

Elementary Statistics

Name: _____

Study Guide 16

Class: _____

Due Date: _____

Score: _____

Your solutions must be consistent with class notes & resources.

Be Neat, Organized, and No Work \Leftrightarrow No Points

1. Consider a binomial probability distribution with $n = 40$, $p = 0.8$, and x be the number of successes,

(a) (2 points) Find $P(x = 30)$ using the formula.

(a) _____

(b) (2 points) Find $P(x \leq 35)$

(b) _____

(c) (2 points) Find $P(x \geq 25)$

(c) _____

(d) (2 points) Find its mean and standard deviation. Round to one decimal place.

(d) _____

(e) (2 points) Use the rounded answers to find its usual range.

(e) _____

2. A student takes a multiple-choice test with 10 questions and guesses randomly at each answer. Each question has 5 choices with only one correct choice.

(a) (2 points) Find the probability that he/she gets exactly 3 correct answers using the formula.

(a) _____

(b) (2 points) Find the probability that he/she gets fewer than 3 correct answers.

(b) _____

(c) (2 points) Find the probability that he/she gets at least 3 correct answers.

(c) _____

(d) (2 points) Find the mean number of correct answers he/she can get. Round to a whole number.

(d) _____

(e) (2 points) Find the standard deviation for the number of correct answers that he/she can get. Round to a whole number.

(e) _____

(f) (2 points) Use the rounded answers from above to find the usual range for number of correct answers he/she can get.

(f) _____

3. The probability that a passenger with ticket show up for a flight is 0.9. An airline sells 142 tickets for a flight that has 125 seats.

(a) (2 points) Find the probability that exactly 125 passengers with tickets show up for this flight.

(a) _____

(b) (2 points) Find the probability that fewer than 125 passengers with tickets show up for this flight.

(b) _____

(c) (2 points) Find the probability that more than 125 passengers with tickets show up for this flight.

(c) _____

(d) (2 points) Find the probability that the number of passengers with tickets show up for this flight is from 120 to 125.

(d) _____

(e) (2 points) Find the mean number of passengers with ticket that show up for this flight. Round to a whole number.

(e) _____

(f) (2 points) Find the standard deviation for the number of passengers with ticket that show up for this flight. Round to a whole number.

(f) _____

(g) (2 points) Use the rounded answers from above to find the usual range for number of passengers with ticket that show up for this flight.

(g) _____

4. One-sixth of freshmen entering a large state university are out-of-state students. If the students are assigned at random to the dormitories, 180 to a building, using the exact values for p and q , what is the probability that in a given dormitory

(a) (2 points) at most 40 of them are from out of state.

(a) _____

(b) (2 points) at least 40 of them are from out of state.

(b) _____

(c) (2 points) at most one-fifth of them are from out of state.

(c) _____

(d) (2 points) at least two-fifteenths of them are from out of state.

(d) _____

(e) (2 points) Find the mean number of out of state students in a given dorm.

(e) _____

(f) (2 points) Find the standard deviation for the number of out of state students in a given dorm.

(f) _____

(g) (2 points) Find the usual range for number of out of state students in a given dorm.

(g) _____

Make yourself very familiar with all keywords.