Math 1530 Final Exam Fall 2011

Name _____
Section # _____
Instructor _____

There are five possible responses to each of the following multiple choice questions. There is only one "BEST" answer. Be sure to read all possible choices before selecting your answer. You may mark on this examination. You can use a calculator but a calculator manual cannot be used.

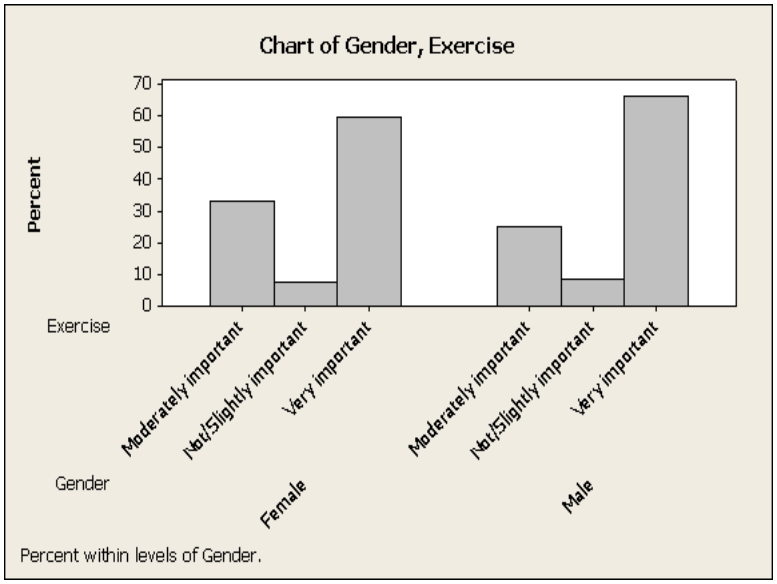
Form A

1. Which of these questions from the Fall 2011 MATH1530 class survey produced variables that are categorical?

   i. Would you rather be able to fly or be invisible?
   ii. How important is exercise or increased activity to you in your pursuit of better health?
   iii. On average, how many hours per week will you be working in a paid job this semester?
   iv. What is your shoe size?
   v. What do you typically drink with dinner? (Water, Soda, Milk, Alcohol, Tea, Others)

   (A) i; ii (B) i; ii; v (C) i; ii; iv; v (D) iii; iv (E) All of these questions.

Use the following for the next 2 questions. The figure below represents the class survey question on the opinion on the importance of exercise to health by gender. The question was "How important is exercise or increased activity to you in your pursuit of better health?"



2. Approximately what percent of the females responded "Very important" to the question?

   (A) About 60% (B) About 66% (C) About 33% (D) About 7% (E) Unable to determine from the figure.

3. Which of the following is a true statement?

   (A) The bar graphs are bimodal.
   (B) There is a gap between the bar graphs which means we may have outliers.
   (C) It appears that both graphs are skewed left.
   (D) Side-by-side boxplots would be a better display to compare the responses of the females and the males.
   (E) Overall, it appears that a larger percent of males believe that exercise or increased activity is very important in the pursuit of better health than females do.

4. The table below represents the student responses from the class survey to the question "What do you typically drink with dinner?"

Drink with Dinner	Counts
Alcohol	17
Milk	76
Soda	209
Tea	161
Water	363
Other	53

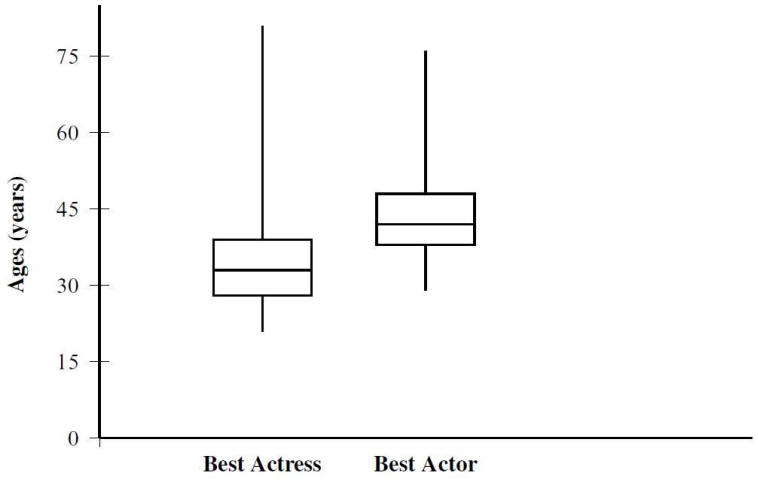
Which type of graph is appropriate for these data?

(A) Histogram (B) Stem plot (C) Scatterplot (D) Boxplot (E) Bar chart

5. A financial analyst needs to help a client make investment decisions between stock and housing market. He would like to show the trends of growth for these two investment sectors in the US since year 2000. Which type of graph is appropriate for this purpose?

(A) Side-by-side bar graph (B) side-by-side box plot (C) Time plot (D) Histograms (E) Scatterplot

Use the following for the next 2 questions. Here are the boxplots of the ages of all Oscar winners for the Best Actress and Best Actor.



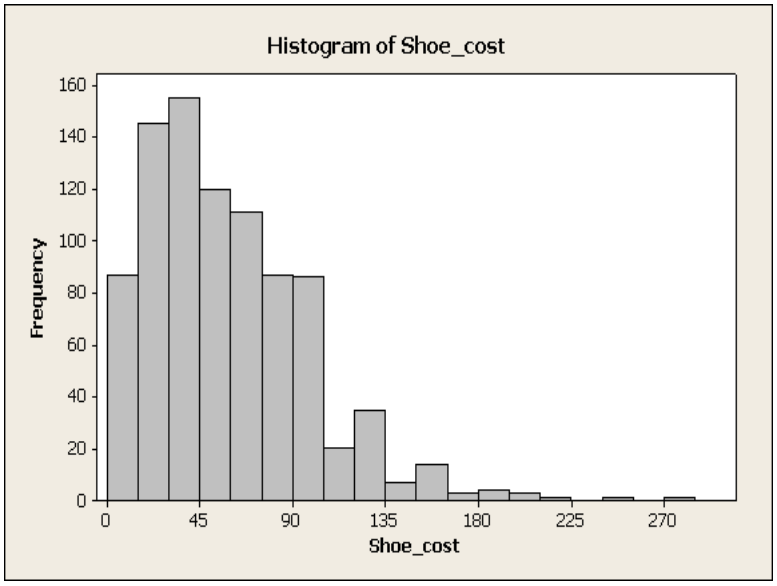
6. This plot shows that

(A) there is less diversity in age among the Best Actresses than among the Best Actors.
(B) the Best Actresses are generally younger than the Best Actors.
(C) the oldest person winning a Best Actor/Actress award was a man.
(D) the youngest man winning a Best Actor award is younger than the youngest woman winning a Best Actress award.
(E) the margin of error in age among the Best Actresses is larger than the margin of error in age among the Best Actors.

7. The main advantage of boxplots over stemplots and histograms is

(A) boxplots show more detail about the shape of the distribution.
(B) boxplots use the five-number summary, whereas stemplots and histograms use the mean and standard deviation.
(C) boxplots show skewed distributions, whereas stemplots and histograms show only symmetric distributions.
(D) boxplots show symmetric distributions, whereas stemplots and histograms show only skewed distributions.
(E) boxplots make it easy to compare several distributions, as in this example.

Use the following for the next 3 questions. The histogram and descriptive statistics below summarize the student responses from the class survey to the question "How much (in dollars) did your last pair of shoes cost?"



Variable	N	Mean	SE Mean	StDev	Minimum	Q1	Median	Q3	Maximum
Shoe_cost	880	57.00	1.30	38.65	1.00	27.00	50.00	80.00	270.00

8. Which of the following best describes the shape of the distribution?

   (A) The data are bimodal

   (B) The data seems to be somewhat symmetric.

   (C) The data are strongly skewed left with several outliers.

   (D) The data are strongly skewed right with several outliers.

   (E) There is only one outlier and its value is \$270.

9. About what percent of the students paid at most \$80.00 for a pair of shoes?

   (A) 75% (B) 50% (C) 25% (D) 80/880 or 9% (E) $z = \dfrac{80 - 57}{38.65} = 0.6$ (Area under Normal Curve = 28%)

10. Which of the following numerical measures should be used to describe this data?

    (A) $\bar{x} = 57$, $s = 38.65$.

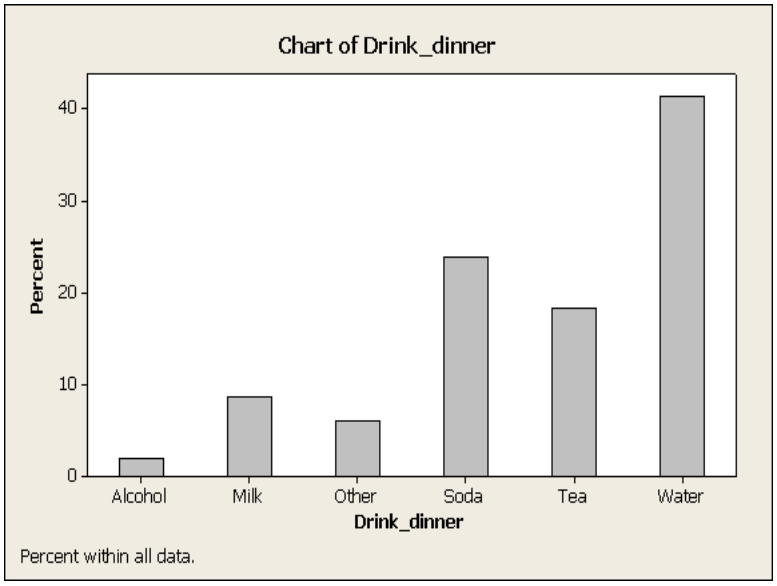
    (B) Min=1, Q_1= 27, $\bar{x} = 57$, Q_3 = 80, Max=270.

    (C) Min=1, Q_1= 27, Median = 50, Q_3 = 80, Max=270.

    (D) Median = 50, $s = 38.65$.

    (E) Median = 50, $\bar{x} = 57$.

11. From the Fall MATH1530 class survey students were asked to choose one of the listed responses to the question "What do you typically drink with dinner?" The bar graph below displays the distribution of dinner drink.



Which of the following is an accurate description of the graph?

(A) The bar graph is skewed to the right.

(B) The bar graph is skewed to the left.

(C) It appears that a majority of students responding to the survey drink water with dinner.

(D) The center of the graph is approximately "Soda".

(E) The bar graph is bimodal and the mode of the data is "Soda".

Use the following for the next 2 questions. The level of various substances in the blood is known to influence our health. Here are measurements of the level of phosphate in the blood of a patient, in milligrams of phosphate per deciliter of blood, made on 9 consecutive visits to a clinic: 5.6 5.2 4.6 4.9 5.7 6.4 5.9 6.7 4.2

12. What is the mean level of phosphate for the 9 clinic visits?

(A) 6.15 milligrams of phosphate per deciliter (C) 5.6 milligrams of phosphate per deciliter

(B) 5.47 milligrams of phosphate per deciliter (D) 4.8 milligrams of phosphate per deciliter

(E) 6.4 milligrams of phosphate per deciliter

13. What is the median level of phosphate for the 9 clinic visits?

(A) 5.6 milligrams of phosphate per deciliter (C) 5.7 milligrams of phosphate per deciliter

(B) 5.65 milligrams of phosphate per deciliter (D) 6.4 milligrams of phosphate per deciliter

(E) 6.15 milligrams of phosphate per deciliter

14. There are two major tests of readiness for college, the ACT and SAT. SAT scores are reported on a scale from 400 to 1600. The distribution of SAT scores for more than 1 million students in a recent high school graduating class was roughly Normal with mean $\mu = 1026$ and standard deviation $\sigma = 209$. What SAT scores make up the top 10% of all scores?

(A) 758 and lower (B) 758 and higher (C) 1444 and higher (D) 1047 and higher (E) 1294 and higher

15. Which of the following statements is correct about the correlation coefficient?

(A) The correlation coefficient equals the proportion of times two variables lie on a straight line.

(B) The correlation coefficient will be +1.0 only if all the data lie on a perfectly horizontal straight line.

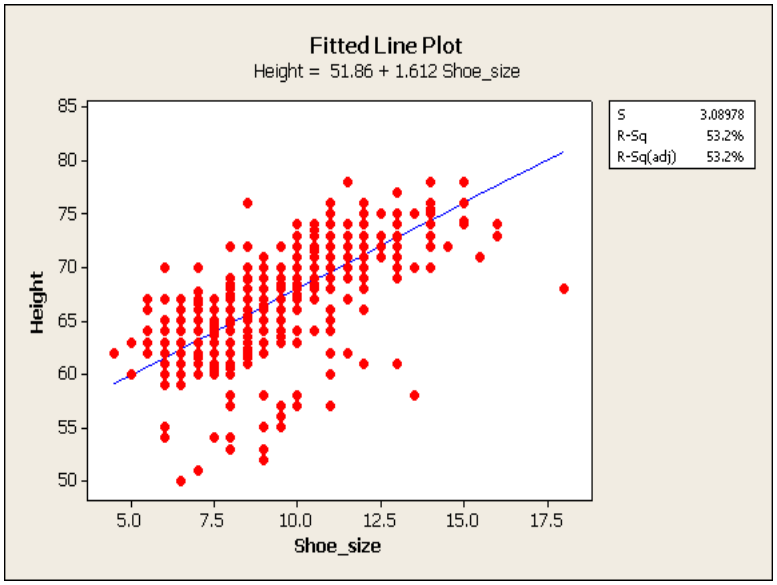
(C) The correlation coefficient always lies between -1.0 and +1.0 inclusive.

(D) The correlation coefficient measures the fraction of outliers that appear in a scatter plot.

(E) The correlation coefficient is a measure of the direction and strength of linear relationship between any two variables

Use the following for the next 3 questions. Can we predict the height (in inches) of a student by knowing their shoe size? The observations and least-squares regression line appear in the scatter plot. The correlation between the two variables is $r = 0.73$ and the least-squares regression line for predicting the *Height* (in inches) of a student from their *Shoe Size* is

$$\text{Height} = 51.86 + 1.612 \times \text{ Shoe Size}\ .$$



16. Which of the following best describes the relationship between shoe size and height?

(A) The association is very weak between shoe size and height.

(B) It does not make any sense to fit a regression model since the shoe size only takes on a few values.

(C) The average height is around 68 inches and the average shoe size is about 10.

(D) There seems to be a negative linear relationship between shoe size and height.

(E) There seems to be a positive linear relationship between shoe size and height.

17. Which of the following is the correct interpretation of the slope of the regression equation?

(A) Since the correlation is 0.73, height increases by about 73% on the average.

(B) As height increases, the shoe size increases by about 1.612 inches on the average.

(C) For every one shoe size increase, height increases by about 1.612 inches on the average.

(D) For every one size increase of shoe length, height increases by 51.86 inches on the average.

(E) Height increases by about 1.612 inches on the average.

18. Use the regression equation to predict the height of a student whose shoe size is 8.

(A) 64.76 in. (B) 8 (C) 1.612×8 (D) 51.86 in. (E) Any value between 54 and 73 inches.

19. At a local health club, a researcher samples 75 people whose primary exercise is cardiovascular and 75 people whose primary exercise is strength training. The researcher's objective is to assess the effect of type of exercise on cholesterol. Each subject reported to a clinic to have his or her cholesterol measured. The subjects were unaware of the purpose of the study, and the technician measuring the cholesterol was not aware of the subjects type of exercise. This is an example of

    (A) an observational study. (C) a double blind experiment.

    (B) a matched pairs experiment. (D) a stratified random sample.

    (E) a completely randomized experiment.

20. A study attempts to determine whether a football filled with helium when kicked travels farther than one that is filled with air. Each subject kicks twice once with a football filled with helium and once with a football filled with air. The order of the type of football kicked is randomized. This is an example of

    (A) a double blind experiment. (C) a stratified random sample.

    (B) an observational study. (D) a matched pairs experiment.

    (E) a completely randomized experiment.

    Use the following for the next 3 questions. The class survey asked for gender type and "How important is exercise or increased activity to you in your pursuit of better health?" The distribution of counts is shown below in the table. Choose a student at random from this group.

Tabulated statistics: Gender, Exercise
Rows: Gender Columns: Exercise

	Moderately important	Not/Slightly important	Very important	All
Female	183	41	327	551
Male	83	28	218	329
All	266	69	545	880

Cell Contents: Count

21. The probability that the student is a female and thinks that exercise or increased activity is not or only slightly important in pursuit of better health is

    (A) 41/69 or .5942 (B) 41/551 or .0744 (C) 41/880 or .0466 (D) 551/880 or .6261 (E) 69/880 or 0.0784

22. The conditional probability that the student was a female, given that the student thinks that exercise or increased activity is not or only slightly important in pursuit of better health is

    (A) 41/69 or .5942 (B) 41/551 or .0744 (C) 41/880 or .0466 (D) 551/880 or .6261 (E) 69/880 or 0.0784

23. The conditional probability that the student thinks that exercise or increased activity is not or only slightly important in pursuit of better health, given that the student was a female, is

    (A) 41/69 or .5942 (B) 41/551 or .0744 (C) 41/880 or .0466 (D) 551/880 or .6261 (E) 69/880 or 0.0784

24. Suppose that a statistics class is being given an 8 question multiple choice quiz; there are 4 choices for each question with only 1 correct answer. If I. M. Lucky guesses on each question, what is the probability that he gets at most 4 questions correct?

    (A) 0.03 (B) 0.09 (C) 0.97 (D) 0.50 (E) 0.11

25. The amount of money college students spend each semester on textbooks is normally distributed with a mean of \$195 and a standard deviation of \$20. Suppose you take a random sample of 100 college students from this population. There would be a 68% chance that the sample mean ($\bar{x}$) amount spent on textbooks would be between:

    (A) \$191 and \$199. (B) \$193 and \$197. (C) \$175 and \$215. (D) \$155 and \$235. (E) $195 \pm (.68)(20/\sqrt{100})$

Use the following to answer the next 3 questions. Suppose that the population of the scores of all high school seniors that took the SAT-M (SAT math) test this year follows a normal distribution, with unknown mean μ and a standard deviation of $\sigma = 80$. A simple random sample of 100 high school seniors that took the SAT-M test this year is taken. The mean score of these 100 students is 512.

26. A 99% confidence interval for μ is

(A) $(496, 528)$ (B) $(491, 533)$ (C) $(504, 520)$ (D) $(499, 525)$ (E) $510, 514$

27. Which of the following best interprets the above confidence interval?

(A) The probability that the average SAT-M score of all high school seniors this year falls in the confidence interval is 99%.

(B) We are 99% confident that all the sample means will be within the calculated confidence interval.

(C) We are 99% confident that the average SAT-M score of all high school seniors in the past is within the calculated confidence interval.

(D) We are 99% confident that the average SAT-M score of all high school seniors this year is within the calculated confidence interval.

(E) 99% of all high school seniors had SAT-M scores within the calculated confidence interval.

28. If we take a simple random sample of 200 high school seniors that took the SAT-M test this year, which of the following is correct?

(A) The 99% confidence interval for μ would be exactly the same.

(B) The 99% confidence interval for μ would be wider.

(C) The 99% confidence interval for μ would be narrower.

(D) The 99% confidence interval for μ would have the same width but the center would be different.

(E) None of the above is correct.

29. A study published in the *New England Journal of Medicine* (Aug. 2001) suggested that it's dangerous to enter a hospital in Ontario, Canada on a weekend. Researchers tracked over 4 million emergency admissions to hospitals over a 10-year period and found that patients admitted on weekends had a much higher risk of death than those who went to the emergency room on weekdays. The researchers said the difference in death rates was "statistically significant". What does this mean?

(A) The null hypothesis is true.

(B) The P-value of the test must have been large.

(C) Stay away from the emergency room on the weekends since it is causing deaths.

(D) The difference in death rates was important.

(E) The difference in death rates is higher than they would expect from sampling variability.

Use the following for the next 4 questions. The results from Spring 2011 survey show that 30% of ETSU students have posted videos on YouTube. The Fall 2011 Math 1530 survey asked "Have you ever posted a video on YouTube? " The class survey revealed that 292 of the 874 students who responded to this question said Yes. Suppose we are interested in the proportion of all current ETSU students who have ever posted a video. Assume the students who responded to this semesters survey represent a random sample of all ETSU students.

30. What is the population of interest in this survey?

    (A) All current ETSU students.

    (B) All current ETSU students who have ever posted a video.

    (C) The 874 students who responded to this question.

    (D) The people who conducted the survey.

    (E) The proportion of students that answered yes to this question.

31. What is the parameter to be estimated?

    (A) All current ETSU students.

    (B) 30%

    (C) $292/874 = 33.4\%$

    (D) The 874 students who responded to this question.

    (E) The proportion of all current ETSU students who have ever posted a video.

32. Does the Fall 2011 Math 1530 survey give evidence to conclude that more than 30% of all current ETSU students who have ever posted a video? The hypotheses for a test to answer this question are

    (A) $H_0 : \hat{p} = 0.3, H_a : \hat{p} > 0.3$ (C) $H_0 : p = 0.3, H_a : p > 0.3$

    (B) $H_0 : p = 0.3, H_a : p < 0.3$ (D) $H_0 : \bar{x} = 0.3, H_a : \bar{x} < 0.3$

    (E) $H_0 : \bar{x} = 0.3, H_a : \bar{x} > 0.3$

33. The P-value for the previous test is

    (A) 0.1133 (B) .0166 (C) .9861 (D) 0.0139 (E) .9834

34. The spring 2010 Math 1530 survey found that the proportion of students who believe in heaven to be about 0.86. We would like to know if current ETSU students have a different belief in heaven than what the 2010 student survey found. The hypotheses for a test to answer this question are

$$H_0 : p = 0.86, H_a : p \neq 0.86.$$

    Which is a correct description of the Type I error?

    (A) We decide that the proportion of all current ETSU students who believe in heaven is different from 86% but actually the proportion is 86%.

    (B) We decide that the proportion of all current ETSU students who believe in heaven is 86% but actually the proportion is different from 86%.

    (C) We decide that the proportion of all current ETSU students who believe in heaven is higher than 86% but actually the proportion is 86%.

    (D) We decide that the proportion of all current ETSU students who believe in heaven is lower than 86% but actually the proportion is 86%.

    (E) There is no Type I error if the sample proportion is close to 86%.

Use the following for the next 3 questions. To check whether a generic drug differs significantly from the "reference" drugs that it imitates, a researcher conducted a study with twenty healthy non-smoking male subjects. In the study, each man received both of the generic drug and one of its references with an intermediate washout period. The variable of interest is the difference in absorption of the reference drug and the generic drug.

35. The factor in this study is

    (A) the extent to which the symptom was reduced.

    (B) the use of randomization and the fact that this was a comparative study.

    (C) the type of drug

    (D) the absorption of the reference drug and the generic drug.

    (E) the difference in absorption of the reference drug and the generic drug.

36. The response variable in this study is

    (A) the extent to which the symptom was reduced.

    (B) the use of randomization and the fact that this was a comparative study.

    (C) the type of drug

    (D) the absorption of the reference drug and the generic drug.

    (E) the difference in absorption of the reference drug and the generic drug.

37. To perform the hypothesis testing, what analysis should we perform?

    (A) One sample t on the difference in absorption.

    (B) Two sample t on the absorption of the reference drug and the generic drug.

    (C) One sample z on the difference in absorption.

    (D) A Chi-square test of independence.

    (E) A regression model.

38. Statistics can help decide the authorship of literary works. Sonnets by a certain Elizabethan poet are known to contain an average of $\mu = 6.9$ new words (words not used in the poet's other works). Now a manuscript with 25 new sonnets has come to light, and scholars are debating whether it is the poet's work. The new sonnets contain an average of $\bar{x} = 8.78$ words not used in the poet's work. We expect poems by another author to contain new words, so to see if we have evidence that the new sonnets are not by our poet we test

    $$H_0 : \mu = 6.9 \;\; H_a : \mu > 6.9.$$

    Assume that the sonnets are a simple random sample from the population of sonnets. This condition is very important. The distribution of the number of new words is fairly symmetric with no outliers.

    Here is the Minitab output:

One-Sample T

Test of mu = 6.9 vs > 6.9

N	Mean	StDev	SE Mean	95% Lower Bound	T	P
25	8.7800	2.7000	0.5400	7.85612	3.48	0.001

    What do you conclude about the authorship of the new poems?

    (A) There is a .1% chance that the sonnets came from another author.

    (B) Since the P-value is small we fail to reject H_0.

    (C) 95% of these sonnets have at least 7.85612 new words.

    (D) We would conclude that there is strong evidence that these 25 sonnets come from a population with a mean number of new words that is equal to 6.9, and thus we have evidence that the new sonnets are from our poet.

    (E) We would conclude that there is strong evidence that these 25 sonnets come from a population with a mean number of new words that is larger than 6.9, and thus we have evidence that the new sonnets are not by our poet.

Use the following for the next 2 questions. How are the smoking habits of students related to their parents' smoking? Here are data from a survey of 5375 students in eight Arizona high schools. Students were asked the following questions.

- Do you smoke? YES NO
- Do any of your parents smoke? BOTH ONE NONE

Expected counts are printed below observed counts.

Parents smoke	Student smokes	Student does not smoke	Total
Both	400 332.49	1380 1447.51	1780
One	416 418.22	1823 1820.78	2239
None	188 253.29	1168 1102.71	1356
Total	1004	4371	5375

$$Chi - Sq = 37.566, DF = 2, P - Value = 0.000$$

39. The null hypothesis for the above test is

(A) The number of students who smoke is the same regardless of the smoking habits of their parents.

(B) The number of students who smoke is the different regardless of the smoking habits of their parents.

(C) Smoking behavior of students is associated with the smoking habits of their parents.

(D) Smoking behavior of students is independent of the smoking habits of their parents.

(E) The mean in the number of students who smoke is the same regardless of the smoking habits of their parents.

40. What is the correct conclusion of this analysis? (Use $\alpha = 0.05$.)

(A) Smoking behavior of students is definitely independent of the smoking behavior of their parents.

(B) Smoking behavior of students is definitely associated with the smoking habits of their parents. If parents smoke, adolescents are more likely to not smoke.

(C) Smoking behavior of students is definitely associated with the smoking habits of their parents. If parents smoke, adolescents are more likely to smoke.

(D) There is no association what so ever between the smoking habits of parents and adolescents.

(E) The test is inconclusive because the number of degrees of freedom is 2.

Use the following for the next 2 questions. Based on the class survey, we want to know if there is good evidence that on average all female ETSU students spend less money on shoes than all male ETSU students. Assume that the students that responded to the survey represent all ETSU students. From the survey, we collect the information of gender and the cost of the last pair of shoes. The statistics are

Gender	N	Mean	StDev	SE Mean
Female	551	47.1	34.4	1.5
Male	329	73.6	39.7	2.2

41. To perform the hypothesis testing, what analysis should we conduct?

    (A) A Chi-square test of independence.

    (B) One sample z on the difference in the average shoe cost of female and male students.

    (C) One sample t on the difference in the average shoe cost of female and male students.

    (D) Two sample t on the cost of the last pair of shoes.

    (E) A regression model.

42. The appropriate analysis was performed. The results show a P-value of almost 0, the test statistic of -10, and the number of degrees of freedom of 644. Which of the following options answers the research question? Use $\alpha = 0.05$.

    (A) There is a mistake in the analysis. The difference in the means of the two groups is $47.1 - 73.6 = -\$26.5$ so the test statistic must be somewhere around -26.5.

    (B) The P-value is so small that we will reject the null hypothesis. There is strong evidence that on average all female ETSU students spend the same amount of money on shoes as all male ETSU students.

    (C) The P-value is so small that we will reject the null hypothesis. There is strong evidence that on average all female ETSU students spend more money on shoes than all male ETSU students.

    (D) The P-value is so small that we will reject the null hypothesis. There is strong evidence that each female ETSU student spend less money on shoes than each male ETSU student.

    (E) The P-value is so small that we will reject the null hypothesis. There is strong evidence that on average all female ETSU students spend less money on shoes than all male ETSU students.

Binomial Probability Table

		p											
n	x	.01	.05	.10	.15	.20	.25	.30	1/3	.35	.40	.45	.50
1	0	0.9900	0.9500	0.9000	0.8500	0.8000	0.7500	0.7000	0.6667	0.6500	0.6000	0.5500	0.5000
	1	0.0100	0.0500	0.1000	0.1500	0.2000	0.2500	0.3000	0.3333	0.3500	0.4000	0.4500	0.5000
2	0	0.9801	0.9025	0.8100	0.7225	0.6400	0.5625	0.4900	0.4444	0.4225	0.3600	0.3025	0.2500
	1	0.0198	0.0950	0.1800	0.2550	0.3200	0.3750	0.4200	0.4444	0.4550	0.4800	0.4950	0.5000
	2	0.0001	0.0025	0.0100	0.0225	0.0400	0.0625	0.0900	0.1111	0.1225	0.1600	0.2025	0.2500
3	0	0.9703	0.8574	0.7290	0.6141	0.5120	0.4219	0.3430	0.2963	0.2746	0.2160	0.1664	0.1250
	1	0.0294	0.1354	0.2430	0.3251	0.3840	0.4219	0.4410	0.4444	0.4436	0.4320	0.4084	0.3750
	2	0.0003	0.0071	0.0270	0.0574	0.0960	0.1406	0.1890	0.2222	0.2389	0.2880	0.3341	0.3750
	3	0.0000	0.0001	0.0010	0.0034	0.0080	0.0156	0.0270	0.0370	0.0429	0.0640	0.0911	0.1250
4	0	0.9606	0.8145	0.6561	0.5220	0.4096	0.3164	0.2401	0.1975	0.1785	0.1296	0.0915	0.0625
	1	0.0388	0.1715	0.2916	0.3685	0.4096	0.4219	0.4116	0.3951	0.3845	0.3456	0.2995	0.2500
	2	0.0006	0.0135	0.0486	0.0975	0.1536	0.2109	0.2646	0.2963	0.3105	0.3456	0.3675	0.3750
	3	0.0000	0.0005	0.0036	0.0115	0.0256	0.0469	0.0756	0.0988	0.1115	0.1536	0.2005	0.2500
	4	0.0000	0.0000	0.0001	0.0005	0.0016	0.0039	0.0081	0.0123	0.0150	0.0256	0.0410	0.0625
5	0	0.9510	0.7738	0.5905	0.4437	0.3277	0.2373	0.1681	0.1317	0.1160	0.0778	0.0503	0.0313
	1	0.0480	0.2036	0.3280	0.3915	0.4096	0.3955	0.3601	0.3292	0.3124	0.2592	0.2059	0.1562
	2	0.0010	0.0214	0.0729	0.1382	0.2048	0.2637	0.3087	0.3292	0.3364	0.3456	0.3369	0.3125
	3	0.0000	0.0011	0.0081	0.0244	0.0512	0.0879	0.1323	0.1646	0.1811	0.2304	0.2757	0.3125
	4	0.0000	0.0000	0.0005	0.0022	0.0064	0.0146	0.0283	0.0412	0.0488	0.0768	0.1128	0.1562
	5	0.0000	0.0000	0.0000	0.0001	0.0003	0.0010	0.0024	0.0041	0.0053	0.0102	0.0185	0.0313
6	0	0.9415	0.7351	0.5314	0.3771	0.2621	0.1780	0.1176	0.0878	0.0754	0.0467	0.0277	0.0156
	1	0.0571	0.2321	0.3543	0.3993	0.3932	0.3560	0.3025	0.2634	0.2437	0.1866	0.1359	0.0938
	2	0.0014	0.0305	0.0984	0.1762	0.2458	0.2966	0.3241	0.3292	0.3280	0.3110	0.2780	0.2344
	3	0.0000	0.0021	0.0146	0.0415	0.0819	0.1318	0.1852	0.2195	0.2355	0.2765	0.3032	0.3125
	4	0.0000	0.0001	0.0012	0.0055	0.0154	0.0330	0.0595	0.0823	0.0951	0.1382	0.1861	0.2344
	5	0.0000	0.0000	0.0001	0.0004	0.0015	0.0044	0.0102	0.0165	0.0205	0.0369	0.0609	0.0938
	6	0.0000	0.0000	0.0000	0.0000	0.0001	0.0002	0.0007	0.0014	0.0018	0.0041	0.0083	0.0156
7	0	0.9321	0.6983	0.4783	0.3206	0.2097	0.1335	0.0824	0.0585	0.0490	0.0280	0.0152	0.0078
	1	0.0659	0.2573	0.3720	0.3960	0.3670	0.3115	0.2471	0.2048	0.1848	0.1306	0.0872	0.0547
	2	0.0020	0.0406	0.1240	0.2097	0.2753	0.3115	0.3177	0.3073	0.2985	0.2613	0.2140	0.1641
	3	0.0000	0.0036	0.0230	0.0617	0.1147	0.1730	0.2269	0.2561	0.2679	0.2903	0.2918	0.2734
	4	0.0000	0.0002	0.0026	0.0109	0.0287	0.0577	0.0972	0.1280	0.1442	0.1935	0.2388	0.2734
	5	0.0000	0.0000	0.0002	0.0012	0.0043	0.0115	0.0250	0.0384	0.0466	0.0774	0.1172	0.1641
	6	0.0000	0.0000	0.0000	0.0001	0.0004	0.0013	0.0036	0.0064	0.0084	0.0172	0.0320	0.0547
	7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0002	0.0005	0.0006	0.0016	0.0037	0.0078
8	0	0.9227	0.6634	0.4305	0.2725	0.1678	0.1001	0.0576	0.0390	0.0319	0.0168	0.0084	0.0039
	1	0.0746	0.2793	0.3826	0.3847	0.3355	0.2670	0.1977	0.1561	0.1373	0.0896	0.0548	0.0312
	2	0.0026	0.0515	0.1488	0.2376	0.2936	0.3115	0.2965	0.2731	0.2587	0.2090	0.1569	0.1094
	3	0.0001	0.0054	0.0331	0.0839	0.1468	0.2076	0.2541	0.2731	0.2786	0.2787	0.2568	0.2187
	4	0.0000	0.0004	0.0046	0.0185	0.0459	0.0865	0.1361	0.1707	0.1875	0.2322	0.2627	0.2734
	5	0.0000	0.0000	0.0004	0.0026	0.0092	0.0231	0.0467	0.0683	0.0808	0.1239	0.1719	0.2187
	6	0.0000	0.0000	0.0000	0.0002	0.0011	0.0038	0.0100	0.0171	0.0217	0.0413	0.0703	0.1094
	7	0.0000	0.0000	0.0000	0.0000	0.0001	0.0004	0.0012	0.0024	0.0033	0.0079	0.0164	0.0312
	8	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0002	0.0002	0.0007	0.0017	0.0039

CONFIDENCE LEVEL	*TAIL AREA*	z^*
80%	0.1000	1.282
90%	0.0500	1.645
95%	0.0250	1.960
96%	0.0200	2.054
98%	0.0100	2.326
99%	0.0050	2.576
99.5%	0.0025	2.807