

Social Studies 201**Fall 2003****Answers to Problem Set No. 1****September 20, 2003**

1. **Question.** Attached is a photocopy of the article “Many students at debts door,” written by Anne Kyle and published in the Regina *Leader-Post*, August 13, 2003, p. B1. In the article, various spokespersons make claims about student and University of Regina finances. In a paragraph or two, comment on the claims using concepts concerning data production in sections 2.3 through 2.6 of Chapter 2 of the text. In terms of the type of data that might shed light on the claims, you may also wish to refer to questions in the *Survey of Student Attitudes and Experiences Fall 1998*.

Answer. Possible comments and questions about claims made and about data production.

- In any discussion of student debt, it is always useful to know how many students have such debt and what the distribution of level of student debt is. In spite of the title of the article and the claims made in the first paragraph, no data is provided on this issue. To see whether or not students are really at debt’s door, it would be worthwhile knowing more about responses to questions such as questions 48 and 49 of the survey questionnaire.
- In the second and third paragraphs, Phoebe De Ciman (it seems that the L-P reporter does not have the correct spelling of the name of the Students’ Union president), raises the issue of accessibility. To address this, information about the other options students have, the amount of foregone income from jobs as a result of attending University, the total cost of attending University, etc. should be examined. Information about the reasons why students do not attend University would be especially useful here. If the main reason is cost, then accessibility is a problem. If the reason is grades, desire to pursue other programs, readiness to take a job rather than attend university, etc. are the main reason, then high tuition may not have much effect on accessibility.

- At the top of the second column, the reporter says “the biggest ever increase” but then says “in four years.” It might have been better to simply say “the biggest increase in four years.”
- In the same column, the “average” increases are cited. While we will not discuss this until chapter 5, one question is which “average” this is. It may be the mode rather than the mean – calculating the mean would be difficult without knowing the number of classes students will be taking. A related issue is that the distribution of the amount of increase may differ somewhat for students who are part-time and those who are full-time. The same questions could be raised about the figures in the other paragraphs in the second column.
- The claim that more students will need to take part-time jobs is one that could be verified by studying the work activity of students. This was one part of the survey questionnaire – questions 52-57. As a result of the increase in tuition fees, some students may work more at jobs, although perhaps the jobs will not be available. This is another question that could be raised about these claims.
- Turning to the claims about the University budget, a fuller analysis would provide details about the different budget expenditures. One problem for a reporter, or others concerned with University finances, is that budgets are the property of the Board and administration of the University, so detailed budget data are not available to others. The claim that there is more money for student services and scholarships would need to be examined in more detail by obtaining access to the budget. Those interested in examining these issues might request that the University administration provide data on the amount of increase in the various portions of the budget. A request of the University administration that the University budget be a public document, as is the budget of the provincial government, would seem appropriate.
- The claims by Barb Pollock appear slanted to favour the government, but then there are complaints about other costs. If the allocation from the government is, in fact, “very generous” then one would expect it to cover necessary costs. But Pollock’s claim

is that it does not. While the University may not have control over some of these costs, one question is whether they have some control or not. In the case of employee wages and salaries, these are the result of a collective bargaining process, so presumably the University has agreed to pay the agreed upon wages and salaries.

- Pollock also comments on what a quality education means. While not all issues related to quality education can be addressed in such a short quote, one question a researcher would want addressed is costs associated with producing quality education. In addition, the definition and meaning of a quality education is an important issue to address.
 - Information about trends in federal and provincial government funding would be useful to obtain in order to address the issue of federal government funding.
2. **Question.** Use the questionnaire of the *Survey of Student Attitudes and Experiences Fall 1998* for this question. For each of questions 34, 45 (first of the four blanks), 46, 51 (first question on studying, etc.), and 55 in the questionnaire, (i) clearly identify or name the variable in the question. (ii) For each variable state the highest level of measurement the variable has (nominal, ordinal, interval, ratio) and, in a sentence, explain your reasoning. (iii) For each variable, also explain whether the variable is discrete or continuous.

Answer.

- **Question 34.** The variable could be termed **evaluation of changes in immigration**. This is measured at the **ordinal** level but not at the interval level, since views or opinions are ranked from very negative to very positive, but the distance or interval between each category is not well defined. Respondents' evaluations probably vary continuously, although for purposes of the survey, these views or opinions are organized into a discrete set of categories (1 through 5). The "Uncertain" response of category 6 deviates from the ordinal ranking of responses, so for purposes of analyzing these responses, the uncertain responses would likely be declared missing cases by the researcher – the five remaining categories are then ordinal.

- **Question 45.** The variable here is **good grade in the major**. Grades are ordinarily considered to be measured on at least an **interval** scale, with a well defined unit of a percentage point, and equal numerical differences between grades representing equal magnitudes of grades. Since a grade of 0 really means 0, grades may also be considered to be measured at the **ratio** level, so that meaningful ratios of grades can be determined. Grades may be considered to be measured on a **continuous** scale, although they are usually rounded to the nearest integer.
 - **Question 46.** Here the variable is **academic experience**. This variable is measured at no more than the **nominal** scale, since these are different categories but have no clear criteria for ranking or ordering the responses. This is a **discrete** variable, because there are only four possible responses, so the number of possible sources can be counted.
 - **Question 51.** The variable is **weekly hours spent studying, doing research, and class assignments**. Since this is a measure in hours of time, this variable has an **interval** and **ratio** scale. The difference between study hours is meaningful since the unit of a hour is a well-defined measure. Zero hours spent studying means no time at all is spent on this, so the zero point is not arbitrary. The variable is **continuous** since it is measured in hours of time, and time changes continuously, not in discrete jumps.
 - **Question 55.** The variable could be termed **other sources of funds** and it is measured at no more than the **nominal** level. That is, the categories of possible alternative sources of funds are just different categories – it is not clear that they could be ordered as greater than or less than on some criterion. This variable is **discrete** since there are only a countable number of possible sources, in this case only five (or six if others sources are volunteered) possible sources are listed.
3. **Question.** The data in Table ?? represent the ages, in years, of seventy-one respondents in a sample of Regina adults who are immigrants to Canada. The data come from a study, “Factors Related to the Economic Integration of Immigrant Households in Canadian Soci-

ety,” conducted by members of the Department of Sociology and Social Studies, beginning in 1998. Present an (i) unordered and (ii) ordered stem and leaf display. From these construct (iii) a table showing the frequency distribution of age and (iv) a histogram of the distribution of age. (v) In words, briefly describe the distribution of age.

Answer. The unordered and ordered stem and leaf displays are in Tables 2 and 3, the frequency distribution table in Table 4, and the histogram in Figure 1. When preparing the unordered stem and leaf display from the data in Table 1, I proceeded down the first column, then down the second column, and so on. If you proceeded by rows, then the unordered stem and leaf display will be different, but the ordered stem and leaf display should be the same as in Table 3.

The frequency distribution table of ages shows that 30-39 and 40-49 hours worked are the most common categories, with close to one-third of the 71 respondents in each of these two intervals. There were relatively few respondents with more than 50 hours worked per week and most of these worked less than 60 hours per week. Only two of the 71 respondents worked sixty or more hours. About one-fifth of respondents worked less than thirty hours, with almost all of these working between 20 and 29 hours. This is a typical distribution of hours worked, with the greatest number working 30-50 hours and relatively few working less than 30 hours or more than 50 hours per week.

Table 1: Ages of seventy-one respondents

25	42	33	49	45	37
55	49	50	44	42	43
39	72	33	36	49	40
21	21	38	32	47	31
42	51	38	29	42	43
21	18	49	26	27	55
45	48	41	44	33	29
35	25	39	43	54	63
44	37	31	41	43	22
36	36	22	30	36	31
29	26	35	25	36	37
42	51	28	52	43	

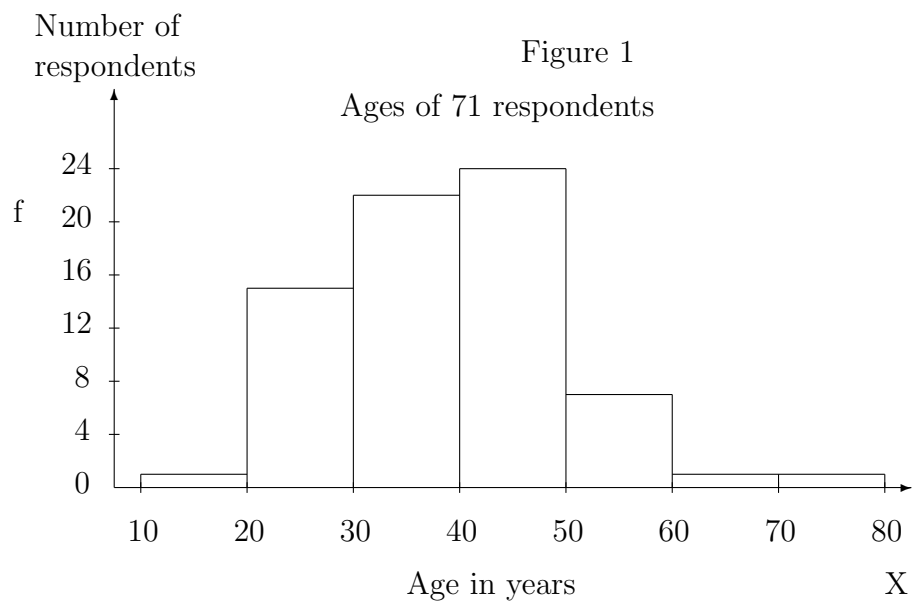


Table 2: Unordered Stem and Leaf Display

1	8
2	5 1 1 9 1 5 6 2 8 9 6 5 7 9 2
3	9 5 6 7 6 3 3 8 8 9 1 5 6 2 0 3 6 6 7 1 1 7
4	2 5 4 2 2 9 8 9 1 9 4 4 3 1 5 2 9 7 2 3 3 3 0 3
5	5 1 1 0 2 4 5
6	3
7	2

[illegible]

Age of respondent	Real Class Limits	f
10-19	9.5-19.5	1
20-29	19.5-29.5	15
30-39	29.5-39.5	22
40-49	39.5-49.5	24
50-59	49.5-59.5	7
60-69	59.5-69.5	1
70-79	69.5-79.5	1
Total		71