MA111 — Spring 2010

January 14

1. Handouts: Syllabus, Worksheet 1.1, and Homework 1.1.

2. Reviewed syllabus.

3. Worked on question 1 of Worksheet 1.1 in groups, reporting out comments with student introductions.

January 19

1. Handouts: Homework 1.2, Worksheet 1.2.

2. Reviewed answers to Homework 1.1, including some discussion on sources of data and credibility of websites.

3. Demonstrated the website WolframAlpha, http://www.wolframalpha.com .

4. Collected Homework 1.1 and assigned Homework 1.2.

5. Announced quiz for Thursday. Bring calculators.

6. Began reviewing Introduction to Numbers and Quantities, pages 6–7. Discussed how to make conversions by "multiplying by one." Examples: Converting 60 miles per hour to feet per second. Converting 1 trillion seconds to years.

7. Looked at Worksheet 1.2, items 1, 2, and 4.

January 21

1. Worked on and discussed some problems for Homework 1.2.

2. Reviewed some basic facts about percent.

   (a) 5% means $\frac{5}{100}$ which equals 0.05.

   (b) 10 is 25% of 40 means $10 = 0.25 \times 40$, or $\frac{10}{40} = \frac{25}{100}$.

   (c) Using the second expression above, you can set up and solve many typical percent problems.

       i. What is 25% of 40? $\frac{x}{40} = \frac{25}{100}$.

       ii. 10 is 25% of what? $\frac{10}{x} = \frac{25}{100}$.

       iii. 10 is what percent of 40? $\frac{10}{40} = \frac{x}{100}$.

3. Quiz 1.1.

4. Discussed question on percent: "Last year 50% of the members of the art club were men. This year 60% of the members of the art club are men. Yet there are fewer men in the art club this year than last year. How can this be?"

January 26

1. Passed back Homework 1.1 and Quiz 1.1.

2. Collected Homework 1.2.

3. Handed out Homework 1.3.

4. Reviewed solutions to some of the problems in Homework 1.1. In particular, mentioned some issues regarding credibility of websites.

5. Reminder: Exam #1 is on Thursday, February 4.

6. Introduction to percent and percent change — See pages 22–27 of the text.

   (a) $P\%$ means $\frac{P}{100}$. So divide by 100 to convert a percent to decimal, and multiply by 100 to convert a decimal to percent.

   (b) A is $P\%$ of N means $\frac{A}{N} = \frac{P}{100}$. If you have two pieces of information, you can use this to solve for the third.

   (c) If you increase A by $P\%$ to get B, this can be expressed as $B = A(1 + \frac{P}{100})$. Using this, you can solve for B given A, and solve for A given B.

   (d) If you decrease A by $P\%$ to get B, this can be expressed as $B = A(1 - \frac{P}{100})$. Using this, you can solve for B given A, and solve for A given B.

   (e) If A changes to B and you want to determine the percent change, use the formula $\frac{B-A}{A} \times 100 = P\%$. This works whether B is greater than A (in which case P is positive) or B is less than A (in which case P is negative).

   (f) WARNING: You cannot reverse an increase of, say, 20% by decreasing the result by 20%. You will NOT return to the original amount.

January 28

1. Looked at the Street Sign and Himalayan Glaciers websites.
2. Worked and extensively discussed Quiz 1.2.

February 2

1. Exam 1 has been moved to February 9.

2. Collection of Homework 1.3 has been moved to February 4.

3. Reviewed Homework 1.2 and 1.3. Some points:

   (a) Correct use of apostrophes in possessives.

   (b) Show your work — don't just give the answer.

   (c) Write meaningful sentences; e.g., about ratio and percent.

   (d) What is $1.23 trillion divided by $100,000?

   (e) Think about types or categories of number misuse, not just examples.

   (f) Practice correct rounding.

   (g) There is a difference between "percent of" and "percent more than". For example, 300 is 150% of 200, but 300 is 50% more than 200.

4. Worked on Worksheet 1.3: "Percent Change".

February 4

1. Reminder that Exam 1 will be on Tuesday, February 9.
2. Worked on the Exam 1 Review handout.
3. Solutions to Exam 1 Review handout later posted to course website.

February 9

1. Exam #1

February 11

1. Handout: Worksheet 2.1. Answered and discussed the questions.
2. Handout: Quiz 2.1. Answered and submitted.
3. Handout: Homework 2.1.
4. Case Study 2.2 — Read and began to to answer Study Questions 1, 3, 4, and 5 on page 35.

February 16 Class canceled due to weather.

February 18

1. Passed back Exam #1, and indicated that I plan to add 5 points to everyone's raw exam score.

2. I will send out an assignment for Homework 2.2, and also post this to the course website, later today.

3. Exam #2 will be on Tuesday, March 2, with topics in percents, means and medians, and introduction to indices.

4. Worked on problems 1, 3, 4, and 5 on page 35.

5. Looked at the government's definition of employed, unemployed, and not in the labor force.

6. Introduced mean, median, and mode, and discussed some circumstances when each is helpful.

February 23

1. Exam #2 will be on Tuesday, March 2, with topics in percents, means and medians, and introduction to indices.
2. Answered questions on Homework 2.1 and collected this assignment.
3. Worked on some of the problems of Homework 2.2.
4. Introduced the notion of making an index from a table of values.

February 25

1. Reminder: Exam #2 is on Tuesday, March 2.
2. Answered lingering questions on Homework 2.2.
3. Collected Homework 2.2.
4. Discussed handout on review questions for Exam 2.
5. Began discussing Worksheet 2.2 (not on Exam #2).

March 2

1. Exam #2

March 4

1. Discussed the Consumer Price Index. The value of a dollar in 2010 is not the same as the value of a dollar in 1980. One gallon of gas cost $1.131 in January 1980 and $2.731 in January 2010. Which was more expensive? The CPI allows us to compare the value of a dollar by comparing the cost of purchasing a certain bundle of items. In one version the index value was set to 100 in the year 1967. CPI in January 1972 = 123.2. CPI in January 1980 = 233.2. CPI in January 2009 = 632.491. CPI in January 2010 = 649.098. So $649.098 [2010 dollars] = $233.2 [1980 dollars] (in buying power). In 2010 dollars, the 1980 gas price becomes $3.148 [2010 dollars] per 1 [gallon of 1980 gas]. Thus gas was MORE expensive then (what was going on in that year?). The real price has dropped by about 13 percent.

   In 1972 the cost of tuition, room, and board at Yale for one year was $5000. In 2009 it is $47,500 for the year. In 2009 dollars, the 1972 cost becomes $25669. So the real price has increased by about 85 percent, meaning it is nearly twice as expensive as before (not 9 times as expensive).

   Websites: www.bls.gov/data for price data and CPI's, and www.bls.gov/data/inflation_calculator.htm for adjusting prices for inflation.

2. Another good website for comparing the worth of items: www.measuringworth.com/uscompare.

3. Reminder to bring Worksheet 2.2 to class next time.

March 9

1. Worked on Worksheet 3.1.

2. Worked on questions 1–3 of Worksheet 2.2.

3. Reminder of increasing by a percent via multiplication. $B = A(1 + \frac{R}{100})$, where R is a percent. Considered problem of investing \$500 at 7% annual interest — how much would this grow to in one year? In ten years?

4. Homework 3.1 due on Thursday, March 11: Finish and turn in Worksheet 3.1 and questions 1–3 of Worksheet 2.2.

March 11

1. Worked on the Worksheet 3.2.
2. Collected Homework 3.1.

March 23   1. Worked on questions 1–6 on pages 91–92 using the handout on the "Example of Credit Card Terms" posted on the website. Nothing was turned in yet, though.

March 25

1. Exam #3 will NOT be held on April 1, but on a later date to be determined.

2. Quiz 3.1.

3. Assigned Homework 3.2, due on Tuesday.

4. Passed out Worksheet 3.4 — Credit Cards

   (a) What is missing in the Best Buy terms (see "Example of Credit Card Terms" on website)? Description of penalties.

   (b) What is missing in the Chase Card terms (handout, not on website)? Description of minimum payment.

   (c) More on using spreadsheets to do calculations.

March 30

1. Collected Homework 3.2.

2. Assigned Homework 3.3, due next Tuesday.

3. Passed out some instructions on making spreadsheets, and a corrected version of the spreadsheet for calculating credit card payments (the Best Buy example).

4. Worked on Homework 3.3, demonstrating how to make a spreadsheet for the solution.

April 1

1. Announced that Exam #3 will be on Thursday, April 15.

2. Worked on Worksheet 3.3. I am going to collect this on April 8, counting it as Homework 3.4.

April 6

1. Reminder that Exam #3 will be on Thursday, April 15.

2. Anyone who is still having problems with their spreadsheets due today can still contact me for assistace.

3. Worked on Worksheet 3.5.

4. Announced Homework 3.5, due Tuesday, April 13.

April 8

1. Reminder that Exam #3 will be on Thursday, April 15.
2. Passed out the Exam #3 Review and answered questions.

April 13

    1. Continued answering questions about the Review. Review answers were emailed out and posted on the website.

April 15

1. Exam #3.

April 10

1. Examined a collection of graphs (from the website www.math.yorku.ca/SCS/Gallery, see handout), working on the following questions:

   (a) What data is being represented?
   (b) What message is being conveyed?
   (c) What misrepresentations, if any, are present?
   (d) How might the graph be improved?

2. Demonstrated some of the graphs that can be made at Gapminder, www.gapminder.org, including plotting infant mortality against carbon dioxide emissions.

3. Passed out Wikipedia article on charts.

4. Assigned Homework 4.1 (due Thursday) and Homework 4.2 (due Tuesday).

April 22

1. Reminder that the final exam will be on Thursday of exam week, 8–10 am, in our regular classroom.

2. Looked at and collected Homework 4.1.

3. Demonstrated how to make bar graphs, line graphs, and pie charts using Excel.

4. Worked on Homework 4.2.

5. Began working on Case Study 5.5.

April 27

1. Review

April 29

1. Review