Graphing Assignments
Math 113 - Introduction to Applied Statistics

You may work with one other person on each of these graphing assignments. You do not have to work with anyone else, but you may find it useful to have someone to reason through the process with you. Make sure you understand what is going on as you will need to recreate some of these graphs for your semester project.

Use Minitab to create the graphs that follow. Try to make the graphs look as close as you can to mine, but part of the process is to get you to play around, so colors and exact positioning aren't crucial. Do not close your graph from within Minitab. Instead, save your data and graphs as a project in case you need to open it and make changes. If you close the graph and then save, it will be lost.

For each document:
1. Create the graphs in Minitab. Save your Minitab project.
2. Create a new Word document. Type your name(s) at the top of each document. Even though your name is on the email, it also needs to be in the assignment.
3. Type the title that appears at the top of the page.
4. Copy the graphs from Minitab and paste them into the Word document.
5. Save the Word document.
6. Email the document to the instructor at james@richland.edu

You do not need to type the extra text that is on the page. I'm interested in the graphs.

If you fail to type your name on the document, you will lose 1 point. Don't type the hints or the reminders at the bottom of each page.
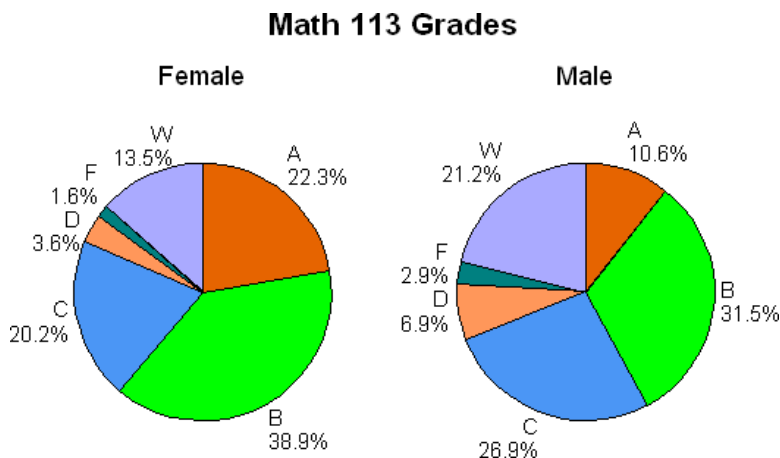
Each graphing assignment is worth 10 points. The assignments are due before the beginning of class on the day of the exam for that material.

Late work will be accepted but will lose 20% of its value per class period.
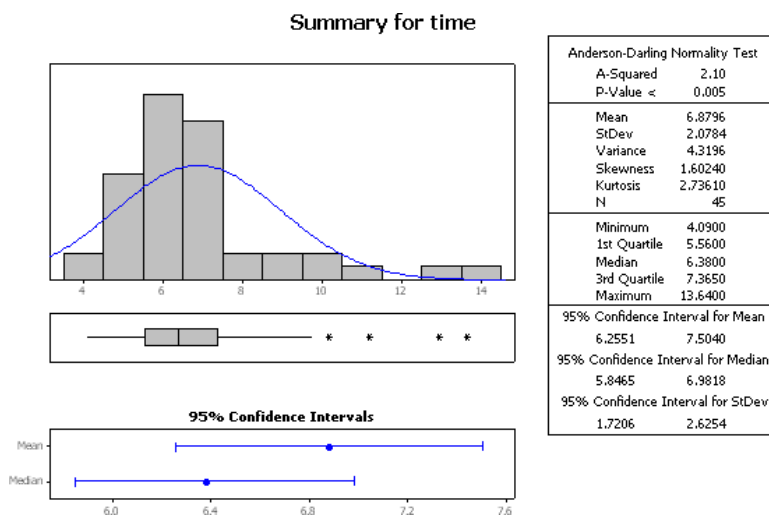
Graphing Assignment 1: The Basics

1. The breakdown of grades earned in all Math 113 sections taught by James Jones are shown in the table. Use Minitab to create a side-by-side pie chart of the grade distribution as a percent by gender. You may need to drag the individual labels so they don't overlap.

Grade	Female	Male
A	129	37
B	225	110
C	117	94
D	21	24
F	9	10
W	78	74

Math 113 Grades

Female

W 13.5%
F 1.6%
D 3.6%
A 22.3%
C 20.2%
B 38.9%

Male

W 21.2%
A 10.6%
F 2.9%
D 6.9%
B 31.5%
C 26.9%

2. Use the four legged walk data to create a graphical summary of the *time* variable. If there is more than one section of the class, include the data from all sections. Your graph will be similar to this one, but the numbers will be different since you'll be using your data.

Summary for time

Anderson-Darling Normality Test	
A-Squared	2.10
P-Value <	0.005
Mean	6.8796
StDev	2.0784
Variance	4.3196
Skewness	1.60240
Kurtosis	2.73610
N	45
Minimum	4.0900
1st Quartile	5.5600
Median	6.3800
3rd Quartile	7.3650
Maximum	13.6400

95% Confidence Interval for Mean
6.2551   7.5040
95% Confidence Interval for Median
5.8465   6.9818
95% Confidence Interval for StDev
1.7206   2.6254

95% Confidence Intervals

Mean
Median

Graphing Assignment 2: Probability

1. Create a graph of the binomial distribution when $n = 10$ and $p = 0.4$. There is a reference line at $y = 0$ to show the x-axis (the points get cut off if you make the minimum y value 0).
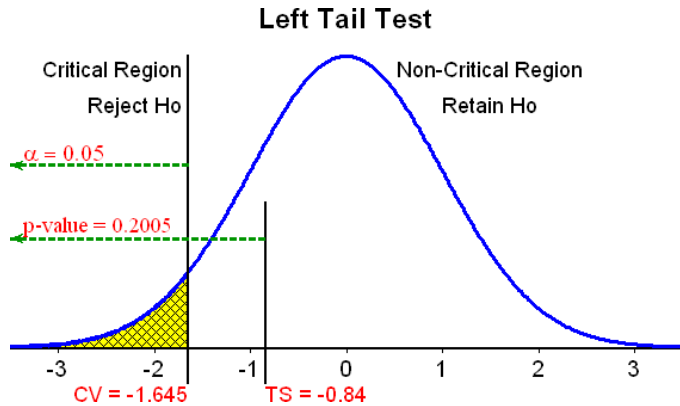
Binomial Distribution
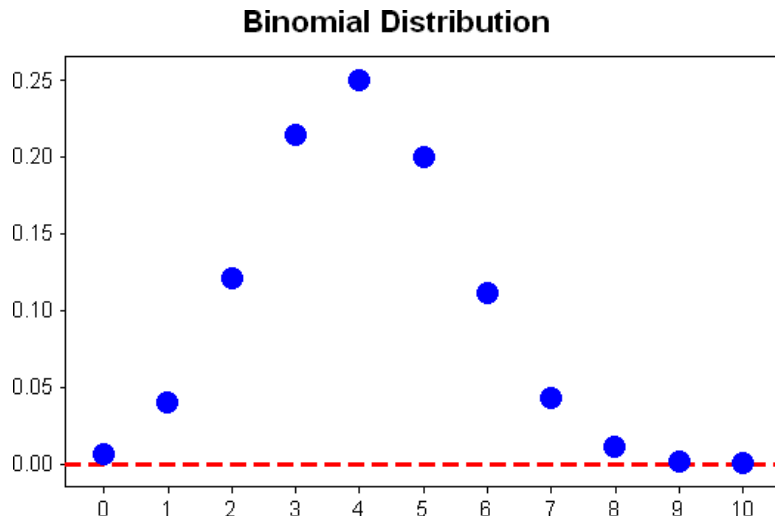
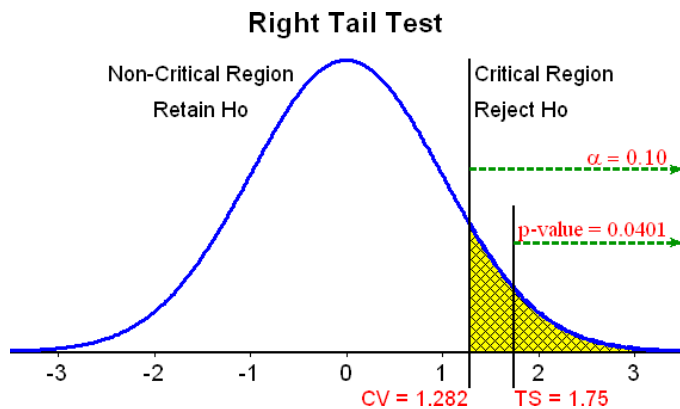2. Create a graph illustrating the 68-95-99.7 rule.

Empirical Rule
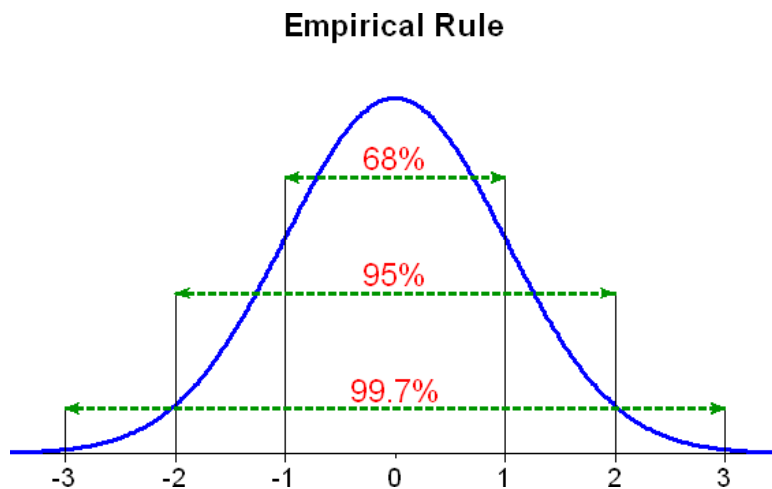
Graphing Assignment 3: Inferential Statistics
To get the alpha, type the letter a and then change the font to Symbol.

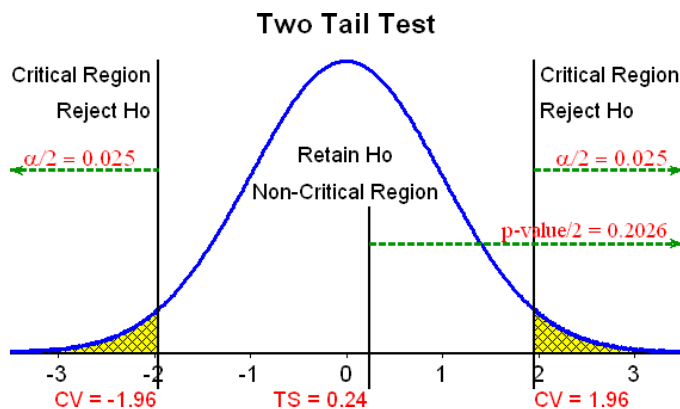1.   Left tail test with $\alpha = 0.05$, CV = -1.645, TS = -0.84, p-value = 0.2005

Left Tail Test

Critical Region
Reject Ho

Non-Critical Region
Retain Ho

$\alpha = 0.05$

p-value = 0.2005

-3   -2   -1   0   1   2   3
CV = -1.645   TS = -0.84

2.   Right tail test with $\alpha = 0.10$, CV = 1.282, TS = 1.75, p-value = 0.0401

Right Tail Test

Non-Critical Region
Retain Ho

Critical Region
Reject Ho

$\alpha = 0.10$

p-value = 0.0401

-3   -2   -1   0   1   2   3
CV = 1.282   TS = 1.75

3.   Two tail test with $\alpha = 0.05$, CV = ±1.96, TS = 0.24, p-value = 0.4052

Two Tail Test

Critical Region
Reject Ho

Critical Region
Reject Ho

$\alpha/2 = 0.025$ Retain Ho $\alpha/2 = 0.025$
Non-Critical Region

p-value/2 = 0.2026

-3   -2   -1   0   1   2   3
CV = -1.96   TS = 0.24   CV = 1.96

Remember to put your name at the top of the page.

Graphing Assignment 4: Advanced Topics

1. A chi-square test with 5 df, $\alpha = 0.10$, CV = 9.24, TS = 6.57, p-value = 0.2546

Chi-Square Test
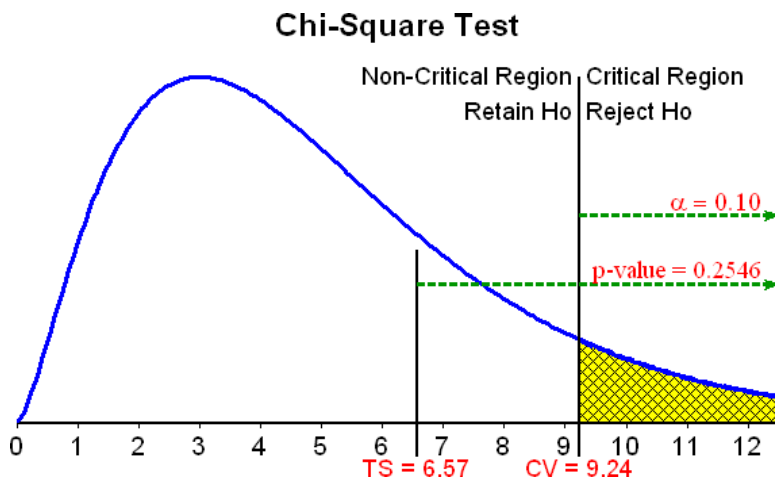
2. Scatterplot of your response and predictor variables from the blood pressure activity. If there is more than one section, include the data for all sections. Your graph will be similar to this one – be sure to use your variables, not the ones shown in the graph below. The reference lines at 111.18 and 69.73 are the means for each variable.

Blood Pressure