**Lab for Sections 13.1 and 13.2** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Use good notation and show appropriate work. State your solutions to problems in complete sentences.*

1. In order to determine how American college students feel about a proposed national law that would tax monies received from grants and scholarships, a survey was conducted. Four hundred undergraduate students at Minnesota State University Moorhead were interviewed. Each of the four interviewers hired to conduct the survey was told to interview 25 freshman, 25 sophomores, 25 juniors and 25 seniors. Of the 400 students interviewed, 10% were in favor of the tax, 85% were opposed and 5% had no opinion.

(a) What is the population for this survey? (b) What is the sample for this survey?

(c) Is the 10% of the students in favor of the tax a parameter, a statistical value, or neither?

(d) Based on these results, how many of Concordia’s 2000 students would favor the tax?

Would you expect this number to be more or less than the actual number? Explain.

(e) What, if any, bias does this survey have? Explain.

2. Deceptive and Misleading Graphs.  
(i) What is misleading about the following charts and graphs? If the graph misrepresents the intended

information, explain why and state how the graph should be constructed to improve its clarity. Try to

identify more than one weakness for each graph. Each graph may have several aspects that are poor– missing labels, viewpoints, lacking information, presentation, etc.

(ii) Also, consider whether each graph satisfies the various advantages of graphs and avoids the

disadvantages. For example, identify the main feature/s the author of the graph is attempting to

emphasize. What information or idea does the author want you to obtain?

(a) What is the problem with the following graph?

(b) What is different and what is the same with these two graphs?

Is Math City's payroll down, stable, or up? Explain.  
  
  
  
 Which graph is the better representation? Explain.

(c) What is misleading about the graph?

(d) What is misleading about the graph?

