

Reading Guide #1,2,3(1,2),4

Name Key

Statistics: Chapter 2 Reading Guide

1. Why is Table 2.1 (Titanic passenger data) difficult to make sense of?

Because it is not organized. It is just a list of data.

2. Why is the (distorted) graphic of the United States in Figure 2.1 actually a better representation of the context of the data presented?

Because the re-sized states are more proportional to their population.

3. Complete the "Just Checking" problems as you come to them and after each set, check your answer in the back of the chapter. Show corrections with a different colored pen so you can see what you need to work on.

Just Checking (with corrections)


1. Blue = $\frac{4}{32} = 12.5\%$ Brown = $\frac{14}{32} = 50\%$ G/H/O = $\frac{12}{32} = 37.5\%$

2. In this stats course 16 females have brown eyes.

4. What kinds of comparisons are easier and what kinds of comparisons are harder when data is presented with a pie chart?

Pie charts are good for looking at parts of a whole.
- It's easy to see what portion of the whole a category represents, but harder to see how the categories relate to each other.

Video - Two Way Tables

 <http://www.learner.org/courses/againstallodds/unitpages/unit13.html>

THE VIDEO

Take out a piece of paper and be ready to write down answers to these questions as you watch the video.

1. Give two (or more) examples of categorical variables.

gender, eye color, occupation, happiness,
race

2. What did Somerville include in its 2011 census that was unconventional?

Happiness

3. In the two-way table used to organize the responses to rating personal happiness and Somerville's physical beauty, which variable was the row variable and which was the column variable? Explain.

R: Happiness level (across)
C: Physical beauty (up/down)

4. As the level of happiness went up (from Unhappy to So-so to Happy), what happened to the percent of respondents who rated Somerville's physical beauty as Bad?

as happiness level ↑, physical beauty
rating ↑. # Reported as bad ↓
* There is a link (correlation) between
happiness and beauty rating.

Percent Practice Part II

Name _____ *Statistics: Chapter 2 Percent Practice Part II*

Using Mental Math to Estimate and Verify Percent Calculations: Part II

When analyzing data, it is very common to compute percents from ratios of counts of categorical data. Let's suppose you count that out of 24 students in your class, 15 are wearing jeans. As a ratio, this can be expressed as the fraction, $\frac{15}{24}$. To convert this to a percent, you can divide the numerator by the denominator ($15 \div 24 = 0.625$) and then multiply this answer by 100 since percents are expressed out of 100. $\left(\frac{0.625}{1} \times \frac{100}{100} = \frac{62.5}{100} = 62.5\% \right)$. Again, use your knowledge of percent benchmarks to check your answer: 62.5% is a bit larger than half and 15 is a bit larger than half of 24, so 62.5% seems like a reasonable answer.

Class exercise

Look around your classroom and count the number of students wearing sneakers or jeans. Collect the data in the table below and then answer the questions in the chart. Before we start: What are the “W’s” of our little study?

who = students in class where = here
what = sneakers/not, Jeans/not when = now
how = observation
why = create data

	Wearing Jeans	Not Wearing Jeans	Total
Wearing Sneakers	4	5 4	8
Not Wearing Sneakers	2	4	6
Total	6	8	14

Question	As a fraction	Estimate the percent (THINK! Close to 10%? 50%? etc)	Calculate the percent using a calculator
1. What ratio of the entire class is wearing jeans?	$\frac{6}{14}$	45%	43%
2. What ratio of <u>those wearing jeans</u> are not wearing sneakers?	$\frac{2}{6}$	33%	33%
3. What ratio of <u>those not wearing sneakers</u> are wearing jeans?	$\frac{2}{6}$	33%	33%
4. What ratio of <u>the class</u> are wearing jeans and sneakers?	$\frac{4}{14}$	30%	29%

5. Does there appear to be an association between wearing jeans and wearing sneakers? Explain.

Yes- People who are wearing jeans are more likely to be wearing sneakers ($\frac{4}{6} = 67\%$) than not wearing sneakers ($\frac{2}{6} = 33\%$)

Homework:

1. Read Pg. 21-25
2. Complete Reading Guide #3 (3-11), 5

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Pg. 22-25
Just checking
Questions

