

Names: _____

MATH 232 · Introduction to Statistics

Spring 2017

Instructor: E.M. Kiley

Week 1: Cartoon Guide Questions

Please read pages 1–13, and answer the following questions together with your group mates. Please submit only one answer sheet per group, and clearly indicate the names of all group members at the top.

Question 1. Refer to the boxed drawing at the bottom of page 2, where the statistician says to his date, “I’m 95% confident that tonight’s soup has probability between 73% and 77% of being really delicious!” According to this statistician, what is the probability (or the range of probabilities) that tonight’s soup is **not** really delicious, and what is the statistician’s confidence in his prediction?

Question 2. Referring to the previous question, what is the difference between your answer to that, and an answer to the question, “What is the probability that tonight’s soup is really terrible?”

Question 3. Discuss the scene at the bottom of page 3, which tells the story of the polio vaccine. If you were asked to design a clinical trial and statistical method to evaluate the effectiveness of a vaccine, how would you do that?

Question 4. How are data analysis, probability, and statistical inference related? You might want to refer to page 4.

Question 5. How many total dots are shown on the dot plot on page 9?

Question 6. Why might someone want to draw a dot plot before constructing a frequency table or a histogram? [Hint: You have a choice where to put the interval boundaries. See page 10.]

Question 7. The story of Florence Nightingale on page 13 reveals how a responsible, thoughtful statistician can make innovations in presenting data. What was Nightingale's goal in creating her chart? (Charts of this style are known as "polar area diagrams" or "circular histograms," and are nowadays common techniques of presenting data.) What do you think makes this presentation more striking than a flat histogram would be?