

Exam 1/Chapters 1 – 3

The data for this exam can be found in the file *exam1data.xls*

1) Answer true or false to each of the following:

- (a) ___ Scoring in the 90th percentile on this exam will be better than scoring 90% on the exam.
- (b) ___ Variance is the square root of Standard Deviation.
- (c) ___ A set of quantitative data will always have a mean.
- (d) ___ Results from self selected samples are always better than results from random samples.
- (e) ___ Statistics has many real life applications.

2) At the beginning of this semester I took an online survey where I asked the question “How tall are you?” The results are stored in the file *exam1data.xls* in sheet *number 2*. Use this set of data to answer the following:

- (a) Mean = _____
- (b) Median = _____
- (c) Mode = _____
- (d) Population Standard Deviation = _____
- (e) Sample Variance = _____
- (f) 5 number summary:
- (g) $P_{86} = \underline{\hspace{2cm}}$
- (h) Find the z-score for a height of 72 inches (use the sample standard deviation, that is $z = \frac{x - \bar{x}}{s}$)

(i) Find the frequency distribution using 51 as the first lower class limit and a class width of 4.

(j) Sketch a graph of the histogram.

3) Suppose an exam was given to the morning and afternoon sections of a Statistics course and both classes had the same mean but the standard deviation of the morning section was much higher than the standard deviation of the afternoon section. What does this imply?

4) Find the GPA for the report card below. Recall: A=4, B=3, C=2, D=1, F=0.

Class	Units	Grade
Statistics	5	A
English	4	C
History	3	B
Chemistry	4	B
P.E.	0.5	A

5) The following was copied from the green sheet for this class:

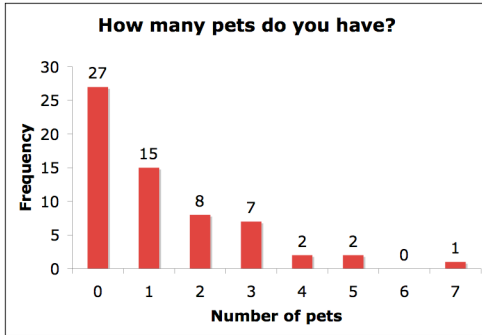
Grading: Exams : 50%
Homework : 10%
Quizzes : 20%
Final : 20%

Compute the grade for a student who earns 86% on the exams, 97% on the homework, 81% on the quizzes, and 75% on the final.

6) According to *Consumer Reports* the life spans of refrigerators is normally distributed with a mean of $\mu = 14$ years and a standard deviation of $\sigma = 2.5$ years.

- (a) Would it be unusual for refrigerator to last 10 years? Why or why not?
- (b) What percentage of refrigerators last between 11.5 lbs and 16.5 years?
- (c) What percentage of refrigerators last between 11.5 lbs and 19 years?

7) At the beginning of this semester I took an online survey where I asked the question “How many pets do you have?” I converted the results into the following graph. Find the Sample Mean, Median, Mode and Sample Standard Deviation for the number of pets. (Hint: this is a frequency distribution)



8) The weekly sales at a newly opened coffee shop were recorded for the first 25 weeks of operation. The results are stored in the file *exam1data.xls* on sheet *number 8*. Sketch an appropriate graph of the data and interpret the results.

9) The area of floor space (in square feet) and the selling price of 40 homes was recorded and stored in the file *exam1data.xls* in sheet *number 9*. Sketch an appropriate graph of the data and interpret the results.