

Name _____

Math 201 Exam I

Please work out each of the given problems. Credit will be based on the steps that you show towards the final answer. Show your work.

Problem 1 (4 Points Each) Answer the following true or false

- A. A researcher wants to see if GPAs are higher for female LTCC students than male LTCC students. Based on the fact that 45% of LTCC students are male, 45 male and 55 female LTCC students are surveyed. This is an example of stratified sampling.
- B. A unimodal histogram was constructed such that the mode for the survey was at 10. Then the majority of respondents gave an answer of 10.
- C. A box plot was created to exhibit the results of a survey. If the minimum and first quartile were both at the number 5. It can be concluded that at least 25% of the responses were the number 5.
- D. The first quartile, third quartile, median, variance, standard deviation, inter-quartile-range, and the coefficient of variation are considered statistics.
- E. If 50 randomly selected houses in the Tahoe area are looked at to see if they have a paved driveway, then the population of interest is the 50 houses that were selected.
- F. Let A be the event that a person is of Asian descent and B be the event that a person is of Chinese descent. Then A and B are dependent events.
- G. If the expected value for a five dollar raffle ticket is 0.85, then there is a 85% chance that the ticket will win.
- H. A survey is taken of 90 randomly selected Americans asking them, "Do you think congress should give up on trying to pass their health care bill?" The distribution of possible responses of the 90 Americans is an example of a binomial distribution.

Problem 2 (4 Points Each) Categorize these measurements associated with snow boarders last weekend who went to Heavenly according to level: nominal, ordinal, interval, or ratio.

- A. The weight of the snow boarder.
- B. How satisfied they were with the snow conditions: Very satisfied, somewhat satisfied, not satisfied, or completely disappointed.
- C. The time of day the boarder arrived.
- D. On a scale of 1 to 10, how experienced the boarder was. 1 means that this was the first time on the slopes and 10 means they are extremely experienced.
- E. The city where the boarder came from.

Problem 3 (20 Points) According to a recent Gallup poll, 70% of all Americans are cutting back on the amount they spend each week. If 16 randomly selected Americans are surveyed, what is the probability that at most 13 of them will answer that they are cutting back on the amount they spend each week?

Problem 6 (20 Points)

The table below shows data that was collected to look at pet ownership for Democrats and Republicans who own a single pet.

	Dog	Cat	Other	Total
Democrat	80	100	30	210
Republican	120	90	40	250
Total	200	190	70	460

- A. Find the probability that a randomly selected single pet owner will be a Republican.

- B. Find the probability that a randomly selected single pet owner will be a Democrat who owns a cat.

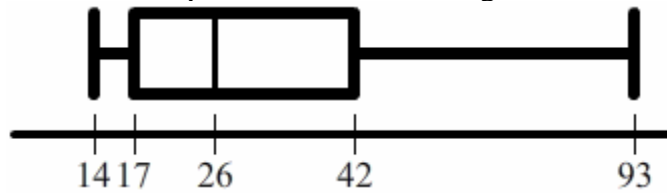
- C. Find the probability that a randomly selected single pet owner will be a dog owner or a Republican..

- D. Find the probability that a randomly selected single pet owner will be a cat owner given that that person is a Democrat.

- E. Let R be the event that a single pet owner is a Republican and C be the event that the single pet owner owns a cat. Are R and C independent? Back up your answers with the appropriate calculations.

Problem 7 (15 Points)

The box and whisker plot below shows the age distribution at LTCC.



- A. Approximately what age is at the 45th percentile?
- B. What is the probability that a randomly selected student will be between 26 and 93 years old?

Extra Credit: Write down one thing that your instructor can do to make the class better and one thing that you feel that the instructor should continue doing.

(Any constructive remarks will be worth full credit.)