Midterm Exam Review

Stat 145, Spring 2010

Group A: pg 155, #6

Bread. Clarksburg Bakery is trying to predict how many loaves to bake. In the last 100 days, they have sold between 90 and 140 loaves per day. Here is a histogram of the number of loaves they sold for the last 100 days.

a) Describe the distribution.

b) Which should be larger, the mean number of sales or the median? Explain.

c) Here are the summary statistics for Clarksburg Bakery's bread sales. Use these statistics and the histogram above to create a boxplot. You may approximate the values of any outliers.

Median	100
Min	95
Max	140
25^{th} percentile	97
75^{th} percentile	105.5

Group B: pg 455, #35

Technology on Campus. Every 5 years the Conference Board of the Mathematical Sciences surveys college math departments. In 2000 the board reported that 51% of all undergraduates taking Calculus I were in classes that used graphing calculators and 31% were in classes that used computer assignments. Suppose that 16% used both calculators and computers.

a)What percent used neither kind of technology?

b) What percent used calculators but not computers?

c) If we randomly select 3 students what is the probability that at least one used both calculators and computers?

d) What percent of the calculator users had computer assignments?

e) Based on this survey, do calculator and computer use appear to be independent events? Explain.

Group C: pg 160, #25

Be Quick! Avoiding an accident when driving can depend on recitation time. That time, measured from the moment the driver first sees the danger until he or she gets his foot on the brake pedal, is thought to follow a Normal model with a mean of 1.5 seconds and a standard deviation of 0.18 seconds.

a) Use the 68-95-99.7 Rule to draw the Normal model.

b) Write a few sentences describing reaction times.

c) What percent of drivers have a reaction time less than 1.25 seconds?

d) What percent of drivers have reaction times between 1.6 and 1.8 seconds?

e) What is the interquartile range of reaction times?

Group D: pg 160, #33

Age and party 2007. The Pew Research Center conducts surveys regularly asking respondents which political party they identify with. Among their results is the following table relating preferred political party and age.

	Republican	Democrat	Others	Total
18-29	2636	2738	4765	10139
30-49	6871	6442	8160	21473
50-64	3896	4286	4806	12988
65+	3131	3718	2934	9784
Total	16535	17183	20666	54384

a) What percent of people surveyed were Republicans?

b) What percent of people surveyed were under 30 or over 65?

c) What percent of the people were classified as "Other" and under the age of 30?

d) What percent of the people classified as "Other" were under 30?

e) What percent of people under 30 were classified as "Other"?

Group E

Penguins. The Coca Cola Company released a report last year that claimed 60% of penguins in Antarctica enjoy Coca Cola. Two Stat 145 TAs were interested after this report and traveled to Antarctica intent on performing a survey of their own. They randomly selected 50 penguins and asked each of them whether or not they enjoyed Coca Cola.

a) What model do you expect the sample proportion to follow? Check any necessary conditions.

b) What is the chance that more than 40 of the 50 penguins said they enjoy Coca Cola?

c) What is the chance that between 20 and 40 penguins said they enjoy Coca Cola?