Stat 2610 Quiz 1 Name Todd

Each problem is worth five points. For full credit circle answers and **show all your work.**

1. The Visniak Bottling Plant in Cheektowaga, New York, has been accused of systematically underfilling 12-ounce bottles of soda. An inspection team enters the plant one afternoon and selects bottled soda ready for shipment from various locations within the plant. The contents of each selected bottle are carefully measured.

Identify the population in this study:

12 oz bottles of soda.

Identify the sample in this study:

Selected bottles

2. A sample of five people is analyzed to make a general statement concerning the population from which the people were sampled. This is an example of:

A) Descriptive statistics

B) Inferential statistics

C) Inferential random sampling analysis

D) Simple random sampling analysis

3. In many real-world settings, it is not possible or feasible to know the characteristics of the population. Since we cannot safely assume these characteristics, we must use the information from a sample to answer questions concerning the population. In cases such as these, we are dealing with a(n) ________________ problem.

A) probability

B) undetermined

C) statistics

D) reality

4. To make a predictive statement about a sample of five people, an analyst uses data from the general population in which these people live. This is an example of:

A) probability

B) undetermined

C) statistics

D) reality

Quiz 2 **Name** Todd

Each problem is worth four points. For full credit circle answers and **show all your work.**

1. Is the observation "The time it takes to bake batches of chocolate chip cookies" a discrete or continuous variable?

Continuous

2. Consider the given stem and leaf plot. The right most number in the third row is 7. What does this 7 represent?

50	3
51	5
52	3 7
53	4 6
54	3 3 9
55	0 0 3 3 7
56	1 1 1 3 3 4 6 7 7
57	0 0 1 1 3 4 4 4 4 5 7 8 8
58	0 1 2 2 3 4 4 6 6 6 7 7
59	3 3 3 5 5 6 9
60	1 1 2

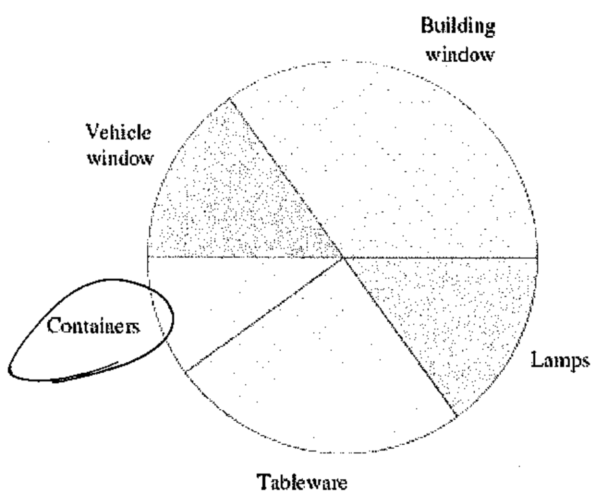
527

Stem = hundreds and tens
Leaf = ones

3. A data set consisting of two observations on each individual subject is a bivariate data set.

4. Is the observation "The sex of a new born baby" a discrete or continuous variable?

5. Cardinal Glass Industries produces several products for residential buildings, vehicles, and ordinary consumer use. A pie chart depicting the proportion of each type of manufactured product is displayed.



Identify the product with the lowest proportion.

Quiz 3 **Stat 2610** Name Todd

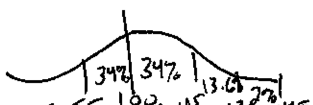
Each problem is worth four points. For full credit circle answers and **show all your work.**

1. For $\bar{x} = 407$, $s = 16$, and $x = 500$, calculate the corresponding z score to four decimal places.

$$z = \frac{x - \bar{x}}{s} = \frac{500-407}{16} = 5.8125$$

2. It is known that WAIS IQ scores are normally distributed with $\mu = 100$ and $\sigma = 15$. Approximately what proportion of the population has an IQ score between 85 and 145?

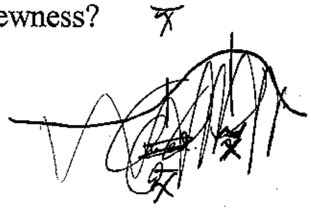
normalcdf(85, 145, 100, 15) = .8399947732 = 84%



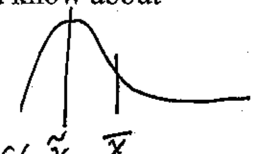
34+34+13.5+2 = 83.5%

3. If the sample mean is **greater than** the sample median, then what do you know about skewness?

$\bar{x} > \tilde{x}$



Skewed ~~left~~ right (~~negative~~ positive)



left $\tilde{x}$ $\bar{x}$

~~right~~ = +1

4. The following times (in seconds) are for the first 50 meters from the women's 200 meter backstroke at the Beijing Olympics in 2008.

29.62	29.83	30.14	30.63	31.16
30.06	30.62	30.80	30.83	29.98

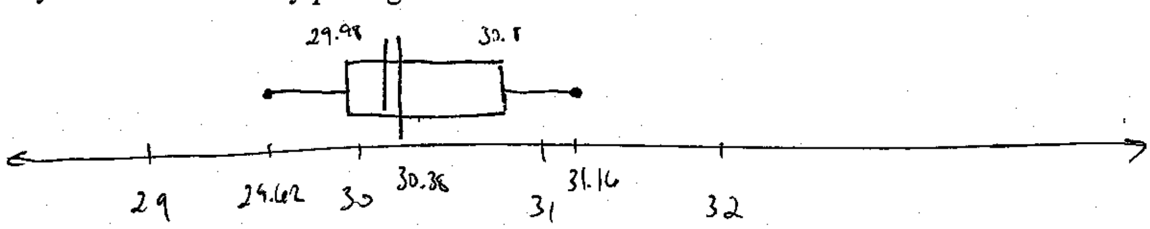
$\bar{x} = 30.367$

Find the sample variance, s^2, and the sample standard deviation, s (to four decimal places).

$s_x = .5061663127$

$s_x^2 = .2562$

5. Construct a box plot from the data presented in the table in #4. Identify any outliers with an * and any extreme outliers by putting a circle around the *.



Stat 2610 Name Todd

Quiz 4

Each problem is worth four points. For full credit circle answers and **show all your work**.

1. A computer security system requires a unique password for each user. The passwor~~k~~ds use only letters of the English alphabet (26 possible letters) and cannot contain any repeats (i.e. any given letter can be used only once in a password). If passwords have five letters each, then how many passwords are available?

$$26 \cdot 25 \cdot 24 \cdot 23 \cdot 22 = {}_{26}P_5 = 7,893,600$$

2. If there are 32 students in our class then:

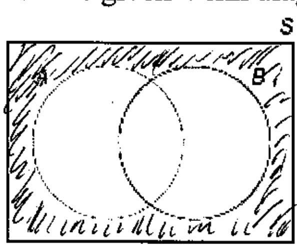
* how many ways can we choose a president, vice president, and secretary?

$${}_{32}P_3 = 29,760$$

* how many ways can we select three students to bring treats next Friday?

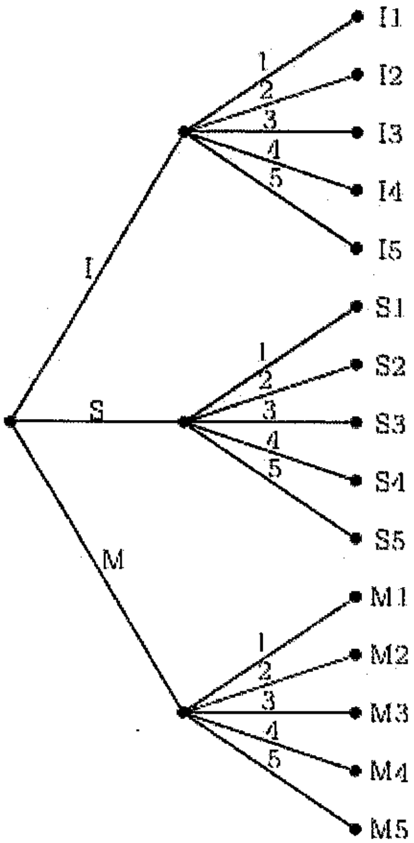
$${}_{32}C_3 = 4960$$

3. The given Venn diagram shows the relationship between two events, A and B.



Shade the Venn diagram to show $(A \cup B)'$

4. A construction crew excavating a site for a building foundation must remove the rock and prepare a trench for concrete footers. An experiment consists of recording the type of rock present (I, igneous; S, sedimentary; M, metamorphic) and the number of days needed to prepare the site (1 to 5). Identify the sample space for the experiment given the tree diagram below.



$S = \{ I1, I2, I3, I4, I5, S1, S2, S3, S4, S5, M1, M2, M3, M4, M5 \}$

5. Consider an experiment, the events *A* and *B*, and probabilities $P(A) = 0.55$, $P(B) = 0.45$, and $P(A \cap B) = 0.15$. Calculate the following:

* the probability of A or B occurring

$P(A \cup B) = P(A) + P(B) - P(A \cap B)$

$= .55 + .45 - .15$

$= .85$

* the probability of A and B occurring

$P(A \cap B) = .15$

Ex. Cr.: Suppose a combination lock uses the digits 0 through 40 (including both 0 **and** 40), each combination has three numbers, and no digit is used consecutively. Calculate the fewest number of combinations required to open the combination lock if you do not know the combination.

Stat 2610 Name Todd

Quiz 5

Each problem is worth four points. For full credit circle answers and **show all your work.**

1. The infant mortality rate is the number of deaths to individuals under the age of 1 year per 1000 births. In 2007, the infant mortality rate in Canada was 4.6 and in the United States was 6.4. Suppose three Canadian and three American children are selected at random. (Give your answers to four decimal places.)

mortality: .0046

Calculate the probability that all three Canadian kids will live past the age of 1 year .9863

survival: .9954 $.9954^3 =$

Calculate the probability that all three US kids will live past the age of 1 year .9809.

mortality: .0064 survival: .9936 $.9936^3 =$

2. Give an example of two mutually exclusive sets in our classroom. Men & Women

Not: Shoes & brown hair

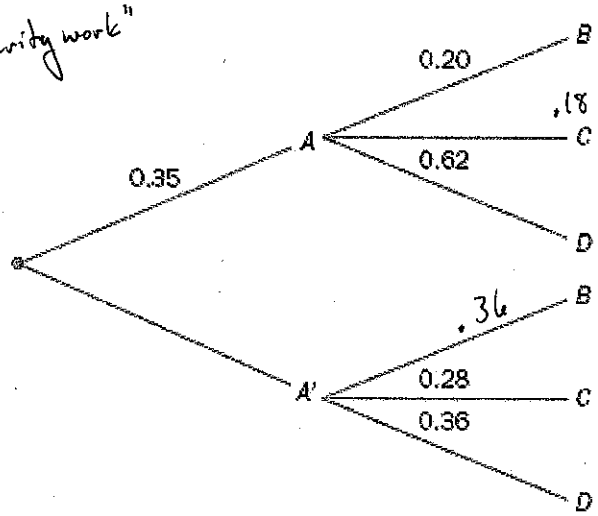
3. Supose the probability that an individual has blue eyes is 0.41. Four people are randomly selected, calculate the probability (to four decimal places) that exactly two have blue eyes.

P(exactly two blue eyes) = $4 \text{ nCr } 2\ (.41 \times .41 \times .59 \times .59)$

$= .3511$

4. Consider the given tree diagram, which has some missing probabilities.

"Charity work"



Calculate the following to two decimal places:

P(A') = .65

P(C|A) = .18

$(.35 \cdot .62) + (.65 \cdot .36) =$

$= .217 + .234$

P(D) = .451 => .45 $= .451$

5. Give the range of all possible values for a probability: [0, 1]

Ex. Cr.: Suppose Dr. Todd has a fun size bag of M&M candies containing five blue, three yellow, four orange, two red, and two green. If fifteen M&M's are eaten, then calculate the probability that the remaining M&M's are green. There are no M&M's left!

Stat 2610 Name Todd

Quiz 6

Each problem is worth five points. For full credit circle answers and **show all your work.**

Use the probability distribution given below for the following items.

X	1	2	3	4	5	6
P(x)	0.2	0.1	.3	0.1	0.1	0.2

1. Calculate P(3) = .3

2. An experiment consists of rolling the loaded die two times and computing the sum. Give the sample space for this experiment and determine if the result is a discrete or continuous variable.

{2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12}

3. Calculate the probability of getting a sum of seven or P(7) = .16

1, 6 → .2 × .2 = .04

2, 5 → .1 × .1 = .01

3, 4 → .3 × .1 = .03

4, 3 → .1 × .3 = .03

5, 2 → .1 × .1 = .01

6, 1 → .2 × .2 = .04

.16

P(7 | 2) =

4. Calculate P(7|1st roll was a 2) = .1

$\frac{P(7 \wedge 2)}{P(2)} = \frac{.1 \times .1}{.1} = .1$

2 & 5 ⇒ 7

P(5) = .1

Ex. Cr.: Suppose Dr. Todd has a fun size bag of M&M candies containing five blue, three yellow, four orange, two red, and two green. If fifteen M&M's are eaten, then calculate the probability that there exists a remaining M&M when Dr. Todd leaves.

Stat 2610

Name Todd

Quiz 6a

Each problem is worth five points. For full credit circle answers and **show all your work.**

Use the probability distribution given below for questions one through four.

X	1	2	3	4	5	6
P(x)	0.1	0.2	.2	0.1	0.2	0.2

1. Calculate the mean value for one roll of the loaded die.

$1\times.1 + 2\cdot.2 + 3\times.2 + 4\cdot.1 + 5\cdot.2 + 6\cdot.2$

$\bar{x} \in (1,6)$

$1.0 - .8 = .2$

$= .1 + .4 + .6 + .4 + 1.0 + 1.2$

$= 3.7$

2. An experiment consists of rolling the loaded die two times and computing the sum. Give the sample space for this experiment and determine if the result is a discrete or continuous variable.

$\{2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$

3. Calculate the probability of getting a sum of seven rolling the loaded die two times and computing the sum or P(7) = .16

$1+6 \Rightarrow .1\times.2 = .02$

$2+5 \Rightarrow .2\times.2 = .04$

$3+4 \Rightarrow .2\times.1 = .02$

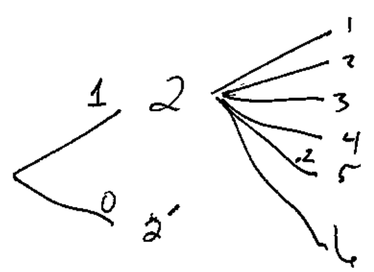
$4+3 \Rightarrow .1\times.2 = .02$

$5+2 \Rightarrow .2\times.2 = .04$

$6+1 = .2\times.1 = .02$

$.16$

4. When rolling the loaded die two times and computing the sum, calculate P(7|1st roll was a 2).



$= 2 \to 5 = 1.0\times.2 = .2$

Stat 2610 Name Todd F.

Quiz 7

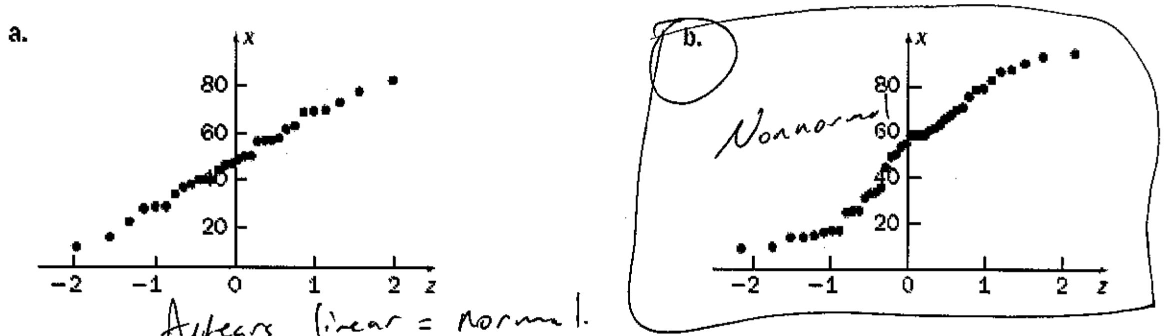
Each problem is worth five points. For full credit circle answers and **show all your work.**

1. Suppose X~B(20, 0.40). Calculate $P(X \leq 15)$= .9996829689 = binomial cdf(20, .4, 15)
Explain what this decimal represents.

This means 99.97 % of the time you'll expect to get 15 or fewer "successes" ~~at~~ of 20 trials when p(success) = .4.

Look@ binomial cdf (20, .4)

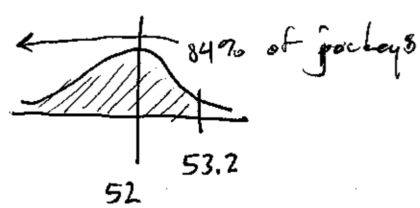
2. Identify the plot(s) below that suggest data are from a nonnormal distribution.



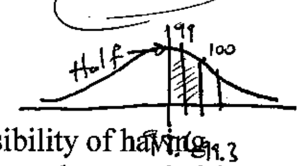
Appears linear = normal.

3. Jockeys in the United States and England work very hard to keep their weight down. Many participate in weightloss programs, carefully monitor their diet, and exercise regularly. The weight of a jockey is approximately normal with mean 52 kg and standard deviation 1.2 kg. Suppose a jockey is randomly selected. Calculate the probability, to four decimal places, that the jockey weighs more than 53 kg. 1 − normal cdf (−∞, 53) 52, 1.2) = .2023

normal cdf (53, ∞, 52, 1.2) = ~~.203~~ .2023



4. Human temperatures are normally distributed with mean oral temperature of 98.6F with a standard deviation of .7F. Calculate the probability, to four decimal places, that a human's temperature is between 99 and 100 degrees Fahrenheit? normal cdf (99, 100, 98.6, .7) = .2611



Ex. Cr.: Kerry & Todd are doing some family planning and considering the possibility of having three children. Using what you know about Kerry and Todd, binomial distributions, boys and girls (assume probability of boy is one half) then calculate the probability that exactly two of the three children are boys.

1/2 binomial pdf (1, .5, 1)

Stat 2610 Name Todd

Quiz 8

Each problem is worth five points. For full credit circle answers and **show all your work.**

1. Suppose X is a normal random variable with mean $\mu = 17.5$ and standard deviation $\sigma = 6$. A random sample of size $n = 25$ is selected from this population

When standardized scores are used $\bar{x} = 0$ & $\sigma = 1$

Calculate $P(15 < X < 19) =$

normalcdf (15, 19, 17.5, 6) = .2602

Calculate $P(15 < \bar{X} < 19) =$

normalcdf ($-2.08\overline{3}$, 1.25, 0, 1) = .8757

$z_{15} = \frac{15 - 17.5}{6/5} = -2.08\overline{3}$

$z_{19} = \frac{19 - 17.5}{6/5} = 1.25$

2. In attempting to flee from police, criminals sometimes barricade themselves inside a building and create a police standoff. The criminal is usually armed with a dangerous weapon and may hold hostages. Suppose the mean length of a police standoff, ending with some sort of resolution, is 6.5 hours with standard deviation 4 hours. A random sample of 35 police standoffs is selected.

a # between 0 & 1.

Calculate the probability that the sample mean for the 35 police standoffs will be greater than seven hours.

$z_7 = \frac{7 - 6.5}{4/\sqrt{35}} = .7395$

normalcdf (.7395, 999, 0, 1) = .2298

3. Dr. Todd has developed a new technique for ending police standoffs whereby he explains statistical theories to criminals armed with a dangerous weapon holding hostages (the criminal has the weapon and hostage – not Dr. Todd). Suppose the sample mean for 35 situations using Dr. Todd's new and improved technique is 5.4 hours. Is there evidence to suggest his new technique is better? No.

$z_{5.4} = \frac{5.4 - 6.5}{4/\sqrt{35}} = -1.6269$

invNorm (.025, 0, 1) = -1.95996

$-1.6269 \not< -1.95996$ ∴ The evidence suggests my new technique is NOT different from the traditional.

95% ∈ (−1.95996, 1.95996)

4. Our class mean score on March 1st, 2013 was 79.3%. Is that number a statistic or parameter?

Parameter because it represents the score from the population of Stat 2610 students.

Ex. Cr.: In our class there are 36 students and we will assume everyone is present since we're having a quiz today. If every person in class shakes the hand of every other person, then how many handshakes occur? Sorry, no tricks here – just shaking right hand to right hand, normal handshake.

36 students + 1 instructor = 37 people

Each shakes hands with the others = 36 handshakes

Each handshake involves 2 people

$\frac{37 \times 36}{2} = 666$ handshakes.

Stat 2610 Name Todd

Quiz 9

Each problem is worth five points. For full credit circle answers and **show all your work.**

1. BSU has thousands of prospective students come for campus tours every year. A new advertising campaign was developed to attract more math majors. In a random sample of 270 prospective students, 243 planned to major in mathematics. Find the sample proportion of prospective students who planned to major in mathematics.

$\frac{243}{270} = .9$

$\hat{p} = .9$

$s_x = \sqrt{\frac{.9(.1)}{270}} \cong .0183$

2. Calculate a 99% confidence interval for the true proportion of prospective students who plan to major in mathematics.

99% C.I. $= (\bar{x} - 2.58\, s_x,\ \bar{x} + 2.58\, s_x)$

$= (.9 - 2.58(.0183),\ .9 - 2.58(.0183))$

$= (.85,\ .95)$

$(.85279,\ .94721)$

$\boxed{\text{OR}}$ T Interval: $(.898,\ .902)$ on calculator

3. I found a 90% confidence interval for the true proportion of prospective studetns who want to be math majors is (.87, .93). Explain what this means.

This means I'm 90% certain that the true population ~~has~~ has between 87%-93% of students want to be math majors.

4. Why is a point estimate alone insufficient for providing a probabilistic estimate of a parameter?

A. Since a point estimate only estimates the parameter, it will never provide us with its value.
B. While the point estimate provides a good guess for the parameter, it is a single value and, for a continuous variable, the probability the parameter equals this single value is 0.
C. The calculation of the point estimate is too fraught with uncertainty to provide an accurate probability estimate.
D. A point estimate is too static to accurately estimate a dynamic parameter.

Ex. Cr.: This week Dr. Todd had a birthday. How old is he?

Stat 2610 Name ______________

Quiz 10

Each problem is worth five points. For full credit circle answers and **show all your work.**

1. The annual BSU Hardwater 'Swim' contest is held over a 1.7-mile course from the BSU boat house to the Hampton Inn. The 2011 winner was Julia Giesen in 7 minutes and 49 seconds. Before the race, a random sample of the water hardness (measured in inches of ice) along the race course was obtained, and the resulting information used to determine whether the race should be canceled. A mean water hardness factor, μ, of less than 6 inches is considered unsafe.

State the null and alternative hypotheses.

H_0: Ice is thick enough

$\mu \geq 6$

H_A: Ice is too thin.

$\mu < 6$

+2

2. Describe a Type I error in #1. Falsely reject Ho.

Claim ice is too thin when its really safe.

(Cancel contest unnecessarily.)

+2

3. Describe a Type II error in #1. Failing to reject Ho.

Claim ice is thick enough when its really ~~n~~ not safe.

(Hold contest on unsafe ice.)

4. For any hypothesis test, the amount of evidence required to overturn (reject) the null hypothesis can be expressed by:

+2 A. β

B. α

+1 C. the Type II error rate

D. λ

Ex. Cr.: In **TWO** WORDS (or less) which is worse, a Type I or Type II error?

Stat 2610 Name Todd

Quiz 11

Each problem is worth five points. For full credit circle answers and **show all your work.**

1. The professor wishes to discover if statistics students skip more classes than college students in general. Suppose he knows that college students skip 2% of their classes according to a large national data base and the skipping is normally distributed. He randomly samples a group of statistics students and out of 252 classes, the group skipped 7. Based on the sample, does it appear that ~~seniors~~ stats skip more than 2% of their classes? State the critical value (CV) and test statistic (TS) to four decimal places.

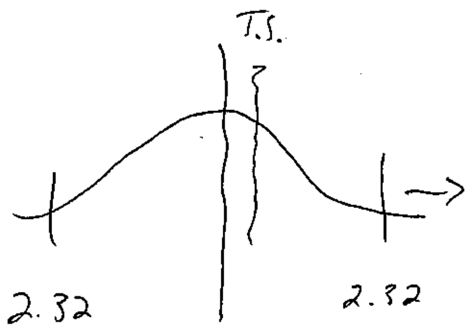
One-tail

$\hat{p} = \frac{7}{252}$

$= .0278$

Test Statistic: $z = \frac{.0278 - .02}{\sqrt{\frac{.02 \cdot .98}{252}}}$

$= .8844368668$



CV = +2.3263 TS = .8844

invnorm(.99) = +2.326347877

2. In #1, according to the data provided and your calculations, what should be the decision if you use $\alpha = 0.01$?

There is not sufficient evidence to conclude stats students skip more than college students in general.

3. The American Heart Association reports that 1.1 million people suffer a heart attack each year and 47% of them die. Early detection techniques, better diagnostic procedures, and specially trained personnel may save more of these victims. In a random sample of 688 heart attack victims, 288 could not be saved. Is there any evidence to suggest that the proportion of people who die from heart attacks has decreased? Letting $\alpha = 0.01$, compute the p value associated with this hypothesis test.

$\hat{p} = \frac{288}{688}$

$= .4186$

$= .4186046512$

$z = \frac{.4186 - .47}{\sqrt{\frac{.47 \cdot .53}{688}}} = -2.7013$

-2.2701285419

p-value: normalcdf(-99, -2.7013) = .0035

4. Letting $\alpha = 0.01$, suppose a friend calculated the test statistic to be 0.0345 in #3. What should be their conclusion for the American Heart Association:

There is evidence to suggest that the proportion of people who die from heart attacks has decreased.

There is no evidence to suggest that the proportion of people who die from heart attacks has decreased.

$\boxed{\text{My}}$ ~~data~~ calculations suggest.

p-value = normalcdf(-99, .0345)

$= .51 \not< .01$

+2

Ex. Cr.: How many more days will our class meet this semester (not counting the final exam)?

13 for me - (Would be ~~14~~ for students. but I'll be at MCTM.)

Stat 2610 Name Todd

Quiz 12

Each problem is worth five points. For full credit circle answers and **show all your work.**

1. A recent study was conducted in order to determine the curing efficiency (time to harden) of dental composites (resins for the restoration of damaged teeth) using two different types of lights. Independent random samples of lights were obtained and a certain composite was cured for 40 seconds. The depth of each cure (in mm) was measured using a penetrometer. The summary statistics can be found below:

	Sample size	Mean	Sample standard dev.
Halogen	10	μ_1 = 5.35 mm	0.07
LuxOMax	10	μ_2 = 4.9 mm	0.08

t-test

Assume the underlying populations are normal, with equal variances. ~~z-test~~

want $\mu_1 < \mu_2$

The maker of the LuxOMax lights claims that they produce a larger cure depth after 40 seconds than Halogen light. Is there evidence to support this claim?

~~No!~~ ~~No~~! ~~Yes~~, $p=1$ that LuxOMax < Halogen

No, $p = 3.76\times10^{-41}$ that $\mu_2 > \mu_1$ Halogen > Lux.

(LuxOMax) (Halogen)

2. During the last decade, concert ticket prices have risen sharply. In 2004, the mean ticket price for the 100 biggest tours was $52.39. Suppose independent random samples of ticket prices for summer 2005 concerts by the Rolling Stones and Coldplay were obtained. The data are summarized below:

	Sample size	Sample mean	Population standard dev.
Rolling Stones μ_1	12	$320.50	52.50
Coldplay μ_2	10	$265.90	68.60

z-test z-test

Assume normality and equal population variances. Use $\alpha = 0.001$.

Is there any evidence to suggest that the population mean concert ticket price is greater for the Rolling Stones than for Coldplay? $\mu_1 > \mu_2$

$p = .0195 \not< .001$ so No, there is not enough evidence to show Stones tix cost more than Coldplay.

3. To study the effect of soothing music on a person's blood pressure, two random samples of 220 adults were drawn. One sample (sample 1) listened to soothing music for 5 minutes prior to having their blood pressure taken, while the other sample (sample 2) sat in silence. From previous studies, it was found that both populations have a standard deviation of 39.18. The average systolic blood pressure from the music sample was 114.5. The average systolic blood pressure from the silent sample was 122.8. Construct a 95% confidence interval on the difference in population mean blood pressures.

Music = μ_1 $(-15.62, -.98)$

Silence = μ_2

4. Explain what the confidence interval in #3 means.

I am 95% certain that the real difference in blood pressures is between -15.62 and $-.98$ (Music accounts for a drop of 1 to 16 mm of Hg.)

Ex. Cr.: Find the next number in the sequence: 1, 2, 4, 7, 11, 14

Stat 2610 Name Todd F.

Quiz 13

Each problem is worth five points. For full credit circle answers and **show all your work**.

1. Two hospitals share responsibility for a very poor area of a major city. Both are required to treat patients regardless of their ability to pay. Hospital 1 claims that their ER treats a higher percentage of non-paying patients than hospital 2. From a random sample of 200 ER cases from hospital 1, 122 were unable to pay. An independent sample of 195 ER cases from hospital 2 has 118 that were unable to pay. Does it appear that hospital 1 has a valid complaint? Calculate the correct p value. Using α = .05, make a conclusion about the claim made by Hospital 1.

2-Prop Z-Test

$\hat{p}_1 = .61$

$\hat{p}_2 = .605$

$p = .46 \nless .05$

∴ Hospital 1 has nothing about which to complain; they're not any worse off than H.2.

2. Construct a 99% confidence interval on the population difference in proportion of non-paying patients.

2-prop Z-Int: (−.1213, .1315)

3. In 2011, Ford increased the Shelby GT 500's stock configuration to 550 horsepower. A modification performed by Shelby American was later introduced called the Super Snake package which claimed to increase horsepower an additional 120 horsepower. To check and see if the chip actually does increase horsepower, we sample 6 stock 2011 Shelby GT 500's and recorded each vehicle's horsepower (the results appear below):

Car #	1	2	3	4	5	6
Stock HP	545	561	555	548	553	551

Next, technicians convert each of the 6 vehicles' (all convertibles) and then record the horsepower of each (the results appear below):

Car #	1	2	3	4	5	6
Mod Hp	665	680	678	675	673	673

Does it appear that there is at least an average 120 horsepower increase *associated* with the modifications? Calculate the correct p-value and decision below. (Use α = .05).

T-Test $t = 1.5343$

$p = .09 \nless .05$

∴ Not ~~completely~~ enough evidence to be certain that the modifications increased by 120 hp.

4. Find a 95% confidence interval on the population mean horsepower difference associated with the car modifications.

(118.76, 124.9)

T-Interval

Ex. Cr.: If Dr. Todd had a Shelby GT 500, what color would it be? Car:

Stripes:

Stat 2610 Name Todd

Quiz 14

Each problem is worth five points. For full credit circle answers and **show all your work.**

1. I found the following student favorite numbers and grade percentages from my Math 1011 class:

ID #	222	22	21	21	28
Grade %	91.3	88.5	62	65.5	82.9

Construct a linear regression equation, explain what the coefficients mean. Grade ID

$y = .0854x + 72.6743$

.0854 represents an increase of .0854 for every increase of 1 in ID #.

77.6743 is the

2. Report the r-value for the equation you found in #1. Explain what this value tells you about the data.

r = .5657 tells me there is not a very strong relationship between ID and grade. (We might not expect a strong relationship.)

3. I found the following information for body weight (in pounds) and calories burned by a person walking three miles per hour:

Weight	100	120	150	170	200	220
Calories	2.7	3.2	4.0	4.6	5.4	5.9

I constructed a linear regression equation and found $y=0.027x - 0.017$ with an r value of 0.9998. Explain what: * 0.027 means: if you add one pound of weight you will burn an extra .027 calories

* -0.017 means: Someone weighing 0 lbs would burn -.017 calories (i.e. you can't have a zero pound person).

* 0.9998 means: there is a very strong relationship between weight and calories burned.

4. In 2012 I weighed 165 pounds. Calculate how many calories (to one decimal point) I would have burned walking three miles per hour. 4.4349 calories

In 2012 Greta weighed 25 pounds. Calculate how many calories (to one decimal point) she would have burned walking three miles per hour.

.6576 calories

Ex. Cr.: In class Dr. Todd claimed your answer in #4 is likely to be more accurate for me than for Greta. Why? Interpolation and extrapolation.