

Your summer work consists of three parts, recommended to complete in the order given.

1. "Getting to Know Your Textbook" Worksheet.
2. Chapter 1: The Practice of Statistics - Exploring Data
 - 1.1 Analyzing Categorical Data (see reading and problems attached)
 - 1.2 Displaying Quantitative Data (see reading and problems attached)
3. Locate two sets of quantitative data suitable for comparison in a newspaper, magazine, or on the Internet. Each set of data should have at least 25 individuals. An example of two sets of data to compare might be, enrollment in the largest 25 high schools (grades 9-12) in Maine and California. You will be sharing your data and results with your class.
 - A. You must come to your first statistics class with your data listed on a piece of paper with the source of data.
 - B. Using your data, create 2 dotplots, 2 stemplots, and 2 histograms. Please include a title and label the axis.
 - C. Compare the distribution of each set of data using your dotplots, stemplots, and histograms.

The assignments listed above are due the first day of class. You are expected to complete each part. You will be sharing your data from #3 above with the class on the first day. Do not save this work for the last minute. If you should have any questions over the summer, I will be checking my email periodically: coxbr@link75.org

A graphing calculator is a required tool for this class. The TI-83+, TI-84 Plus Silver Edition is recommended. If you do not have a calculator and do not see yourself purchasing one, you can sign one out (like a book). As you complete the problems in Chapter 1, notice the calculator help in the text of the book. If you have an Inspire, there is extra help in the back of the text.

Enjoy your summer!



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Getting to know your textbook

Used effectively, *The Practice of Statistics*, 5th edition can serve as an important resource for helping you master the key ideas and methods of statistics. This activity is designed to help you get familiar with what the book has to offer.

Directions: Try to find answers to all of these questions yourself. If you have exhausted your ideas on a question, ask another student in the class.

1. Which two of the authors are current high school AP[®] Statistics teachers? Where do they teach?

2. What is a FRAPPY?

3. Where in the book can you find the topic outline for AP[®] Statistics? _____

4. Are any answers provided in the book? If so, which ones?

5. On what page do you find the law of large numbers? _____

6. In what two places do you find the Learning Objectives for each section in the text?

7. Tell what each of the following icons means:



8. Go to the book's Web site (www.whfreeman.com/tps5e). Name something you find there that could be helpful to you during this course.

Read "To the Student" on p. ~~xxiii~~ ~~xxiv~~. Then answer the following question.

9. How much experience do the authors have in grading the AP[®] Statistics exam?

Read the Overview (p. ~~xxiii~~ ~~xxiv~~). Then answer the following question.

10. Which example was most interesting to you, and why?

Chapter 1

Exploring Data

Day	Topics	Learning Objectives: Students will be able to	Suggested Assignment
1	Introduction Data Analysis: Making Sense of Data 1.1 Analyzing Categorical Data Bar Graphs and Pie Charts Graphs: Good and Bad	Identify the individuals and variables in a set of data and classify them as categorical or quantitative. Display categorical data in a bar graph and decide if it would be appropriate to make a pie chart. Identify when some graphs of categorical data are deceptive.	Read p. 1-6 Do p. 6 #1,2,3,5,6 Read p. 7-11 Do p.20 #10,11,13,15,17
2	1.1 Two-Way Tables and Marginal Distributions Relationships between Categorical Variables: Conditional Distributions	Calculate and display the marginal and conditional distribution of a categorical variable from a two-way table. Describe the association between categorical variables by comparing appropriate conditional distributions.	Read p. 11-22 Do p.22 #19, 21, 23, 25, #27-32 all
3	1.2 Displaying Quantitative Data with Graphs Dotplots Describing Shape Comparing Distributions Stemplots and Histograms	Make and interpret dotplots, stemplots, and histograms of quantitative data. Describe the overall pattern (shape, center, and spread) of a distribution and identify the any major departures from the pattern (outliers). Identify the shape of a distribution from a graph as roughly symmetric or skewed. Compare distributions of quantitative data using dotplots, stemplots, and histograms.	Read p. 25-40 Do p.41 #37,39,41,44,46,47,50,51,53,57,59, 60,62,65,#69-74 all
4	1.3 Describing Quantitative Data with Numbers Measuring Center: Mean and Median Measuring Spread: Range, IQR, and Standard Deviation The Five-Number Summary and Boxplots Numerical Summaries with Technology Organizing a Statistics Problem	Calculate and compare measures of center (mean, median). Calculate and Interpret measures of spread (range, IQR, standard deviation). Identify outliers using the 1.5 X IQR rule. Make and interpret box plots of quantitative data. Choose the appropriate measure of center and spread in a given setting Use appropriate graphs and numerical summaries to compare distributions of quantitative data.	79, 81, 83, 87, 89, 91, 93, 95, 97, 99, 103, 105, 107-110 all
5	Chapter 1 Review FRAPPY!	FRAPPY!	Chapter 1 Review Exercises
6	Chapter 1 Test		

Summer work

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Chapter 1 Learning Objectives	Section	Related Example on Page(s)	Relevant Chapter Review Exercise(s)	Can I do this?
Identify the individuals and variables in a set of data.	Intro	3	R1.1	
Classify variables as categorical or quantitative.	Intro	3	R1.1	
Display categorical data with a bar graph. Decide whether it would be appropriate to make a pie chart.	1.1	9	R1.2, R1.3	
Identify what makes some graphs of categorical data deceptive.	1.1	10	R1.3	
Calculate and display the marginal distribution of a categorical variable from a two-way table.	1.1	13	R1.4	
Calculate and display the conditional distribution of a categorical variable for a particular value of the other categorical variable in a two-way table.	1.1	15	R1.4	
Describe the association between two categorical variables by comparing appropriate conditional distributions.	1.1	17	R1.5	
Make and interpret dotplots and stemplots of quantitative data.	1.2	Dotplots: 25 Stemplots: 31	R1.6	
Describe the overall pattern (shape, center, and spread) of a distribution and identify any major departures from the pattern (outliers).	1.2	Dotplots: 26	R1.6, R1.9	
Identify the shape of a distribution from a graph as roughly symmetric or skewed.	1.2	28	R1.6, R1.7, R1.8, R1.9	
Make and interpret histograms of quantitative data.	1.2	33	R1.7, R1.8	
Compare distributions of quantitative data using dotplots, stemplots, or histograms.	1.2	30	R1.8, R1.10	
Calculate measures of center (mean, median).	1.3	Mean: 49 Median: 52	R1.6	
Calculate and interpret measures of spread (range, IQR, standard deviation).	1.3	IQR: 55 Std. dev: 60	R1.9	
Choose the most appropriate measure of center and spread in a given setting.	1.3	65	R1.7	
Identify outliers using the $1.5 \times IQR$ rule.	1.3	56	R1.6, R1.7, R1.9	
Make and interpret boxplots of quantitative data.	1.3	57	R1.7	
Use appropriate graphs and numerical summaries to compare distributions of quantitative variables.	1.3	65	R1.8, R1.10	

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Chapter 1 Terms:	
Individuals	
Variable	
Categorical Variable	
Quantitative Variable	
Distribution	
Inference	
Frequency Table	
Relative Frequency Table	
Pie Chart	
Bar Graph	
Two-Way Table	
Marginal Distribution	

Conditional Distribution	
Association	
Dot Plot	
Stemplot	
Shape	
Center	
Spread	
Outliers	
Symmetric	
Skewed to the Right	
Skewed to the Left	
Unimodal	

Bimodal	
Stemplot	
Histogram	
Mean	
Median	
Range	
Quartiles & Interquartile Range (IQR)	
Five-Number Summary	
Boxplot	
Standard Deviation	
Variance	
1.5 X IQR Rule	

↑ 1.2
↓ 1.3

↑ 1.2
↓ 1.3