate part	2709	209	2918 (47.5.1.)
Large part	507	42	549 (8.8.1.)
total	5806 (97.6.1.)	466 (7.4.1.)	6272 (100.1.)

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 31-32 Section Description: What Can Go Wrong?

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

1. Pie Chart - a type of graph in which is a circle; the circle is divided into different sections that will sum up to a whole. furthermore
2. Bar chart - a rectangular bar graph ~~that are~~ that is proportional to the values that they represent.

2. In one or 2 sentences, what is the main idea of your section?

In "what can go wrong", this sections discusses the many possible mistakes that a graph or chart may can ~~display~~ presents.

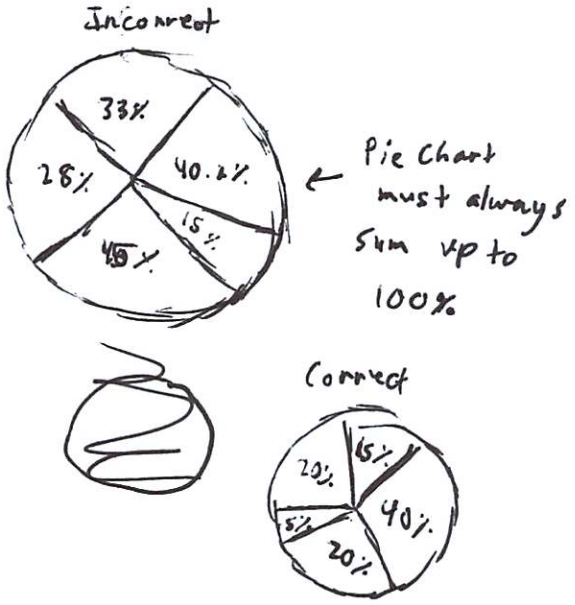
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Some individuals may ~~mistake data as accurate~~ be fooled by data that is presented without the appropriate amount of individuals. ~~For example, students record~~ People may be fooled because some concluded results data results may have a minimal amount of test subjects that affect the accuracy of the data.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- principles of graphs must not be altered or violated
- pie charts must total to be 100%
- label units must stay the same throughout the data (same pattern)
- make sure all variables and data material are taken into consideration for accuracy
- make sure there is a credible amount of individuals in ~~data~~ concluded data

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 31-32 Section Description: What Can Go Wrong?

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:
area principle - the area of the figure accurately represents the data

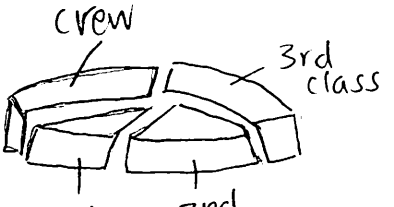
variables: element that is liable to vary or change

2. In one or 2 sentences, what is the main idea of your section?
While using the pie chart or bar graph, remember to keep data mathematically correct (data must add to 100%) and variables must be consistent. Also, to ensure a good experiment, a good amount of subjects is important as well as looking at the variables and their relationships.

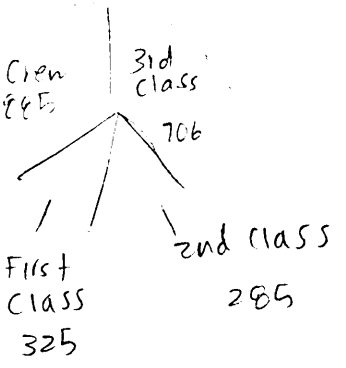
3. In one or 2 sentences, which concepts may some individuals have problems with and why?
look at the diagrams on pg 31 for a better visual explanation on the area principle; it is hard to visualize these. Also, "similar-sounding percentages" (p 32) may be a bit confusing because they are very alike but reading closely should help.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.
- don't violate area principle by distorting pie chart
- make sure all data sums up to 100%.
- x and y axis should be consistent
- be specific when describing data
- look at variables separately
- use enough subjects for experiment
- look at relationships between data

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



VIOLATING AREA PRINCIPLE



CORRECT

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 33-35 Section Description: Entire Pages

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Simpson's paradox: don't use silly or silly averages. Averages can be misleading. The problem is unfair averaging over difficult groups.

2. In one or 2 sentences, what is the main idea of your section?

This section is about simpsons paradox. It is about analyzing data and drawing them yourself.

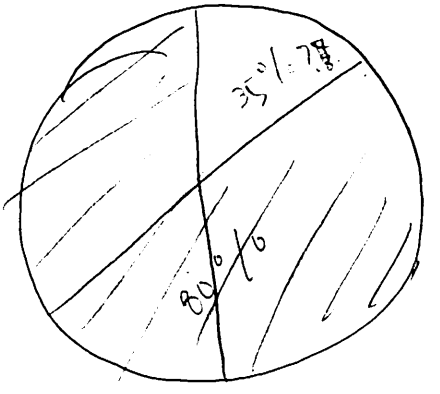
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Simpson's Rule may be hard for some because of the misinterpretations of the data and graph.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Simpson's rule.
- Bar graph
- Pie graph.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 33-35 Section Description: Entire Pages

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Simpsons paradox – unfair averaging over different groups
frequency table – categories in a categorical value and gives counts or percentages of observations in each category
Distribution – possible values of the variable and relative frequency of each value
Area principle – each data should be represented by some amount of area in a statistical display

2. In one or 2 sentences, what is the main idea of your section?

Do not use some averages because there is a problem with unfair averaging over different groups.

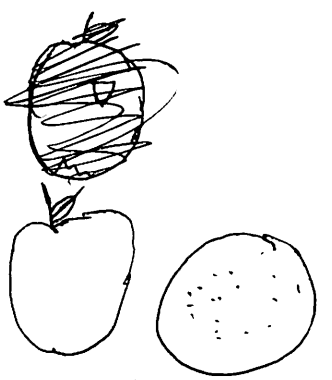
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

How the overall average can be misleading because often people are spoonfed the overall average.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Overall averages can be misleading
  - unfair averaging sometimes
  - unfair comparisons due to ~~data~~ uncomparable circumstances

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



apples & oranges

Barchart - a chart with a bar representing count of each category
Pie chart - shows how a whole divides into categories with area
Contingency table displays counts and variables and ~~per~~
percentages of individuals falling into named categories
on two or more variables
Marginal distribution - distribution of either variable alone.
Conditional distribution - distribution of variable
~~is~~ limited to consider only a smaller group of individuals
Independence - conditional distribution of one variable is same
for each category

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 45-47 Section Description: Introduction and Histograms...

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

bins - equal-width piles.

distribution - bins and counts of each bin gives distribution of the quantitative variable.

histogram - plots the bin counts as the heights of bars.

relative frequency histogram - replacing the counts on vertical axis with percentage of occurence in each bin.

2. In one or 2 sentences, what is the main idea of your section?

The main idea of my section tells us the basic functions of a histogram, and how it can be used in many ways to express data.

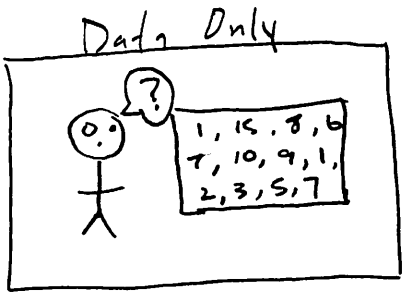
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Some individuals might have trouble with relative frequency histogram because it is just like an ordinary histogram, except you do it in percentages.

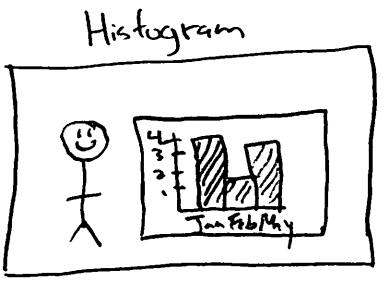
4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- bins = bars on a histogram
- counts = the number of occurences per bin.
- histograms easily show distribution.
- relative frequency histograms equals a histogram but vertical axis is in percentages.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



Vs.



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 47-49 Section Description: Stem-and-Leaf Displays

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:
Stem-and-leaf displays: contain all the information found in a histogram, and when carefully drawn, satisfy the area principle and show the distribution. They also preserve individual data values.

2. In one or 2 sentences, what is the main idea of your section?
A stem-and-leaf display helps visualize the data by separating the leading digits from trailing digits to become the stem and the leaf, respectively. The stems are used for bins and how they are split is left to the maker.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?
The leaves of each value with the same stem are stacked next to each other in order to replicate the shape of the histogram. Without knowing this, a viewer would find it very difficult to relate the data in the display to that of the histogram in any way besides shape.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Stem-and-leaf plots are like histograms but also show individual values
- Stems and leaves are made by separating the leading digit from the trailing.
- deciding whether or not to split values with different leaves but same stems is the maker's choice
- The plot satisfies the area principle as long as each digit takes up the same amount of space

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

5	1
5	7 7 7 8
3	5 5 6
3	1 4
2	2

(5 | 1 means 51 revolutions/min)

OR

5	1 7 7 7 8
3	1 4 5 5 6
2	2

(2 | 2 means 22 revolutions/min)

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 49-50 Section Description: Dotplots and Think Before You Draw...

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Dotplot - simple display. it places a dot along an axis for each case in data.
Quantitative Data Condition – the data values of a quantitative variable whose units are known.

2. In one or 2 sentences, what is the main idea of your section?

Dot plots are good for displaying small data sets and show basic facts about distribution. Before making a dot plot or other charts you must check the quantitative data condition confirms the type of data you have.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

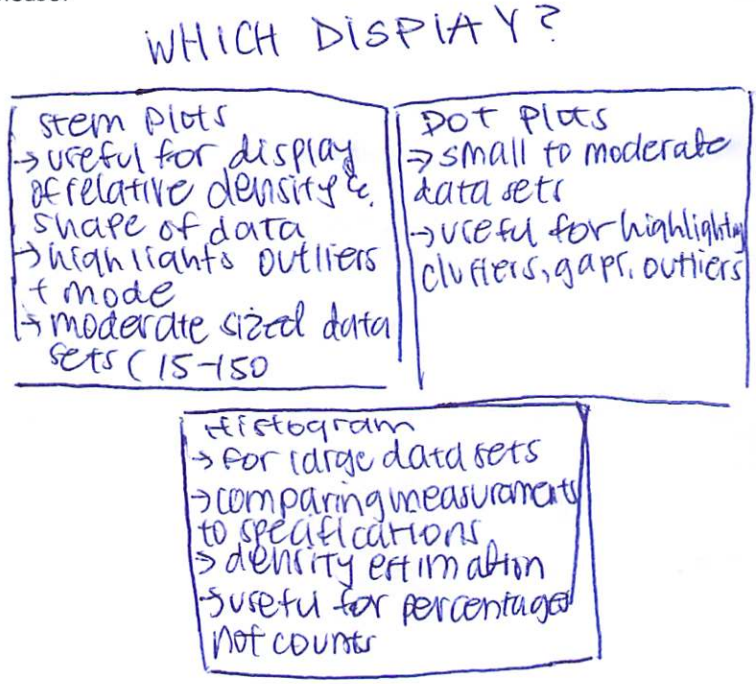
Individuals will most likely have trouble in determining the correct display for their data.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- A dot plot is a simple display
  - → places a dot along an axis for each case in data.
  - → similar to stem-&-leaf but with dots instead.
  - → great for small data sets.
- Dot plots show basic facts about distribution.
  - → Easy for finding the quickest and slowest races & it is clear there are 2 clusters (Fig. 4.4)
- some dot plots stretch horizontally or vertically
  - → some points overlap
  - → some are on top of each other
- check the quantitative data condition before making a histogram or dotplot.

→ Although a bar chart looks similar to a histogram, it is used to display categorical data in a histogram.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 50-53 Section Description: Shape Center and Spread

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

- Quantitative Data condition: the data are values of a quantitive variable whose units are unknown
- Gaps: self-explanatory
- Shape, center, and spread: 3 things used to describe distribution
- Modes: bumps on a graph (unimodal, bimodal, multimodal)
- Symetric: able to be folded on a vertical line
- Uniform: all equal (no modes)
- Outliers: stand away from main body

2. In one or 2 sentences, what is the main idea of your section?

The main ideal of my section was the characteristics of a histogram or bar graph; such as gaps, modes, and outliers.

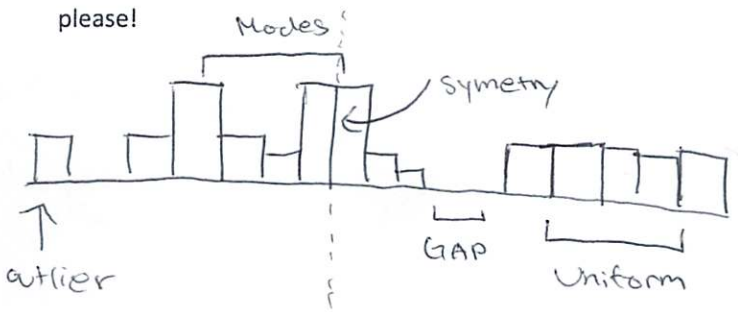
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Quantitive Data condition may be troublesome to some people since it is usually an imaginary thing.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Shape, center, and spread
  - ~~Shaped~~ modes (bumps)
  - Uniform (all the same)
  - Gaps
  - Symetry
  - Outliers (stray data)

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 53-55 Section Description: Displaying Quantitative Data Step-By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Plan: State what you want to find out
variables: Identify the variable and report the w's
Mechanics: make histograms with computer or graphing calculator
Conclusion: describe shape, center, and spread of the distribution

2. In one or 2 sentences, what is the main idea of your section?

The main Idea of the section is Displaying Quantitative Data

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

I think the mechanics will be most challenging because students often assume they know something and do not want to create histograms.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

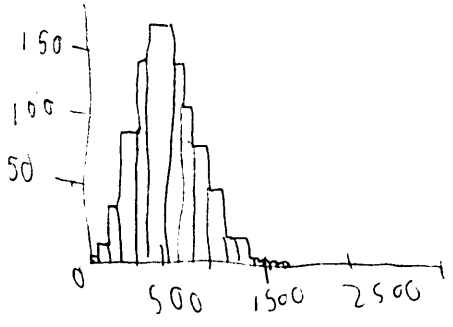
Think: Plan
variable

Show: Mechanics

Tell: Conclusion

- center of distributions generally gives the typical value

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



histogram

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 55-57 Section Description: Comparing Distributions ... Including Step-By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

themost interesting results about data involve making comparisons or modeling relationships. shapes of the graphs are different, therefore you know there is a change between the two. Quantative Data condition, when the rates are quantative, a stem & leaf display is appropriate.

2. In one or 2 sentences, what is the main idea of your section?

comparing different types and amounts of data, using graphs, how to define the graphs & histograms. Also the step by step process of evaluating data, in this case infant death rates.

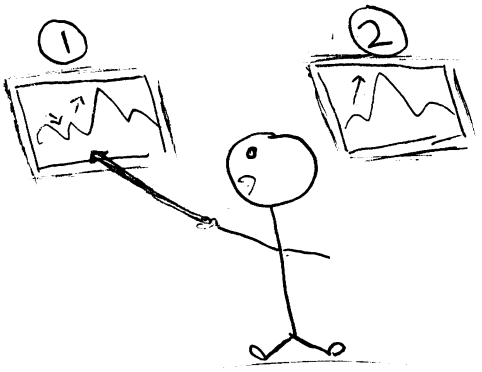
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

what to identify from the histograms after determing the differences between the two (shape, center, spread), because you have to know what to do after the identification step.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- asking q's about data.
- do men & women tend to get heart attacks at different ages?
- need ↑ a well suited question to investigate with a graph.
- use shape, center & spread to look at the histograms & their differences
- then create an assumption & data.
- less predictable to know when a man will get a heart attack than a women.
- comparing step by step
  - identify.
  - who, what, units, when, & where
- plan your method identify variable, label your mechanics, and conclude what you infer & include all key information to answer.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 55-57 Section Description: Comparing Distributions ... Including Step-By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:
distribution - the ~~branching of~~ range of objects studied
shape - the way a graph of data looks

2. In one or 2 sentences, what is the main idea of your section?
This section is mainly about this distribution and patterns of data.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?
A concept that some may have problems with is understanding centers because it may be hard to find the center

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.
- shapes of graphs are important
- center of graphs show distribution

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

Infant Death Rates, 2001

South & West				Northeast & Midwest
	5 6 7	10		
	4 8	9		
1 9 7 3 5 1 6		8	8 0	
3 6 2 3		7	2 7 7 5 4 1 4 4	
7 9 2 2 4		6	8 5 1 1 8	
8 8 9 9 4 4 9 7		5		
	8	4		
		3	0	
		2		
		1		

(3|8|1 means 3.8 deaths per 1000 live births)

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 57-59 Section Description: Timeplots: Order, Please!

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Timeplot: a graph of points that show data
Re-express: make the data more simpler
Transform: same as re-express

2. In one or 2 sentences, what is the main idea of your section?

This section shows how to get your data and put it into a timeplot and transform the skewed data.

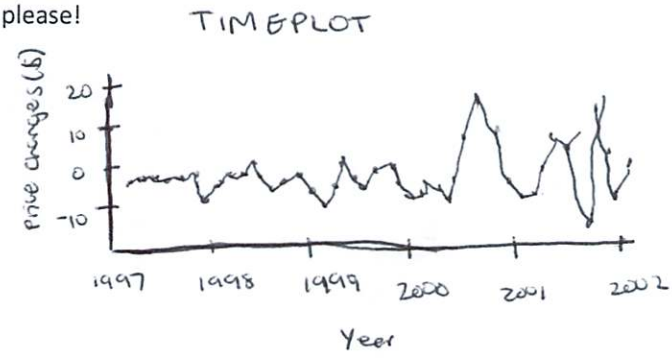
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

They could have problems with understanding some of the vocabulary used in this section, because theres some words I've never heard of.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- use a ~~[illegible]~~ timeplot to analyze data
- if data is skewed re-express or transform it.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 57-59 Section Description: Timeplots: Order, Please!

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

timeplot: a graph that plots times
re-express: regirgitate what was given
transform: develop

2. In one or 2 sentences, what is the main idea of your section?

In my section, the main ideas were to understand what skewed distribution is & how to balance out a graph. Also, there were tips about when & when not to use bar graphs

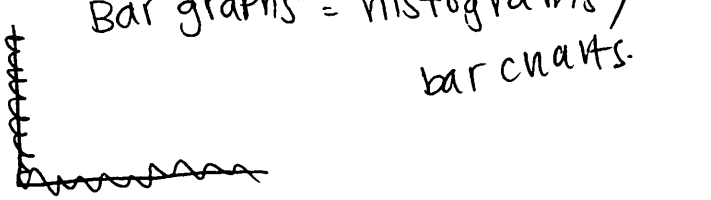
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

learning how to even out the graphs through logarithm & knowing when to use a bar graph

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- highlighted sentences
- when not to use bar graphs
- how to look at logs in an easier way

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 59-61 Section Description: What Can Go Wrong?

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

categorical variable - a variable that names categories and shows how cases fall into those categories

quantitative variable - a variable with units that records measurements or amounts of something

2. In one or 2 sentences, what is the main idea of your section?

There are a few common errors that cause a display of quantitative data to go wrong. There are also 3 rules to follow when making a data display.

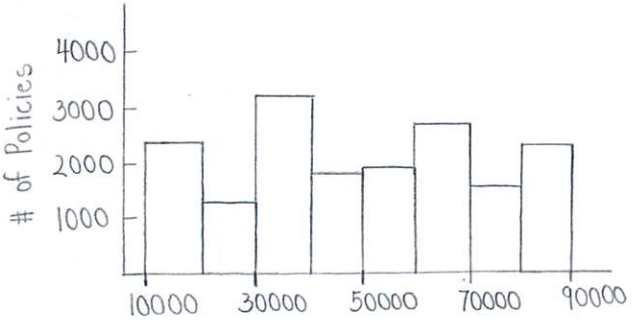
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Some individuals may have problems with the concept that histograms are not appropriate with categorical variables because it may be difficult to determine whether a variable containing numbers is categorical or quantitative.

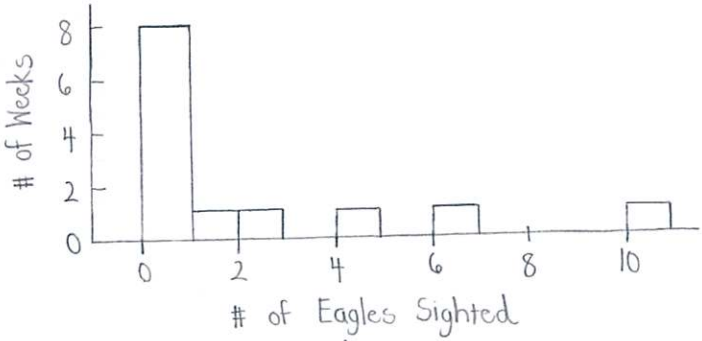
4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Histograms are for quantitative variables only
- Do not look for the shape, center, and spread of a bar chart
- Use bars only for histograms and bar charts, not for individual data values
- Choose a bin width appropriate to the data
- Avoid inconsistent scales
- Label variables and axes clearly

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



Categorical, not quantitative ✗



Shows distribution of data ✓

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 59-61 Section Description: What Can Go Wrong?

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

- categorical variable - topics/categories that aren't quantitative
- ~~Scales = bins~~ bin - the space of which contains a certain amount of information in the histogram

2. In one or 2 sentences, what is the main idea of your section?

The main idea of my ~~first~~ section is what not and what to do for a good histogram. ~~This is important so the information on the histogram is clear.~~

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

What people may have trouble with histograms is ~~presenting it~~ making it clear. This is difficult because there are many numbers and information that it may ~~be of~~ get confusing.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

Data display must be:

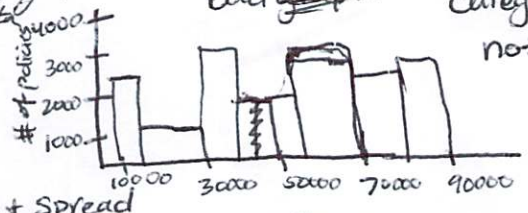
- clear in language/what variable is displayed/what any axis shows/values of the data

Histogram

Do's	Don'ts
• Choose a bin width appropriate to the data	• look for shape, center, & spread of a bar chart
• avoid inconsistent scales	• make a histogram of a categorical variable
• label clearly	• use bars in every display - save them for histograms & bar charts

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

bad ~~graph~~ histogram



Categorical variable not quantitative

good ~~graph~~ histogram

good distribution among the graph

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 62-64 Section Description: Entire Pages

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Histogram: A histogram uses adjacent bars to show the distribution of values in a quantitative variable.

Dot Plot: a dot plot graphs a dot for each case against a single axis

Spread: A numerical summary of how tightly the values are clustered around the "center"

2. In one or 2 sentences, what is the main idea of your section?

To compare the distributions of a quantitative variable for two different groups

To see trends in a quantitive variable of data that has been collected

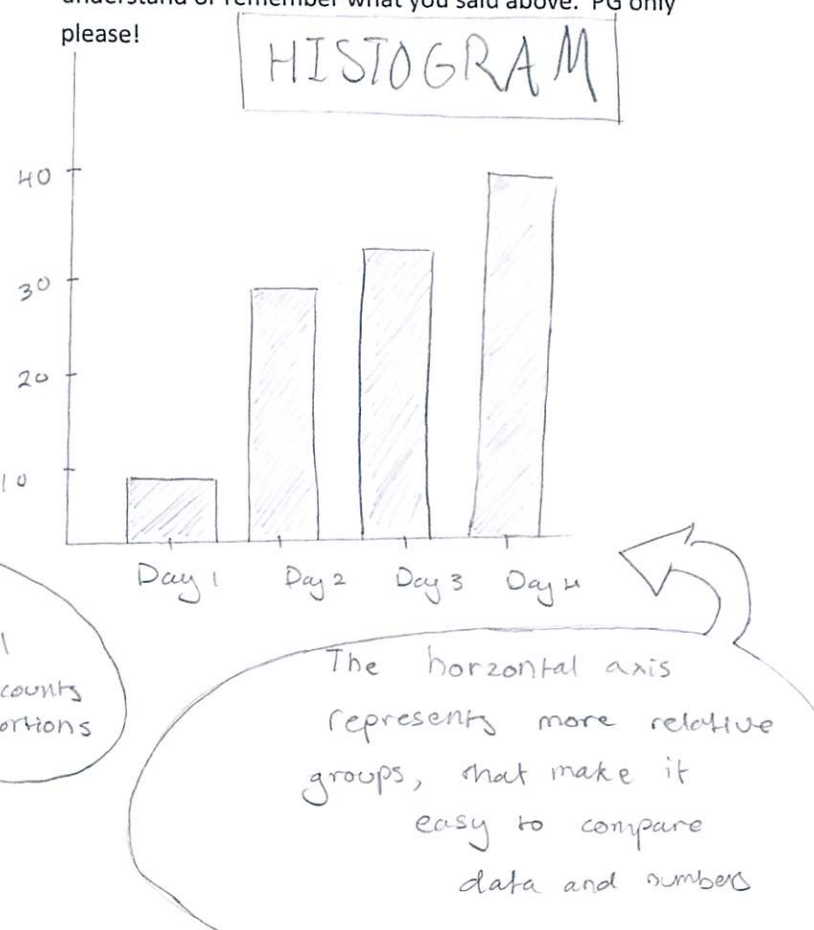
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Be able to guess the shape of the distribution of a variable without knowing something about the data

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- know how to compare distributions of groups by comparing shapes, centers and spreads
- Know how to describe patterns over time shown in a variety of graphs
- know how to observe data and be able to make conclusions based upon the results of comparison

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



Clear, concise, context

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 73-74 Section Description: Introduction and Finding the Center

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

center - middle (center of symmetry)
midrange - taking the average of the maximum and minimum values as a way of finding the center
median - the middle value that divides the histogram into two equal areas

2. In one or 2 sentences, what is the main idea of your section?

The main idea of my section is finding the center or the median.

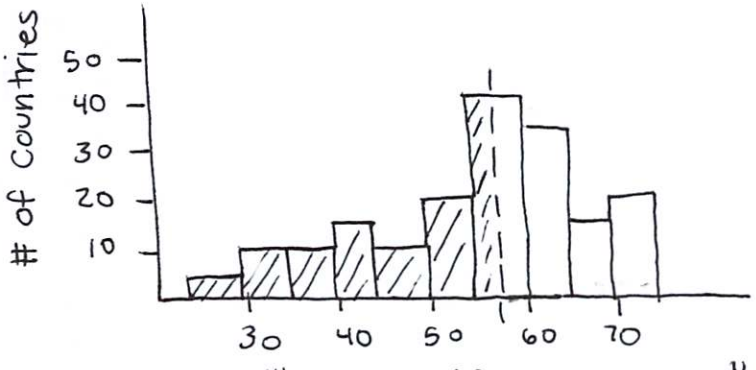
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Some individuals may have problems with the fact that the median may not accurately describe the data.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- to find median, take the total number, add 1, then divide by 2.
- center - middle
- midrange - average
- median - middle

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



- The median split the diagram into two halves

# of countries
$(191+1)/2 = 96^{th}$ place

57.7 years (median)

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 75-76 Section Description: Spread: Home on the Range and Interquartile Range

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

spread: the numerical distribution along the center
range: difference between max and min values
quartile 4 parts of data
lower & upper quartile: first & last quartile
interquartile range (IQR) middle data

2. In one or 2 sentences, what is the main idea of your section?

To find the range of a group of numbers you typically use the min & max numbers. But if they are extremes you must use quartiles and find the range through the median.

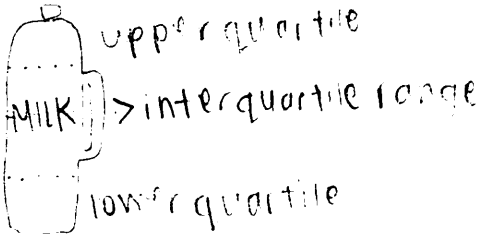
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

some people may have problems with finding the quartiles at first.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Range = max - min
- IQR = upper - inner quartiles
- percentiles - 25% & 75%

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 75-76 Section Description: Spread: Home on the Range and Interquartile Range

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

quartiles: range of the middle half of the data. Divide data in half at the median. Then divide both halves in half again, cutting data into four quarters
range: difference between max and min values
spread: how many data values vary around the center
interquartile range (IQR): Difference between the quartiles (how much territory the middle half of the data covers)

2. In one or 2 sentences, what is the main idea of your section?

Finding how spread out the data is from the median.

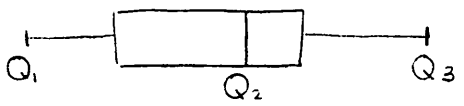
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Finding the quartiles because it is not always easy to find the exact location the lower quartile and the upper quartile.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- one quarter of the data is below the lower quartile
- one quarter of the data is above the upper quartile
- lower quartile: above 25%.
- upper quartile: above 75%.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



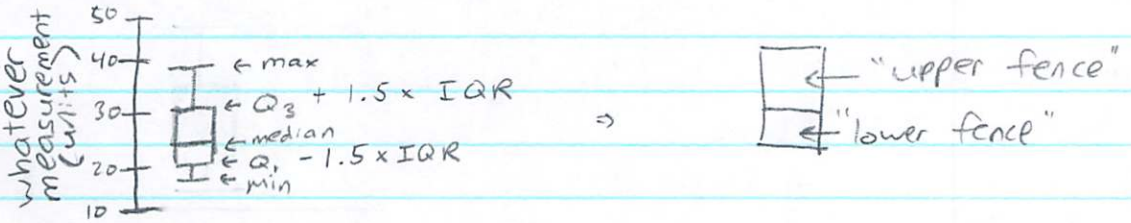
Pages 77 - 78 : 5-Number Summary and Rock Concert Deaths

Here we will be examining how the 5-number summary forms a boxplot

Terms:

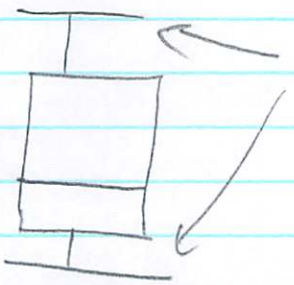
- 5-number summary - a set of data including 5 values: (in the following order)
  - Max
  - Q3 ⇒ Quartile 3
  - Median
  - Q1
  - Min

- with this "5-number summary" we can display the information in a boxplot.



[IQR = Q3 - Q1] (from previous section).

Inter-Quartile Range



Congratulations, you can now draw a box plot!

Notes: "Boxplots work well for comparing groups because they let the fundamental story show through when we place them side-by-side, we can easily see which group has the higher median, which has the greater IQR, where the central 50% of the data lies, and which has the greater range."

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 77-78 Section Description: 5-Number Summary and Rock Concert Deaths

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

5-number summary is a descriptive statistic that provides information about a set of observation. Boxplot is a convenient way of graphically depicting groups of numerical data through their five-number summaries.

2. In one or 2 sentences, what is the main idea of your section?

Making a boxplot from the 5-number summary.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

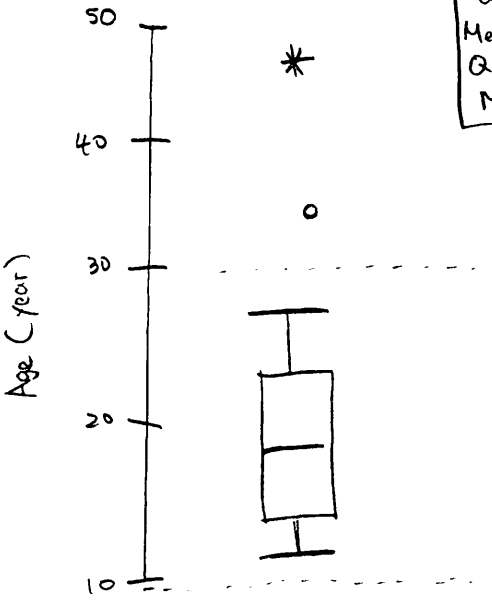
During the process of making a boxplot, we erect "fences" around the main part of the data.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- When ever we have a 5-number summary of a (quantitative) variable, we can display the information in a boxplot
- The 5-number summary of a distribution reports its median, quartiles, and extremes (maximum and minimum).
- Box plots work well for comparing groups because they let the fundamental story show through.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

Max	47 yr
Q3	22
Median	19
Q1	17
Min	13



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 78-79 Section Description: Comparing Groups with Boxplots and Step- By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

IQR - interquantile range: tells us how

Boxplot - used to distribute info

Histograms - to show a lot about the shape of the distribution

2. In one or 2 sentences, what is the main idea of your section?

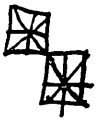
Determining how to use boxplots to compare groups

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

The idea behind IQRs is quite a tricky one.

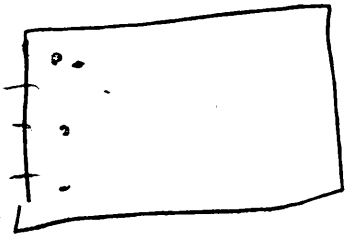
4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Groups are better with boxplots because because groups are easier to observe



- Histogram ~~similar~~ similarly to boxplots but are harder than bloxplots when associating with groups

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 78-79 Section Description: Gomparing Groups with Boxplots and Step- By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Quantitative data condition: The temperature changes are quantitative, with units of °F. Boxplots are appropriate displays for comparing groups. Numerical summaries of each group are appropriate as well

2. In one or 2 sentences, what is the main idea of your section?

Introduce boxplots, how to use boxplots to compare groups. it is easier to see the comparisions.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

For complicate data that is hard to compare and easy with graphical comparisons.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

1. Compare data with boxplots are easier to understand.
2. place them side by side. easily to compare

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

white board marker

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 80-82 Section Description: Summarizing Symmetric Distributions & Math Box & The Formula for Averaging

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

mean: the point at which the histogram would balance
to find mean – add up all numbers and divide by number of terms

2. In one or 2 sentences, what is the main idea of your section?

Once data is averaged, the result is the mean – which is appropiate only when the graph's shape is symmetric and there aren't any outliers. The formula for averaging is $\bar{y} = \frac{\text{Total}}{n} = \frac{\Sigma y}{n}$.

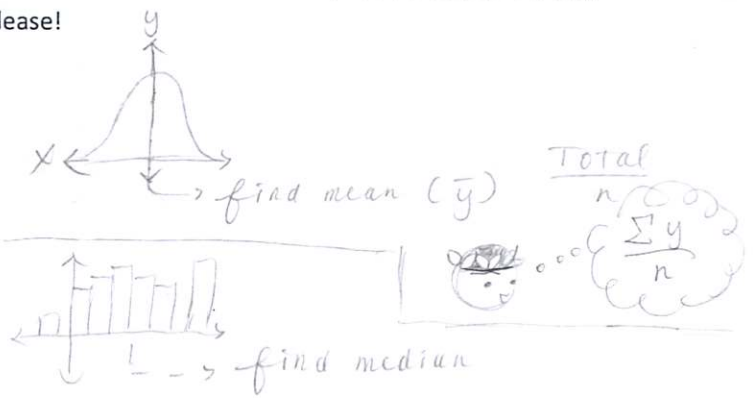
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

When the graph's shape of distribution is symmetric, the book states that there's no numerical reason to prefer the mean or median, but that only the mean is appropriate for this situation. This makes it kind of confusing to know when the mean or median is to be used.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- skewed shape: medians are effective at finding center of distribution
- symmetric shape: find mean – pt. at which histogram would balance
  - formula: $\bar{y} = \frac{\text{Total}}{n} = \frac{\Sigma y}{n}$

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 80-82 Section Description: Summarizing Symmetric Distributions & Math Box & The Formula for Averaging

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Median - center of the data in the sense that half the values are bigger and half smaller.

Mean - add up all the numbers and divide by n. (the point at which the histogram would balance)

2. In one or 2 sentences, what is the main idea of your section?

- Histogram shows a generally symmetric distribution, and the mean and median agree quite closely.
- $\bar{y} = \frac{\text{Total}}{n} = \frac{\Sigma y}{n}$

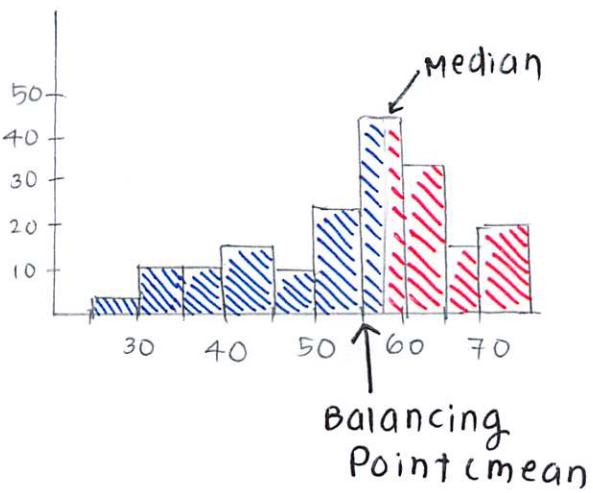
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

- whether the median or the mean is a better measure of center (because it depends on different situations) For example, median is better for a skewed data.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Medians locates the center of distribution even when the shape is skewed.
- When the shape of the distribution is symmetry there's no numerical reason to prefer the median or the mean.
- Mean is the point at which the histogram would balance.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 83-84 Section Description: What About Spread & Thinking About Variation

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

standard deviation - which takes into account how far each value is from the mean.; appropriate only for symmetric data.
variance - average (almost)
s^2 means variance ; s denotes the standard deviation
deviation - difference (average is always zero)

$$s^2 = \frac{\sum (y - \bar{y})^2}{n-1}$$

$$s = \sqrt{\frac{\sum (y - \bar{y})^2}{n-1}}$$

2. In one or 2 sentences, what is the main idea of your section?

The main idea is to find how far each value is from the mean. Spread is an important concept in statistics. Measures of spread tell how well other summaries describe the data.

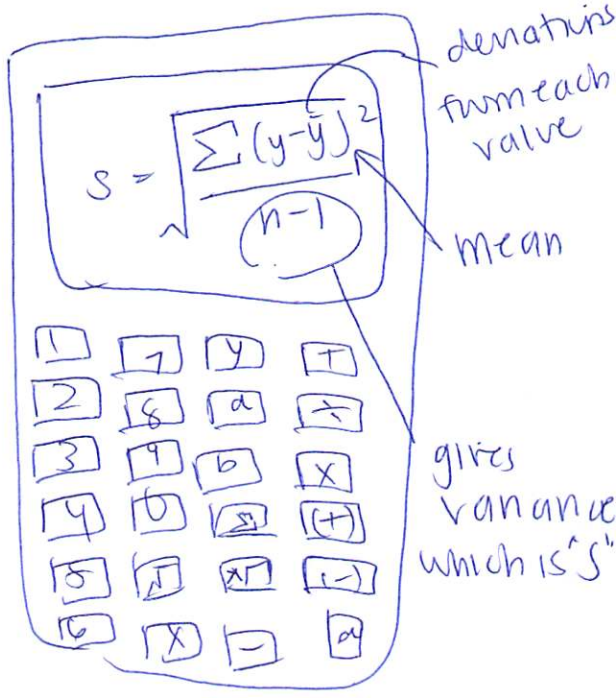
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

I think it would be hard to understand the formula and what each variable really means. Also it would be difficult if individuals didn't use calculators, but by hand.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- standard deviation is basically how far each value is from the mean
- variance is average
- deviation is difference
- cannot average deviation, it always goes to zero
- measures of spread help us to be precise about what we don't know
- far from center = large
  close to center = small

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 83-84 Section Description: What About Spread & Thinking About Variation

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Standard Deviation: takes into account how far each value is from the mean. The difference is called Deviation. Positive and Negative differences always cancel each other out.

Variance: result of the average of the squared deviations.

2. In one or 2 sentences, what is the main idea of your section?

The main idea of this section is to teach us how to find the variations.

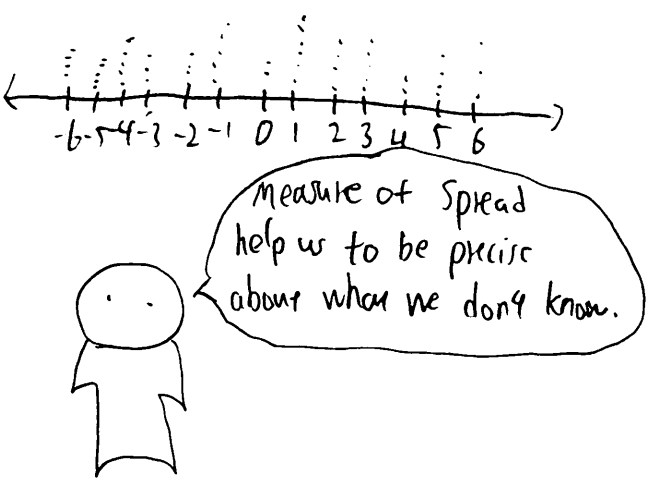
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Square the deviation to make to equation work.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Standard Deviation: how far each value is from the mean.
- Deviation: how far each data value is from the mean.
- Deviations will cancel each others if not squared.
- take the square root of the squared number.
- If the data values are far from center, IQR and standard deviation will be large.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 84-86 Section Description: Shape, Center, and Spread and Summarizing a Distribution Step-By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

measures of spread - helps us to be precise about what we don't know how well other summaries describe the data

statistics - spread and variation

2. In one or 2 sentences, what is the main idea of your section?

To describe a quantitative variable, report the shape of its distribution and include a center and spread

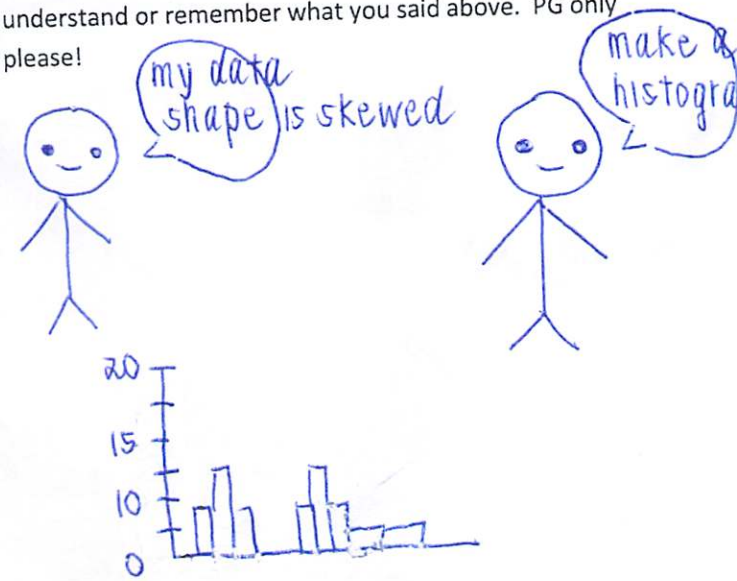
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

understanding the different measures of center and the measures of spread

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- shape skewed: report median and IQR
- shape symmetric: report mean and standard deviation
- median is paired with the IQR
- mean ~~is~~ is paired with standard deviation

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 84-86 Section Description: Shape, Center, and Spread and Summarizing a Distribution Step-By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Quantitative variable: variables measured on a numeric or quantitative scale. (ordinal, interval, ratio) (person's shoe size / car speed)
IQR: (Interquartile range); a measure of statistical dispersion
Histogram: graphical representation showing visuals of the distribution of data.

2. In one or 2 sentences, what is the main idea of your section?

One should report the shape of a quantitative variable's distribution and include a center and spread. Pair medians with the IQR and mean with standard Deviation.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

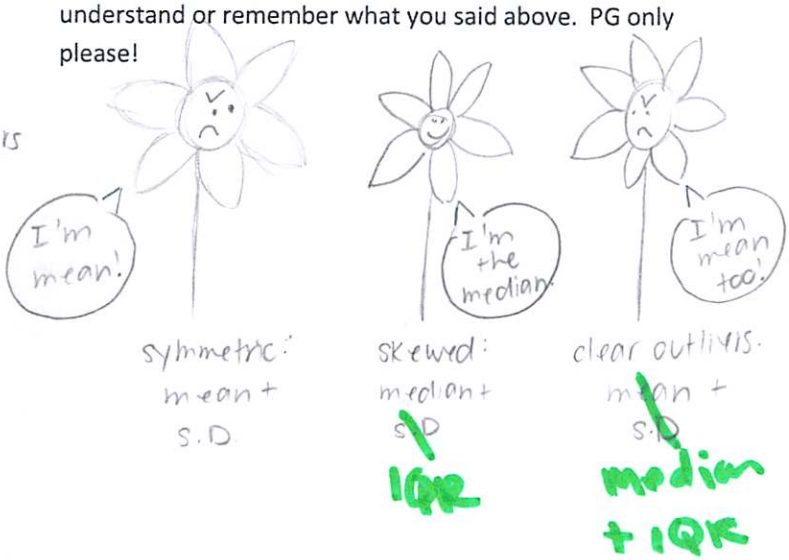
Some may have problems pairing the right data with the right shapes since there is no easy way to remembering them.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

Rules for reporting shape, center, and spread:

- skewed: median + IQR
- symmetric: mean + S.D.
- clear outliers: mean + S.D. w/ outliers

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 86-88 Section Description: What Can Go Wrong?

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

standard deviation – a measure of dispersion in a frequency distribution, same to the square root of the mean of the squares of the deviations.

histogram – a graph of a frequency distributions in which rectangles are given widths equal to corresponding frequencies

2. In one or 2 sentences, what is the main idea of your section?

The main idea of this section is that many things can go wrong in making graphs and statistics, and that you should always double-check the numbers you are inputting in your calculators.

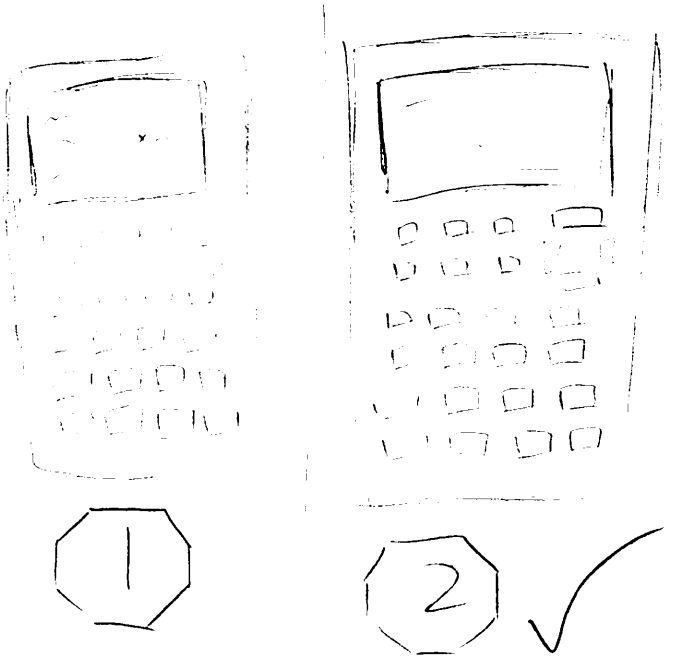
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

some concepts that some individuals might have problems with are with outliers, different modes of the calculator, and different spreads of the calculator because they could cause the students to misinterpret the graph or draw the graph wrong.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Think as you are going through the process
- sort out values of graph
- Be careful of different modes on the calculator
- draw pictures
- Be careful of graphs of different ranges and spread

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 86-88 Section Description: What Can Go Wrong?

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

arithmetic: branch of math dealing with the properties and manipulation of numbers

Probability: extent to which something is probable

2. In one or 2 sentences, what is the main idea of your section?

The main idea is to teach you how to use a calculator for statistics.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

I think some people would have trouble with "drawing a picture" because not everybody is artistic

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Don't forget to do a reality check
- watch for multiple modes
- be aware of outliers
- Make a picture

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 88-90 Section Description: Entire Pages

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

median: middle value w/ half the data above and half below it

spread: summarized by standard deviation, interquartile range and range

quartile: value with a quarter of the data below it; (Q1) upper quartile has a quarter (Q3) of the data above

range: diff between max and min

IQR: difference between Q3 and Q1

percentile: ith% percentile is the number that falls above i% of the data

2. In one or 2 sentences, what is the main idea of your section?

There are several ways to compare the data of different boxplots: use the median to compare centers, use range and IQR to compare how spread out each group is, and use standard deviation to compare how spread out the data is around the mean

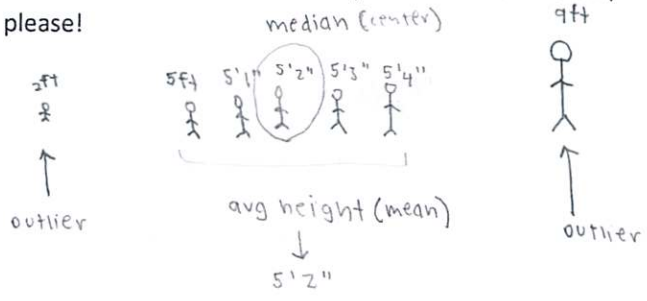
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

some will have problems with the interquartile range because most people are unfamiliar with that concept. Standard deviation and variance is also tricky in that it is tedious to calculate.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- mean and median are used to measure the center
- range, IQR, and standard deviation are used to measure the spread
- outliers will effect mean and standard deviation but not median and IQR
- boxplots are used to display the 5-Number summary as a central box w/ whiskers for non-outlying data values (good for comparing groups)

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



max = 9ft range = 9ft - 2ft

min = 2ft = 7ft

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 88-90 Section Description: Entire Pages

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Center: mean/median
Spread: Standard deviation, interquartile range, and range
5-# Summary: — min & max — median & over it
— quartiles
Quartile: lower quartile is value with quarter of data below it. Upper quartile has quarter data
Interquartile range (IQR): difference between First and third quartiles
percentile: ith percentile is # that falls above i% of data
Variance: sum of squared deviations from mean, divided by each minus one (sqr. root for standard deviation)
Boxplot: displays 5-number summary as box with whiskers extend to non outliers my data

2. In one or 2 sentences, what is the main idea of your section?

Dealing with components of 5-number summary and Boxplot,

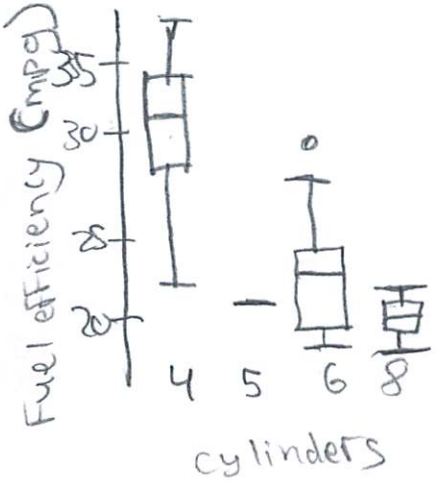
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

The concept of quartiles may be difficult because the books definition is confusing

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Standard deviation summarizes how spread out all the data are around mean
- median & IQR aren't effected by outliers whereas mean & standard deviation are

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 102-104 Section Description: The Standard Deviation as a Ruler and Standardizing with Z Scores

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

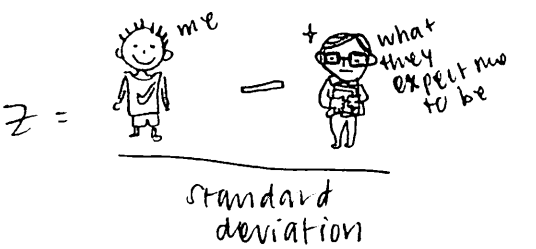
1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:
   standardized values: results from values that have been standardized with the mean and standard deviation.
   Standardized values are also known as z-scores.

2. In one or 2 sentences, what is the main idea of your section?
   standard deviation allows us to compare an individual value to other values with different units.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?
   people might get confused while operating with the formula.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.
   - use standard deviation to compare different-looking values
   - when comparing, results will be the distance and difference in standard deviation.
   - formula: $z = \frac{(y - \bar{y})}{s}$ ($\bar{y}$ ← mean; s ← standard deviation)

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 102-104 Section Description: The Standard Deviation as a Ruler and Standardizing wIth Z Scores

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:
Standardized values: the resulting values are denoted w/ letter "z". Called z-notes

2. In one or 2 sentences, what is the main idea of your section?
Introduce standard deviation to compare different things that are not related. z-scores take into account how far each result is from the event mean in standard deviation units.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?
the concept of comparing completely unrelated things.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- Standardize data to get a z-score
- 1st shift data by subtracting the mean
- then rescale the values by dividing by their standard deviation

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 104-106 Section Description: Shifting Data and Rescaling Data

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

5 number summary - consists of min. value, Q_1, Q_2, Q_3, and max value.
Boxplot / Box & whisker diagram - graphical data set consisting of a line from min value to max value, and a box drawn with Q_1, Q_2, Q_3.

2. In one or 2 sentences, what is the main idea of your section?

It's about boxplots, and how they are useful for revealing the center, spread, and distribution of data.

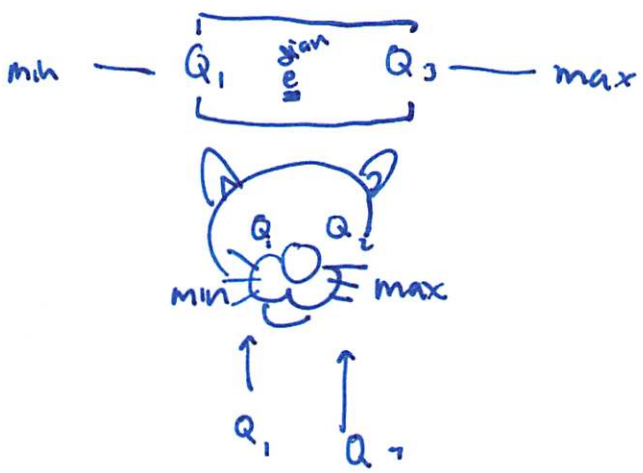
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

They may have problems with understanding 5-number summaries, or the overall concept of a box-and-whiskers graph.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- How to make a box plot
- find the 5-number summary (min. value, Q_1, median, Q_3, max value)
- construct a scale including min + max value
- construct a rectangle extending from Q_1 to Q_3
- draw lines extending outward from the box to the min + max data value

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 104-106 Section Description: Shifting Data and Rescaling Data

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:
   Standard deviation ~ a measure of dispersion in a frequency distribution, equal to the square root of the mean of squares of deviations from arithmetic mean of the distribution
   Rescale ~ to establish on a new scale

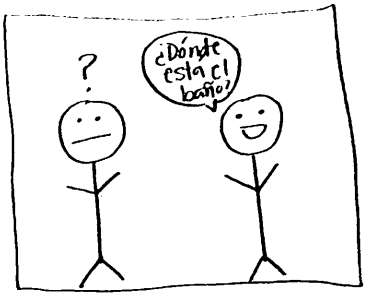
2. In one or 2 sentences, what is the main idea of your section?
   When adding or subtracting a constant to every data value, the same constant is added or subtracted to the measures of position. Sometimes, the scale of the data may be changed, like from kilograms to pounds.

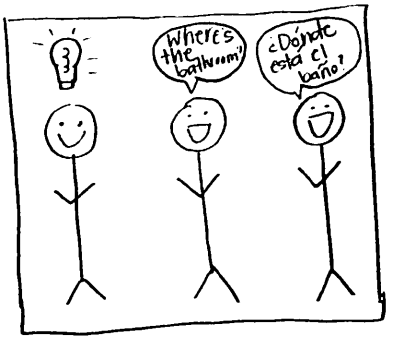
3. In one or 2 sentences, which concepts may some individuals have problems with and why?
   It may be confusing that although the measures of position are all increased or decreased by the same constant, the measures of spread do not.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.
   - Adding or subtracting a constant to every data value adds (or subtracts) the same constant to measures of position
   - However, the measures of spread unchanged
   - Data may be rescaled so that others can more easily understand it
   - For example, converting the weight from kilograms to pounds

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!

Rescaling data = translating a language





AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 106-107 Section Description: Back to Z-Scores and Working with Standardized Variables Step-By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Histogram – a diagram consisting of rectangles that show frequency and distribution of data.

z-score – measure the distance of each data value from the average in standard deviations.

2. In one or 2 sentences, what is the main idea of your section?

Standardizing data into z-scores only shifts the mean and rescales the standard deviation.

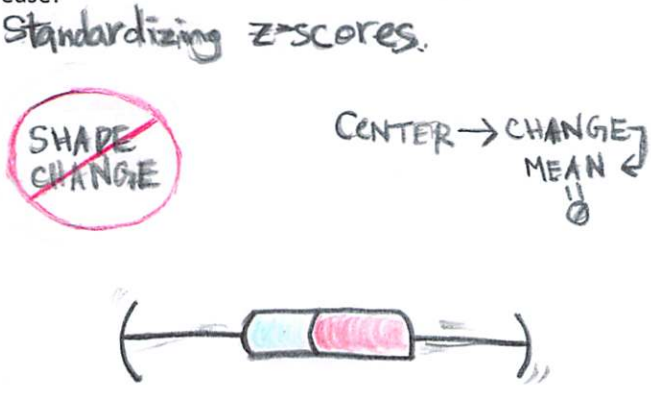
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Some people may have problems remembering the "aspects of a distribution".

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- multiplying or dividing the data values will also multiply the mean, median, percentiles, range, IQR, and standard deviation.
- z-scores have an average of zero and a standard deviation of 1.
- Standardizing z-scores does NOT change the shape of the distribution.
- It also changes the center by making the mean zero.
- the spread changes, making the standard deviation one.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 106-107 Section Description: Back to Z-Scores and Working with Standardized Variables Step-By-Step

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Shape: is not changed when z-score is standardized in the distribution of a variable.

Center: changes by making mean, 0.

spread: changes by making standard deviation 1.

2. In one or 2 sentences, what is the main idea of your section?

~~How to figure out at what pinpoint would~~ How to figure out a possible score using another score of a different test.

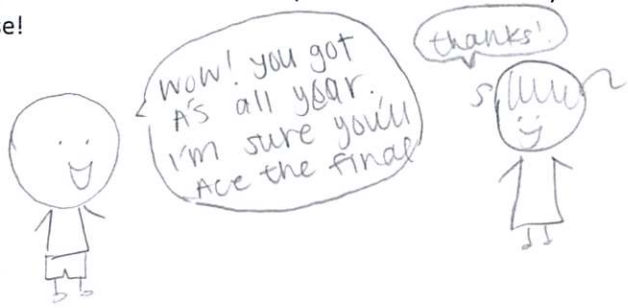
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

how seriously you can take this concept because one score cannot ensure a similar one for another thing.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- subtracting the mean of data from every data value, shifts the mean to 0.
- dividing from shifted values means doing the same for the standard deviation.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 107-109 Section Description: When is a Z-Score Big?

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Normal models = bell-shaped curves roughly symmetric.
parameters = numbers that help specify the model.
standard normal model = mean 0, stdrd deviation 1

2. In one or 2 sentences, what is the main idea of your section?

models can provide a visual understanding. Bell-shaped curves or normal models are for symmetric distributions.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

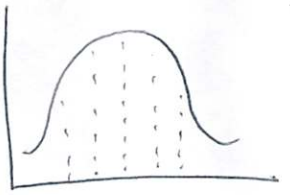
The larger the z-score, the further away it is from the mean. The further away, the more unusual.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- z-scores shows how unusual a value is
- models help show how big the zscore is.
- $N(\mu, \sigma)$ = normal model
  μ = mean, σ = stdrd dev.

$$z = \frac{y - \mu}{\sigma}$$

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: ~~180-109~~ 107-106 Section Description: When is a Z-Score Big?

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Normal models have unimodal and are roughly symmetrical in shape.
Parameters are numbers chosen to specify the model
statistics are summaries of data usually written in Latin.
The standard Normal model has mean 0 and a standard deviation 1.
When we assume the distribution of data is normal, we make a Normality Assumption

2. In one or 2 sentences, what is the main idea of your section?

The z-score is basically used to tell if data is normal or not.

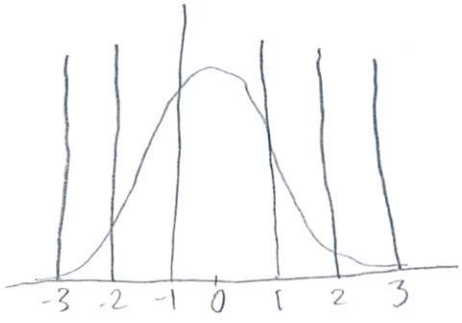
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

The fact that models will always be wrong in accordance to reality because people are used to finding correct choices.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- $N(\mu, \sigma)$ represents Normal Model
- μ is the mean
- σ is the standard deviation
- the models are used to learn about the real world
- a z-score of 3 (+ or −) or more is rare
- a z-score of 6 or 7 calls for attention

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 109-111 Section Description: The 68-95-99.7 Rule

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

Normality Assumption - The assumption to which distribution of data is normal.

Nearly-normal condition - shape of data's distribution is unimodal and symmetric.

68-95-99.7 rule - rule in which in normal data 68% of the data is within 1 standard deviation and 95% is in 2 standard deviations and 99.7% is in 3 standard deviations. (empirical Rule)

Normal percentiles - used to see what percent something is at when it does not fall exactly on a deviation.

2. In one or 2 sentences, what is the main idea of your section?

Explain the distribution of data on a nearly normal condition using the 68-95-99.7 rule and with normal percentiles.

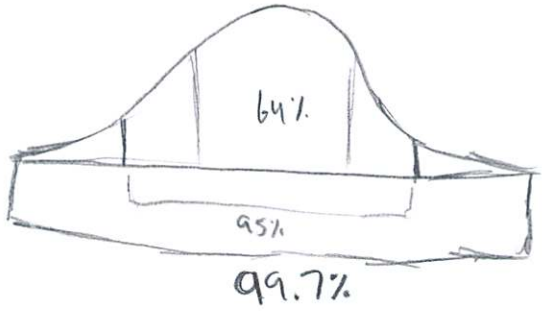
3. In one or 2 sentences, which concepts may some individuals have problems with and why?

Normal percentiles may be a little bit confusing at first, because of the way it is used.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- No way to check normality assumption
- 1 deviation 68%, 2 deviations 95%, 3 deviations 99.7%
- Always make a picture
- use z-score/normal percentile
- normal percentile = $\frac{\text{value} - \text{standard normal}}{\text{deviation}}$.

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!



AP Statistics: Describing and Displaying Data in One Variable – Summary Assignment

Pages: 109-111 Section Description: The 68-95-99.7 Rule

Read through the pages and section listed above. Read thoroughly and consider all shaded boxes and diagrams. Become the expert on your section. Feel free to explore the topic further on the internet or in your book if needed.

1. Define any words in bold. If there are no words in bold, pick 2 or three stats related words to define:

• 68-95-99.7 Rule- Based on the Normal Model. It can give corresponding values for any Z-score. Almost all of the values in a normal model fall within 3 standard deviations of the mean.

2. In one or 2 sentences, what is the main idea of your section?

About 68% of values fall within 1 standard deviation of the mean, 95% of values fall within 2 standard deviations of the mean, and 99.7% of values fall within 3 standard deviations of the mean. The 68-95-99.7 Rule is used with the Normal model to find answers.

3. In one or 2 sentences, which concepts may some individuals have problems with and why?

It might be difficult to realize when the Normal model can be used when working with the 68-95-99.7 rule, as it can vary depending on the problem.

4. Make a bullet point list or some other easy to read summary of the important concepts in your section.

- For a normal distribution almost all values are within 3 standard deviations of the mean.
- One must figure out what assumptions and conditions apply to the problem

5. They say a picture says 1000 words, draw a picture or diagram (or make up a comic) to help people better understand or remember what you said above. PG only please!