

**This assignment is due by 3:30 pm on Monday, September 25, 2006, in Dr. Kozdron's office (College West 307.31). You may also hand it in before class that day.** You must submit all problems that are marked with an asterix (\*). You are encouraged to form study groups and collaborate with others on this assignment. However, the final work you submit must be your own. A piece of advice: *the assignments are worth very little in the computation of your final grade. It is better to suffer through not understanding something now, rather than copying from a friend just for the sake of completion. You will not have that luxury on the exams.* YOUR ASSIGNMENT MUST BE STAPLED AND PROBLEM NUMBERS CLEARLY LABELLED. UNSTAPLED ASSIGNMENTS WILL NOT BE ACCEPTED! DO NOT CROWD YOUR WORK. DO NOT WRITE IN MULTIPLE COLUMNS..

**0.** The following problems are not to be handed in. However, you should read and answer them to help solidify your understanding of some of the first chapter's key ideas.

- Review Exercises on page 1-25: #1, 2, 3, 4, 5, 6, 8, 9, 11, 12, 17, 18, 19, 24, 29

**1.** \* A company has opened several new grocery stores at a variety of locations over the past two years. Customers may pay for their purchases using either cash, credit card, or debit card. In order to better understand how customers are using these payment features, a sample of 21 customers was selected over a one week period. Data collected for each customer (shown below) included how much was spent during the shopping trip and the method of payment.

Amount spent (\$)	Method of payment
84.12	debit card
99.67	debit card
93.68	debit card
49.59	debit card
96.40	debit card
30.69	cash
23.59	cash
88.17	debit card
79.77	debit card
76.18	credit card
108.70	debit card
16.78	cash
111.98	debit card
32.09	credit card
123.62	debit card
19.78	cash
97.26	credit card
66.09	debit card
90.17	debit card
55.79	cash
112.67	debit card

(continued)

- (a) Describe the elements of your sample (observed variable, observational unit, sample size). Classify the variables. (Use as many different classification schemes as you can.)
- (b) Develop one tabular and two graphical summaries of the data that will be helpful in understanding the preferences of customers in method of payment.
- (c) Develop one tabular and one graphical summaries of the data that will be helpful in describing how much money the customers spend (use the classes \$0–\$20, \$20–\$40, etc.).
- (d) What is the mean amount spent? What is the median amount spent? Which measure (mean or median) best represents the centre of the amount-spent-data?

**2.** \* The following are daily figures on the midnight cloud cover (rounded to the nearest 10%) at Sky Harbour Airport in Phoenix, AZ, during June and July 1964:

0, 60, 30, 10, 70, 20, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 20, 100, 90, 30, 0, 0, 0, 50, 0, 0, 20, 0, 0, 100, 60, 10, 0, 10, 100, 10, 100, 20, 0, 100, 100, 100, 20, 30, 100, 100, 100, 100, 100, 0, 30, 100, 100.

- (a) Construct a frequency table.
- (b) Draw a histogram of the distribution you obtained in (a).
- (c) Compute the mean and median. Are they good descriptive measures of the data? Why or why not?

**3.** \* Suppose that an investor has a portfolio of stocks to a number of alcoholic beverage companies and that the stocks changed in values over a particular time period. For each company, the initial stock value, the final value, and the number of shares held by the investor are listed.

Company	Initial Value	Final Value	Number of Stocks
Distiller I	\$31.40	\$28.85	200
Distiller II	\$32.25	\$29.75	200
Brewery A	\$19.95	\$19.00	100
Brewery B	\$2.50	\$2.75	400
Vineyard X	\$10.25	\$9.00	300
Vineyard Y	\$9.75	\$8.75	300

- (a) Determine the (net) change in the value of the portfolio between its initial value and its final value.
- (b) Determine the mean change per stock.

**4.** \* Chapter 1 Review Exercise #15 on page 1-26. To answer this question, use the article *Tories' child care plan falls flat, poll says* published in the Globe & Mail on Monday, September 11, 2006. A copy is included on the next page. You do not need to write a “paper” but rather provide specific paragraph answers to each of the six listed questions.

For the original version, see

<http://www.theglobeandmail.com/servlet/story/LAC.20060911.POLL11/EmailTPStory>

## Tories' child-care plan falls flat, poll says

Payout 'nice gesture' with limited impact

BILL CURRY

OTTAWA – The Conservative government's \$1,200 child-care payouts are seen as a nice gesture from Ottawa that will ultimately have little impact, according to the government's own public opinion research.

The Department of Human Resources and Social Development contracted polling firm Ipsos-Reid to conduct 16 focus groups of 10 people each across the country to get feedback on the government's child-care plan, which promises to create 125,000 new spaces in addition to monthly payments of \$100 to parents for each child under the age of 6.

"The government's proposed child-care plan is viewed quite favourably by the majority of focus-group participants," the researchers write in the report.

But the government also heard that child care is so expensive that the money will likely be spent on other things instead.

"The general consensus was that the \$1,200 will not have any real impact on child-care choices and instead will be used to help with the 'next bill' or with costs associated with extracurricular activities," it states, noting there was criticism that the government will collect tax on the payouts.

"Essentially, this is seen as a nice gesture, but one that won't have a big impact."

An official with the department said the government paid \$123,205 for the research.

The Conservatives made the child-care proposal a central plank of their election campaign and it was listed as one of the government's top five priorities. The Conservatives promised to fund the program by diverting cash set aside by the Liberals to launch a national child-care program with the provinces.

Though the Liberals frequently attacked the Conservative plan throughout the campaign, the focus groups suggest those criticisms had little resonance with the public. "There is only very vague knowledge of the previous government's plans and policies with regard to child care," the report says.

Participants reportedly said the Tory plan "addresses an issue where action [or] support has long been promised but never delivered."

However, the list of weaknesses raised by the participants suggest the government would find support for enriching the program.

"The allowance is not seen as a national child-care solution. While parents may choose how to spend the allowance, it is not sufficient to have an impact upon parents' choices: No one is going

to be in a position to go back to work or stay at home to raise children because of the \$1,200.

“That said, it does not seem that people outside of major urban centres are looking for a national daycare system and, as long as it’s not positioned as such, people hold quite positive views of the current proposal.”

The report suggested that people in urban centres are more interested in a national child-care program because they face a higher cost of living.

The fact that many non-urban Canadians are not interested in such a plan may explain the government’s latest advertising for the program, which suggests ways to spend the money other than daycare.

Current radio ads suggest the payment could cover babysitting costs, while other government material suggests putting it aside for a child’s education.

Some political analysts speculated during the past election that the Conservative’s child-care plan was aimed at wooing immigrants, who are more leery of institutionalized daycare. However, the focus groups revealed the opposite.

The pollsters found a general consensus among immigrant parents that some time in formalized daycare centres is helpful to children.

“For immigrant parents, early learning can be particularly important given the linguistic and cultural challenges an immigrant child can face when starting kindergarten,” it says.