

Statistics 2500, Section 001
Assignment #1: Week of Sept. 21, 2009
Due date: Thursday, Oct. 1, 2009: 5pm

- The use of Minitab is **required** in the questions indicated. If you think you can use it in other questions, feel free to do so.
- Please **staple** the pages of your assignment together.
- Write your **name, lab instructor's name** and **day and time** you attend lab on your assignment.
- Assignments are to be passed into the assignment boxes located just to the left of the math/stats department's general office (HH-3003). Please put your assignment in the box that has your lab instructor's name on it:

Melissa (Mon. 9am, 10:30am): **BOX 1**

Vineetha (Mon. 3:30pm, Tues., Thurs. 1:50pm): **BOX 2**

Chithran (Wed. 9am, 10:30am): **BOX 3**

Hubert (Fri. 9am, 10:30am): **BOX 4**

Yunqi (Fri. 2pm): **BOX 5**

- All problem numbers are taken from the textbook *Elementary Statistics* by Bluman and Mayer.

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1. On Sept. 21, 2009, the VOCM *Question of the Day*, which anyone is welcome to answer on their website, was the following:

Is it time for the provincial government to reconsider the issue of indexing pensions for its public sector pensioners?

At one time during the voting, 1712 voters had given responses: (37%) had answered "yes", 59% had answered "No", and 4% said "Not sure".

- (a) Explain whether or not the 1712 voters are a simple random sample of all voters in this province.
 - (b) Explain whether or not the results could be considered as representative of all voters in this province.
2. #8, p. 22.
 3. #12, p. 23.
 4. #3, p. 70. Also construct a Pareto chart by hand.

5. Refer to the data in #12, p. 40 and complete the following:
- #12, p. 40.
 - Construct a histogram by hand. Describe its shape.
 - Use Minitab to construct a histogram for this data. Does the histogram look exactly the same as the one you constructed in (b)?
6. For the data in #15, p. 67, answer the following:
- Construct a stem-and-leaf plot **by hand**.
 - Construct a stem-and-leaf plot using Minitab.
 - Use Minitab to construct a histogram. Describe the shape of the histogram. Based on its shape, would you expect the mean to be larger than, smaller than, or about the same as the median? Explain.
 - Use Minitab to find the mean, median, range and variance.
 - Use Minitab to construct a boxplot of the data.
7. #38, p. 95.
8. #36, p. 113.
9. #42, p. 113.
10. Consider the following data on the results from one of the Super 7 draws. I've changed the "free ticket" prize to \$2 for this question.

Regular Numbers	Bonus	Numbers Matched	Prize Amount	Number of Winners
5 6 16 36 37 44 46	30	7	\$10,000,000.00	1
		6 + Bonus	\$68,286.80	3
		6	\$1,495.30	137
		5	\$103.50	6,729
		4	\$10.00	143,036
		3 + Bonus	\$10.00	130,276
		3	\$2.00	1,195,440

- Find the sample mean of the prize value awarded.
Hint: If we wrote the prizes in a long list, the number 10,000,000.00 would appear once, 68286.80 would appear 3 times, down to 2 appearing 1,195,440 times.
- The price of a Super 7 ticket is \$2. Your answer in (a) is larger than \$2. Since the mean (average) prize value awarded is greater than the cost of the ticket, does this mean we should buy a Super 7 ticket? Explain.