

Social Studies 201

Winter 2004

First Midterm Examination

10:30-11:20, February 4, 2004

Answer any three (3) of the six questions. Each question has equal value.

1. Record-setting cold. The *Leader-Post* of January 29, 2004 (p. A1) reported record-setting cold for many parts of the province. The temperatures reported for seven locations are in Table 1 – in order to avoid dealing with negative values, all temperatures are in degrees below zero Celsius. Use these data to compute the range, mean, and standard deviation for the (a) new record temperature, and (b) old record temperature. Also, for each of (a) and (b), which location has the median temperature?

2. Health status and income level. Table 2 provides percentage distributions of self-reported health status of Saskatchewan respondents, classified by household income. For respondents in the lowest income group (less than \$20,000), obtain the mode, median, and interquartile range of health status. Obtain the same statistics for those in the highest income group (\$60,000 plus). In words, briefly compare these two distributions.

3. Smoking and other vices. The Social Studies 306 survey from the Fall 2003 semester at the University of Regina provides the data in Table 3. Using these data:

- a. Obtain the mean for each “vice” (ie. mean rate of smoking and mean rate of drinking).
- b. For each “vice,” explain which category contains the median? (You need not interpolate – identify category and briefly explain why it is there).
- c. Briefly describe the two distributions in words.

4. Types of variables. Explain what is the highest level of scale each of the following variables has (nominal, ordinal, interval, or ratio). Also explain whether each is continuous or discrete.

- a. Location (Table 1).
- b. Health status (Table 2).
- c. Household income (Table 2).
- d. Rate of smoking per month (Table 3).

Questions 5 and 6 use data from the following article:

“Couples living apart” by Anne Milan and Alice Peters, in the Statistics Canada publication, *Canadian Social Trends*, Summer 2003, pp. 2-6. Couples living apart are defined as “unmarried couples living in separate residences while maintaining an intimate relationship” (p. 2). In the article, the authors refer to these relationships as LAT – living apart together.

5. Histograms of living apart by income level. Use the histograms of Figures 1 and 2 to obtain estimates of the mean and median income for each of men and women in living apart relationships. Use these statistics and the histograms to write a note comparing the two distributions.

6. Statistics implied by quotes. For each of the following three quotes, explain what measures of central tendency or variation are either implied by the quote or would be useful in describing the information in the quote.

- a. “Individuals are postponing union formation until later than did earlier generations.” (p. 3).
- b. “Traditionally, marriage was the only acceptable social institution for couples.” (p. 2).
- c. “Adults entering their middle years and beyond in the early decades of the 21st century will have experienced a greater diversity of relationship and marital experiences over their lifetimes than did earlier generations.” (p. 3).

Table 1. Temperatures in degrees below zero Celsius, selected Saskatchewan locations

Location	New record	Old record
Regina	41.6	38.9
Saskatoon	44.9	43.3
Estevan	41.3	37.2
Weyburn	40.9	37.8
Elbow	38.6	37.8
Watrous	43.3	42.2
Rosetown	42.1	41.7

Source: Regina *Leader-Post*, January 29, 2004, p. A1.

Table 2. Percentage of respondents with each level of health status, classified by household income. Saskatchewan respondents.

Health status	Household income			Total
	Under \$20,000	\$20,000 to \$60,000	\$60,000 plus	
Poor (1)	6.1	1.2	0.4	2.0
Fair (2)	9.4	8.9	1.6	6.9
Medium (3)	41.2	29.1	20.6	29.2
Good (4)	32.2	36.1	47.6	38.6
Excellent (5)	11.1	24.7	29.8	23.3
Total	100.0	100.0	100.0	100.0
Number of cases	180	429	252	861

Source: Statistics Canada, *General Social Survey, Cycle 14*

Table 3. Smoking and other vices. Per cent of students reporting extent of smoking and drinking

A. Rate of smoking/month			B. Rate of drinking/month		
Response	X	Per cent	Response	X	Per cent
Didn't smoke in last 30 days	0	76%	Didn't drink in last 30 days	0	23%
1-2 cigarettes per day	1.5	9%	Only at special events	1	17%
3-9 cigarettes per day	6	8%	1-3 times	2	29%
10-24 cigarettes per day	17	6%	4-6 times	5	17%
25 or more	30	1%	7 or more times	10	14%
Total		100%	Total		100%

Source: Social Studies 306, *Social Attitudes and Personal Well-being*, Fall 2003, University of Regina.

Figure 1: **Men.** Histogram of percentage distribution of income level of men in couples in living apart relationships

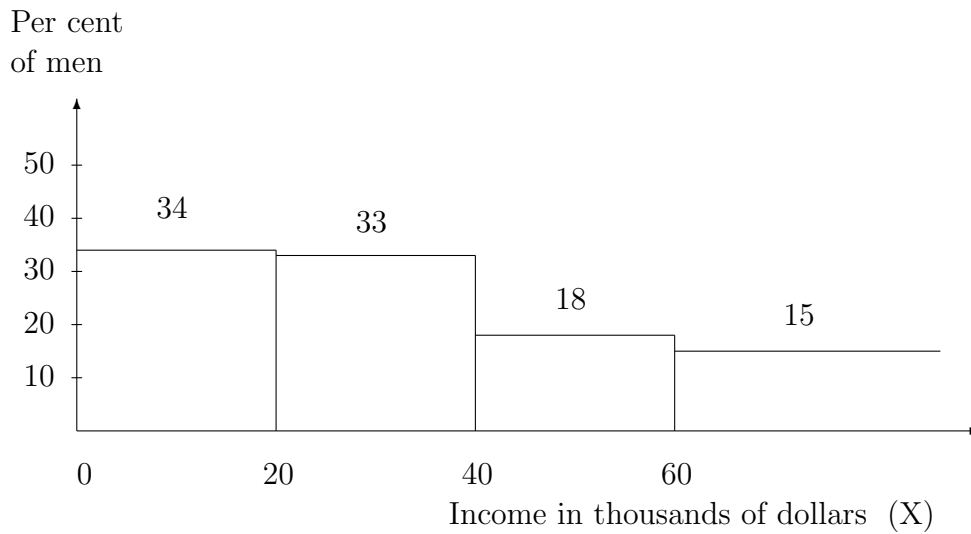
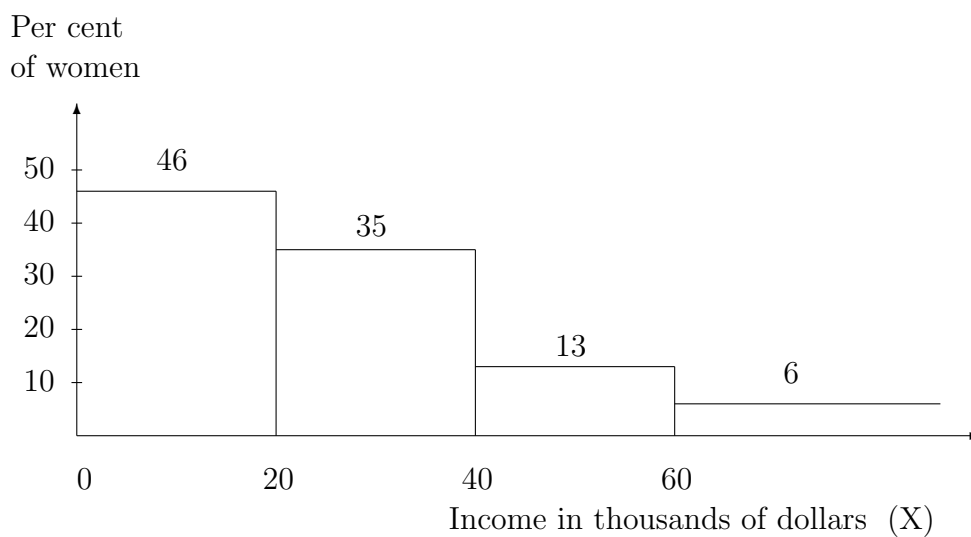


Figure 2: **Women.** Histogram of percentage distribution of income level of women in couples in living apart relationships



Note: The number above each bar represents the height of the bar or the percentage of respondents for each category.

Source: Modified from figure on p. 4 of Anne Milan and Alice Peters, “Couples living apart,” *Canadian Social Trends*, Summer 2003. Statistics Canada catalogue number 11-008.