

**Economics 224-001/002
Assignment 1**

Class average was around 51/60. **The answers are below. In some cases, they are reflective of methods to be taken, not exact answers.**

1. Find the following data, being sure to explain carefully, step by step, how you found it. I should be able to duplicate your steps if I need to.
 - a) The level of unemployment in Canada for the year indicated in the table below, based on your student number.

One can find this data from :

- Cansim (<http://dc2.chass.utoronto.ca.libproxy.uregina.ca:2048/cansim2/>) or
- the Labour Force Historical Review (<http://uregina.ca/datalibrary/holdings/lfhr05.html>) or
- HRDC (<http://www4.hrsdc.gc.ca/indicator.jsp?lang=en&indicatorid=16>)

1980	1982	1984	1986	1988	1990	1992	1994	1996	1998
7.5%	11.0%	11.3%	9.6%	7.8%	8.1%	11.3%	10.4%	9.7%	8.3%

- b) The percentage change in new house prices year-over-year for the most recent month (either June or July in all likelihood) for the major cities of Canada. Your best bet to find this data is the Statistics Canada website (<http://www.statcan.ca/start.html>).

This was published in the Daily on Thursday, September 11, 2008 (and widely published in local and national papers the next day). See <http://www.statcan.ca/Daily/English/080911/d080911b.htm>

- i) Put together a bar graph of the percentage changes ranked from lowest to highest, and highlight Regina's rate. (You do not need to use the histogram function for this.) Print out and attach or cut and paste the result into your answer.

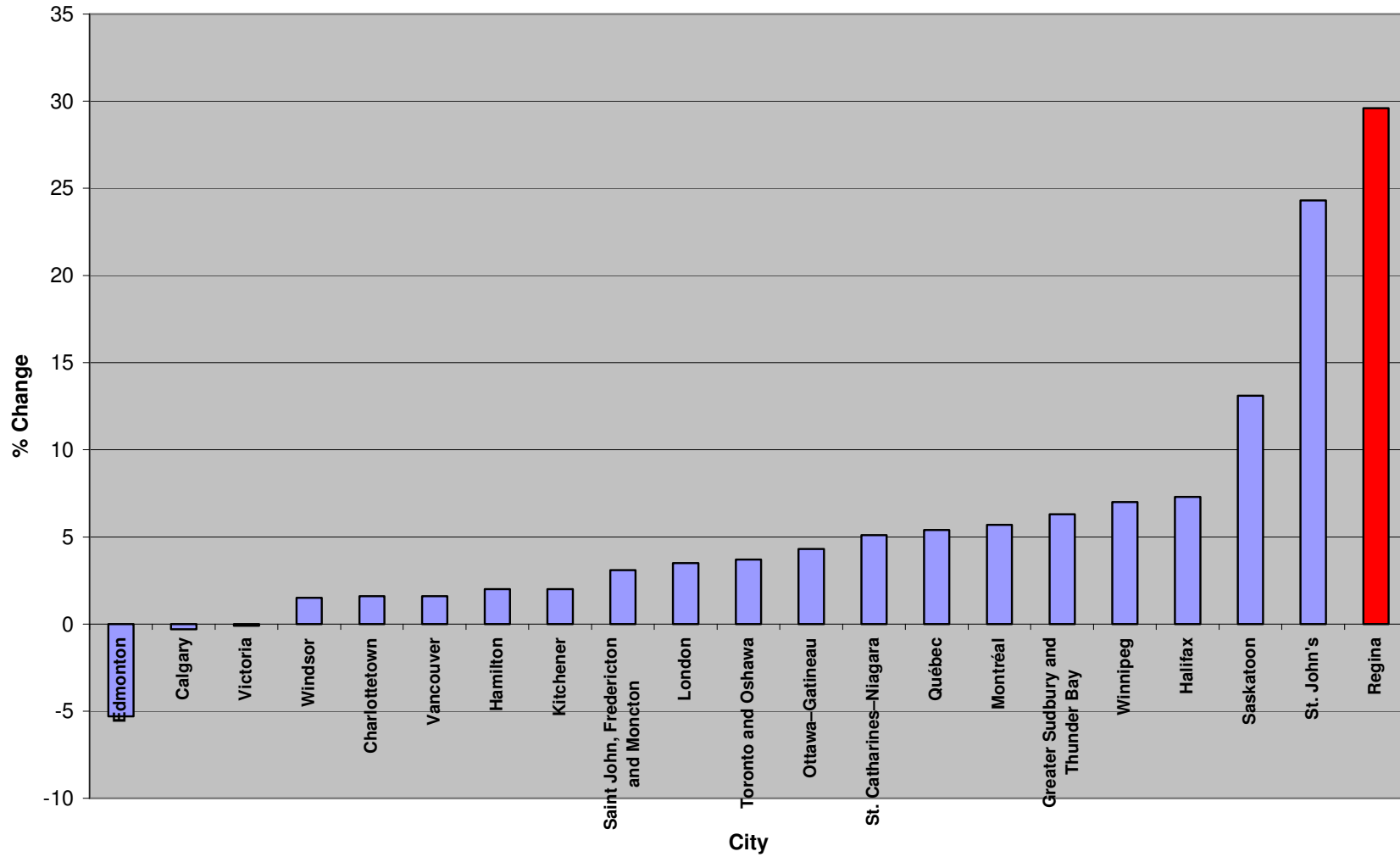
See next page.

- ii) It has been recently argued that Regina has the highest rate of increase among Canadian cities for house prices. Does your data support this argument?

Yes, it has the highest current rate.

15 marks

Percentage Increase in New House Prices July 2007 to July 2008



2. Student groups often argue that the prices of university books are very high. We're going to investigate this by gathering some data. Go to the U of R bookstore. Based on your student number in the table above, find the shelves with the books for the appropriate department.
 - a) Collect data on the titles and prices of each major book for each separate section of each course at the 200 level and 300 level. (In short, just one book, the expensive one, per section.) Stop after you have collected 10 books, if there are more than 10 separate sections. Put this data in an Excel spreadsheet. Explain any assumptions/decisions you had to make along the way.

You may have had to make decisions about what are the books in a course, if the bookstore presentation was not clear. What is a section – for example, is ECON 224-001/002 one or two sections? You would have had to decide about new versus used prices (new!). Other examples might arise – do workbooks or study guides count as textbooks, for example? The biggest issue is deciding what to do if there are several books in a section.

On the next page is a made-up set of prices and titles, giving you some idea of presentation.

- b) Use Excel's descriptive statistics data analysis tool to provide the mean, median, mode, etc for the dataset. Print out and attach or cut and paste the result into your answer.

This would be specific to different disciplines, and to some degree to how you would have collected the data. The made-up data is analyzed on the next page.

- c) Use the histogram data analysis tool to provide the frequency tables (you will need to come up with your own bin number range) and histogram graph for the data. Print out and attach or cut and paste the result into your answer.

The made-up data is analyzed on the next page. You would need to be careful to pick appropriate bin ranges.

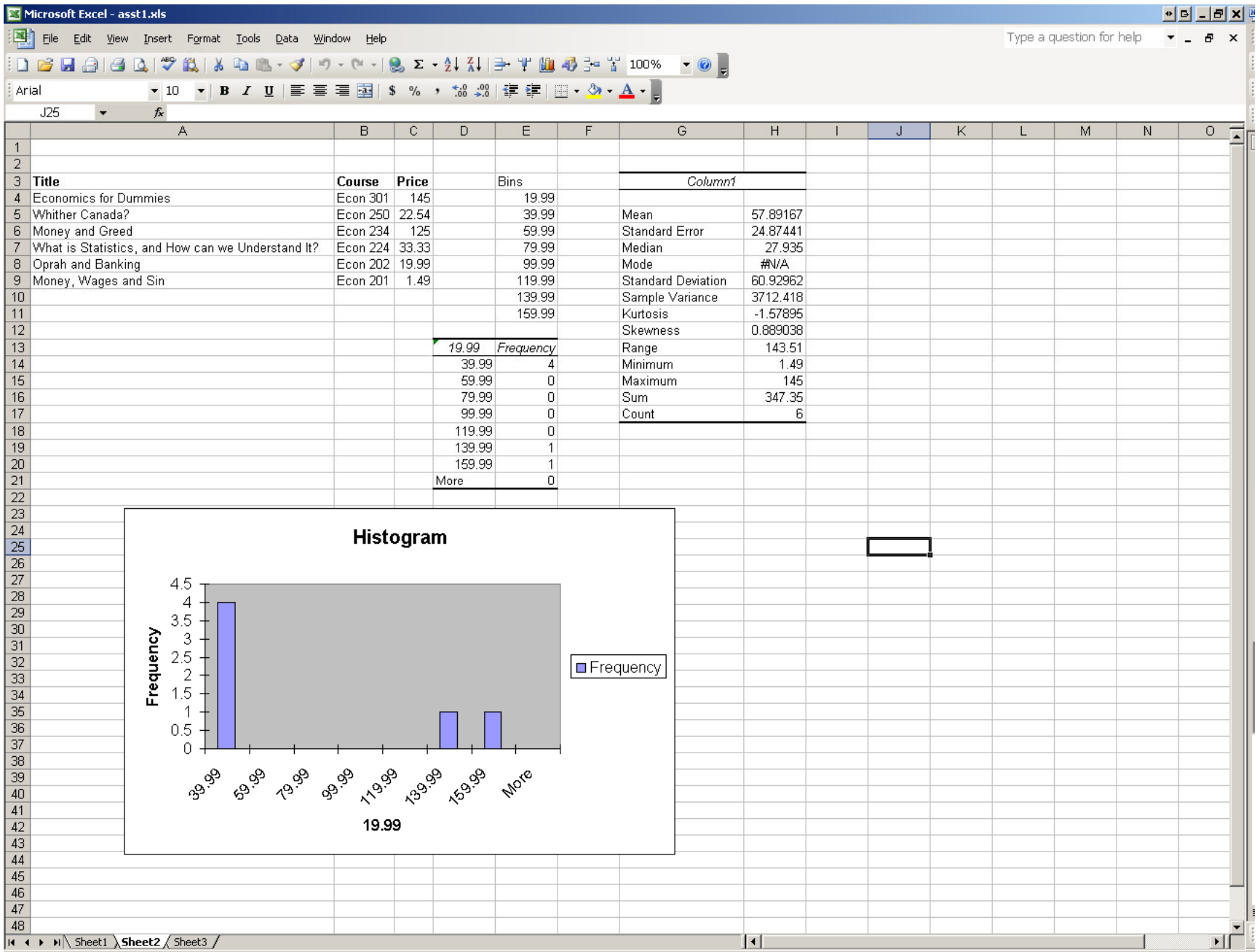
- d) If we were truly trying to find out how expensive the textbooks were in each discipline, how would we have to improve our process? Explain carefully.

I was looking for a variety of issues here, and some understanding of the problems of our method. Primary problem: is this a truly representative sample?

We would need to work on some of the problems noted above

- what is a textbook?
- what to do if we have several textbooks? Sum all the books in the section?
- would we have seen all books in the sections in our methodology?
- is the U of R representative of the costs of other universities?

25 marks



3. One of the basic tenets of finance theory is that by diversifying between various investment options, an investor can reduce risk.

The table to the right shows some data from the return on holding the stock of two companies over the last 33 years (this data is also available in an Excel spreadsheet on the course webpage).

Set up a spreadsheet and do the following:

- a) Calculate the mean, standard deviation and coefficient of variation for each stock.

The spreadsheet on the next page shows the formulas, and then on the next page the results of all parts of this question.

- b) Calculate the correlation between the two stocks.

See Next Page.

- c) Next, using Excel, create 5 diversified portfolios. The portfolios should have the following weights:

- i) 20% Brad and 80% Jen.
- ii) 30% Brad and 70% Jen.
- iii) 50% Brad and 50% Jen.
- iv) 70% Brad and 30% Jen.
- v) 80% Brad and 20% Jen.

For each of the portfolios, calculate the mean, standard deviation and coefficient of variation.

See next page. Please note that you must calculate each year's worth of portfolio returns, and then the mean etc.

- d) Which stock or portfolio combination would an investor pick to hold if they used the following criteria for choosing their portfolios or single stocks?

- i) Maximizing the return, ignoring variation.

100% of Brad's Groceries.

- ii) Minimizing the variation, ignoring the return.

You would pick the 30-70 combination.

- iii) Minimizing the coefficient of variation.

Either 30-70 or 50-50.

	Brad's Groceries Returns	Jen's Jewels Returns
1975	2	4
1976	-4	6
1977	4	3
1978	1	7
1979	11	2
1980	12	0
1981	4	-2
1982	2	-4
1983	10	-3
1984	-3	2
1985	0	5
1986	-2	6
1987	-3	10
1988	-1	4
1989	0	6
1990	-3	3
1991	4	-3
1992	11	-4
1993	13	-5
1994	-3	2
1995	-2	4
1996	-2	6
1997	-5	6
1998	3	5
1999	2	8
2000	11	-3
2001	12	0
2002	10	4
2003	12	5
2004	-2	7
2005	11	7
2006	10	-2
2007	10	0

20 marks

	A	B	C	D	E	F	G	H	I	J
1										
2										
3			Brad's	Jen's						
4			Groceries	Jewels	20-80	30-70	50-50	70-30	80-20	
5		1975	1.58400219733268	4	=(0.2*C5)+(0.8*D5)	=(0.3*C5)+(0.7*D5)	=(0.5*C5)+(0.5*D5)	=(0.7*C5)+(0.3*D5)	=(0.8*C5)+(0.2*D5)	
6		1976	-4	6	=(0.2*C6)+(0.8*D6)	=(0.3*C6)+(0.7*D6)	=(0.5*C6)+(0.5*D6)	=(0.7*C6)+(0.3*D6)	=(0.8*C6)+(0.2*D6)	
7		1977	4.15781121250038	3	=(0.2*C7)+(0.8*D7)	=(0.3*C7)+(0.7*D7)	=(0.5*C7)+(0.5*D7)	=(0.7*C7)+(0.3*D7)	=(0.8*C7)+(0.2*D7)	
8		1978	1	7	=(0.2*C8)+(0.8*D8)	=(0.3*C8)+(0.7*D8)	=(0.5*C8)+(0.5*D8)	=(0.7*C8)+(0.3*D8)	=(0.8*C8)+(0.2*D8)	
9		1979	11	2	=(0.2*C9)+(0.8*D9)	=(0.3*C9)+(0.7*D9)	=(0.5*C9)+(0.5*D9)	=(0.7*C9)+(0.3*D9)	=(0.8*C9)+(0.2*D9)	
10		1980	12	0	=(0.2*C10)+(0.8*D10)	=(0.3*C10)+(0.7*D10)	=(0.5*C10)+(0.5*D10)	=(0.7*C10)+(0.3*D10)	=(0.8*C10)+(0.2*D10)	
11		1981	4	-2	=(0.2*C11)+(0.8*D11)	=(0.3*C11)+(0.7*D11)	=(0.5*C11)+(0.5*D11)	=(0.7*C11)+(0.3*D11)	=(0.8*C11)+(0.2*D11)	
12		1982	1.88906521805475	-4	=(0.2*C12)+(0.8*D12)	=(0.3*C12)+(0.7*D12)	=(0.5*C12)+(0.5*D12)	=(0.7*C12)+(0.3*D12)	=(0.8*C12)+(0.2*D12)	
13		1983	10	-3	=(0.2*C13)+(0.8*D13)	=(0.3*C13)+(0.7*D13)	=(0.5*C13)+(0.5*D13)	=(0.7*C13)+(0.3*D13)	=(0.8*C13)+(0.2*D13)	
14		1984	-3	2	=(0.2*C14)+(0.8*D14)	=(0.3*C14)+(0.7*D14)	=(0.5*C14)+(0.5*D14)	=(0.7*C14)+(0.3*D14)	=(0.8*C14)+(0.2*D14)	
15		1985	-0.059602649006622E5	5	=(0.2*C15)+(0.8*D15)	=(0.3*C15)+(0.7*D15)	=(0.5*C15)+(0.5*D15)	=(0.7*C15)+(0.3*D15)	=(0.8*C15)+(0.2*D15)	
16		1986	-2.45432905056917	6	=(0.2*C16)+(0.8*D16)	=(0.3*C16)+(0.7*D16)	=(0.5*C16)+(0.5*D16)	=(0.7*C16)+(0.3*D16)	=(0.8*C16)+(0.2*D16)	
17		1987	-2.6114383373516	10	=(0.2*C17)+(0.8*D17)	=(0.3*C17)+(0.7*D17)	=(0.5*C17)+(0.5*D17)	=(0.7*C17)+(0.3*D17)	=(0.8*C17)+(0.2*D17)	
18		1988	-1.03045747245705	4	=(0.2*C18)+(0.8*D18)	=(0.3*C18)+(0.7*D18)	=(0.5*C18)+(0.5*D18)	=(0.7*C18)+(0.3*D18)	=(0.8*C18)+(0.2*D18)	
19		1989	-0.36466566972869	6	=(0.2*C19)+(0.8*D19)	=(0.3*C19)+(0.7*D19)	=(0.5*C19)+(0.5*D19)	=(0.7*C19)+(0.3*D19)	=(0.8*C19)+(0.2*D19)	
20		1990	-2.7949156163213	3	=(0.2*C20)+(0.8*D20)	=(0.3*C20)+(0.7*D20)	=(0.5*C20)+(0.5*D20)	=(0.7*C20)+(0.3*D20)	=(0.8*C20)+(0.2*D20)	
21		1991	4	-3	=(0.2*C21)+(0.8*D21)	=(0.3*C21)+(0.7*D21)	=(0.5*C21)+(0.5*D21)	=(0.7*C21)+(0.3*D21)	=(0.8*C21)+(0.2*D21)	
22		1992	11	-4	=(0.2*C22)+(0.8*D22)	=(0.3*C22)+(0.7*D22)	=(0.5*C22)+(0.5*D22)	=(0.7*C22)+(0.3*D22)	=(0.8*C22)+(0.2*D22)	
23		1993	13	-5	=(0.2*C23)+(0.8*D23)	=(0.3*C23)+(0.7*D23)	=(0.5*C23)+(0.5*D23)	=(0.7*C23)+(0.3*D23)	=(0.8*C23)+(0.2*D23)	
24		1994	-3	2	=(0.2*C24)+(0.8*D24)	=(0.3*C24)+(0.7*D24)	=(0.5*C24)+(0.5*D24)	=(0.7*C24)+(0.3*D24)	=(0.8*C24)+(0.2*D24)	
25		1995	-2	4	=(0.2*C25)+(0.8*D25)	=(0.3*C25)+(0.7*D25)	=(0.5*C25)+(0.5*D25)	=(0.7*C25)+(0.3*D25)	=(0.8*C25)+(0.2*D25)	
26		1996	-2	6	=(0.2*C26)+(0.8*D26)	=(0.3*C26)+(0.7*D26)	=(0.5*C26)+(0.5*D26)	=(0.7*C26)+(0.3*D26)	=(0.8*C26)+(0.2*D26)	
27		1997	-5	6	=(0.2*C27)+(0.8*D27)	=(0.3*C27)+(0.7*D27)	=(0.5*C27)+(0.5*D27)	=(0.7*C27)+(0.3*D27)	=(0.8*C27)+(0.2*D27)	
28		1998	2.59221167638173	5	=(0.2*C28)+(0.8*D28)	=(0.3*C28)+(0.7*D28)	=(0.5*C28)+(0.5*D28)	=(0.7*C28)+(0.3*D28)	=(0.8*C28)+(0.2*D28)	
29		1999	2.1139256958739	8	=(0.2*C29)+(0.8*D29)	=(0.3*C29)+(0.7*D29)	=(0.5*C29)+(0.5*D29)	=(0.7*C29)+(0.3*D29)	=(0.8*C29)+(0.2*D29)	
30		2000	11	-3	=(0.2*C30)+(0.8*D30)	=(0.3*C30)+(0.7*D30)	=(0.5*C30)+(0.5*D30)	=(0.7*C30)+(0.3*D30)	=(0.8*C30)+(0.2*D30)	
31		2001	12	0	=(0.2*C31)+(0.8*D31)	=(0.3*C31)+(0.7*D31)	=(0.5*C31)+(0.5*D31)	=(0.7*C31)+(0.3*D31)	=(0.8*C31)+(0.2*D31)	
32		2002	10	4	=(0.2*C32)+(0.8*D32)	=(0.3*C32)+(0.7*D32)	=(0.5*C32)+(0.5*D32)	=(0.7*C32)+(0.3*D32)	=(0.8*C32)+(0.2*D32)	
33		2003	12	5	=(0.2*C33)+(0.8*D33)	=(0.3*C33)+(0.7*D33)	=(0.5*C33)+(0.5*D33)	=(0.7*C33)+(0.3*D33)	=(0.8*C33)+(0.2*D33)	
34		2004	-2	7	=(0.2*C34)+(0.8*D34)	=(0.3*C34)+(0.7*D34)	=(0.5*C34)+(0.5*D34)	=(0.7*C34)+(0.3*D34)	=(0.8*C34)+(0.2*D34)	
35		2005	11	7	=(0.2*C35)+(0.8*D35)	=(0.3*C35)+(0.7*D35)	=(0.5*C35)+(0.5*D35)	=(0.7*C35)+(0.3*D35)	=(0.8*C35)+(0.2*D35)	
36		2006	10	-2	=(0.2*C36)+(0.8*D36)	=(0.3*C36)+(0.7*D36)	=(0.5*C36)+(0.5*D36)	=(0.7*C36)+(0.3*D36)	=(0.8*C36)+(0.2*D36)	
37		2007	10	0	=(0.2*C37)+(0.8*D37)	=(0.3*C37)+(0.7*D37)	=(0.5*C37)+(0.5*D37)	=(0.7*C37)+(0.3*D37)	=(0.8*C37)+(0.2*D37)	
38										
39		Mean	=AVERAGE(C5:C37)	=AVERAGE(D5:D37)	=AVERAGE(E5:E37)	=AVERAGE(F5:F37)	=AVERAGE(G5:G37)	=AVERAGE(H5:H37)	=AVERAGE(I5:I37)	
40		SD	=STDEV(C5:C37)	=STDEV(D5:D37)	=STDEV(E5:E37)	=STDEV(F5:F37)	=STDEV(G5:G37)	=STDEV(H5:H37)	=STDEV(I5:I37)	
41		CV	=C40/C39	=D40/D39	=E40/E39	=F40/F39	=G40/G39	=H40/H39	=I40/I39	
42										
43										
44		Correlation		=CORREL(C5:C37,D5:D37)						
45										
46										
47										

	Brad's Groceries	Jen's Jewels	20-80	30-70	50-50	70-30	80-20
1975	2	4	3.5	3.3	2.8	2.3	2.1
1976	-4	6	4.0	3.0	1.0	-1.0	-2.0
1977	4	3	3.2	3.3	3.6	3.8	3.9
1978	1	7	5.8	5.2	4.0	2.8	2.2
1979	11	2	3.8	4.7	6.5	8.3	9.2
1980	12	0	2.4	3.6	6.0	8.4	9.6
1981	4	-2	-0.8	-0.2	1.0	2.2	2.8
1982	2	-4	-2.8	-2.2	-1.1	0.1	0.7
1983	10	-3	-0.4	0.9	3.5	6.1	7.4
1984	-3	2	1.0	0.5	-0.5	-1.5	-2.0
1985	0	5	4.0	3.5	2.5	1.5	1.0
1986	-2	6	4.3	3.5	1.8	0.1	-0.8
1987	-3	10	7.5	6.2	3.7	1.2	-0.1
1988	-1	4	3.0	2.5	1.5	0.5	0.0
1989	0	6	4.7	4.1	2.8	1.5	0.9
1990	-3	3	1.8	1.3	0.1	-1.1	-1.6
1991	4	-3	-1.6	-0.9	0.5	1.9	2.6
1992	11	-4	-1.0	0.5	3.5	6.5	8.0
1993	13	-5	-1.4	0.4	4.0	7.6	9.4
1994	-3	2	1.0	0.5	-0.5	-1.5	-2.0
1995	-2	4	2.8	2.2	1.0	-0.2	-0.8
1996	-2	6	4.4	3.6	2.0	0.4	-0.4
1997	-5	6	3.8	2.7	0.5	-1.7	-2.8
1998	3	5	4.5	4.3	3.8	3.3	3.1
1999	2	8	6.8	6.2	5.1	3.9	3.3
2000	11	-3	-0.2	1.2	4.0	6.8	8.2
2001	12	0	2.4	3.6	6.0	8.4	9.6
2002	10	4	5.2	5.8	7.0	8.2	8.8
2003	12	5	6.4	7.1	8.5	9.9	10.6
2004	-2	7	5.2	4.3	2.5	0.7	-0.2
2005	11	7	7.8	8.2	9.0	9.8	10.2
2006	10	-2	0.4	1.6	4.0	6.4	7.6
2007	10	0	2.0	3.0	5.0	7.0	8.0
Mean	3.758231	2.606061	2.836495	2.951712	3.182146	3.41258	3.527797
SD	6.07069	4.061553	2.755459	2.360837	2.530059	3.703563	4.450482
CV	162%	156%	97%	80%	80%	109%	126%

Correlation -0.562626016