Review for Exam 1

Exam 1 will be held in room 2306 (building 2) at 2:00 Saturday, February 19.

The exam will cover chapters 1-4, only the sections and topics covered in the homework. Use the Important Topics from the Unit 1 Assignment Sheet for what will be covered.

There is a practice exam and answer key posted you can use to study. This is optional and not part of the homework but I suggest you work on problems to gauge your understanding of the material. The Wednesday Virtual Classroom session will be an exam review where I will be working out problems similar to exam questions and answering questions.

Please arrive 10 minutes early to get settled so the exam can start on time.

Bring
- Photo ID (drivers license or school id; credit card photos are not accepted)
- Book homework– be sure to staple all the pages together (one staple for all pages) and follow the homework guidelines for format
- 2% (3x5) note card – see the course syllabus for information
- Calculator – bring you own, no sharing
- Pencil and eraser no scratch paper

General Information
- Round all answers to 4 decimal place accuracy (except percentiles)
- Show all work (except when using the calculator)
- Use the calculator for finding the mean and standard deviation
- Absolutely no talking or communicating with another student about anything. This includes borrowing an eraser, calculator etc. If you have questions ask me.
- No leaving the room and coming back. Unless you have made prior arrangements with me, plan on arriving on time. I sometimes make announcements before the exam starts.
- Your calculator must not have any programs added.

I should have the exams graded in about 3-4 days and the results will be posted on WebAccess. Be sure to check WebAssign for any updates to this review before coming to the exam.

Here are some details:

Sampling and Data
- Types of data
- Sampling methods
- Population and sample
- Parameter and Statistic
- Variable
- Data

Tables
- Include a label that represents the data
- Draw either a Frequency table or Relative Frequency table not both. For example, if asked for a relative frequency table do not include the frequencies in your final answer

Line Graph
- Use midpoints
- Include labels
Histograms
- Use boundaries
- Include labels
- For a relative frequency you may use decimal or percent notation rounded to 4 decimal place accuracy
- Draw either a Frequency histogram or Relative Frequency histogram not both. For example, if asked for a relative frequency histogram do not include the frequencies in your final answer

Boxplot
- 5–number summary
- Determine if a value is an outlier

Mean, Median, Mode, and Standard Deviation
- Mode and Median should be one of the midpoints not an interval
- Weighted mean
- z-scores
- Unusual values

Probability
- Know the difference between P(A), P(A or B), P(A and B), P(A | B)
- Write answers in simplified fraction form or rounded to 4 decimal places
- Mutually Exclusive
- Independent
- Complement
- Unusual Events (compare to 0.05)

Probability Distributions
- Mean
- Standard Deviation
- Expected Value
- Write a Probability Distribution
- Determine if a score is Unusual (compare with +/- 2 standard deviations from the mean)
- Determine if an event is Unusual (compare the probability with 0.05)

Binomial Distributions
- Use the calculator function binompdf or binomcdf for finding probabilities
- State the function you are using and show the calculator command
- There are 3 steps for completing a binomial problem correctly. An acceptable answer is of the form P(x > 4) = 1 – P(x < 3) = binomcdf(10, .23, 3) = 0.8206. The function is P(x > 4) = 1 – P(x < 3), the calculator command is binomcdf(10, .23, 3), and the answer is 0.8206. Each part is worth 1 point.

Common Mistakes
The following are common errors that result in point deductions:
- No label on tables and graphs
- Not using boundaries on histograms, midpoints on line graphs
- Including frequencies on a relative frequency graph
- Finding the sample standard deviation when the data is a population (or population when the data is a sample)
- Writing the mode or median as an interval instead of the midpoint of the class
- Not rounding to 4 decimal place accuracy
- Finding probabilities that are greater than 1 or less than 0
- Not stating why one score is better than the other when using a z-score comparison (for example, you need to write Z_A < Z_B therefore the score of exam A is better)
- Writing percentiles as percents
- Not including all three steps on Binomial problems