

Table Number: _____

Group Name: _____

Group Members: _____

Binomial Probabilities

1. Suppose that 65% of the families in a town own computers, If ten families are surveyed at random,
 - a) What is the probability that at least five own computers? _____
(SHOW YOUR SET-UP – What is the TI command and arguments)

 - b) What is the expected number of families that own computers? _____
SHOW YOUR SET-UP AND WORK.

2. Ninety percent of a country's population are right-handed.
 - a) What is the probability that exactly 29 people in a group of 30 are right-handed? _____
(SHOW YOUR SET-UP – What is the TI command and arguments)

 - b) What is the expected number of right-handed people in a group of 30? _____
SHOW YOUR SET-UP AND WORK.

3. From the 2010 US Census we learn that 27.5% of US adults have graduated from college. Suppose we take a random sample of 12 US adults.
 - a) What is the probability that exactly six of them are college educated? _____
(SHOW YOUR SET-UP – What is the TI command and arguments)

 - b) What is the probability that six or fewer are college educated? _____
(SHOW YOUR SET-UP – What is the TI command and arguments)

4. In the 2010 census, we learn that 65% of all housing units are owner-occupied while the rest are rented. Suppose we take a random sample of 20 housing units.
 - a) What is the probability that exactly 15 of them are owner-occupied? _____
(SHOW YOUR SET-UP – What is the TI command and arguments)

 - b) What is the probability that more than 18 of them are owner-occupied? _____
(SHOW YOUR SET-UP AND WORK – What is the TI command and arguments)

5. Suppose that a new drug is effective for 65% of the participants in clinical trials. Suppose a group of 15 patients take this drug.
- a) What is the expected number of patients for whom the drug will be effective? _____
SHOW WORK PLEASE!
- b) What is the probability that the drug will effective for less than half of them? _____
- c) What is the probability that the drug will be effective for more than 75% of them?
6. Suppose that a committee has 10 members. The probability of any member attending a randomly chosen meeting is 0.9. The committee cannot do business if more than 3 members are absent. What is the probability that 7 or more members will be present on a given date?
SHOW WORK AND YOUR TI COMMAND AND ARGUMENTS. _____
7. During the 2014-2015 NBA (Basketball) season, LeBron James of the Cleveland Cavaliers had a free throw shooting percentage of 0.710. Assume that the probability LeBron makes any given free throw is fixed at 0.710 and that free throws are independent. SHOW ALL WORK FOR EACH QUESTION INCLUDING THE TI_COMMAND AND ARGUMENTS.
- a) If LeBron shoot 8 free throws in a game, what is the probability that he make at least 7 of them? _____
- b) If he shoots 80 free throws in the playoffs, what is the probability that he makes at least 70 of them? _____
- c) If he shoots 8 free throws in a game, what is the expected number of free throws that he will make? _____
- d) If he shoots 80 free throws in the playoffs, what is the standard deviation for the number of free throws he makes during the playoffs?
