

Practice 06

5.3 The Binomial Distribution

- 1) The probability of a success remains the same for each trial in a binomial experiment. 1) _____
A) True B) False
- 2) Is it true or false that the following is a binomial experiment or can be reduced to binomial experiments? Asking 500 people what brand of car they drive. 2) _____
A) True B) False
- 3) Compute the probability of X successes. Round to three decimal places. 3) _____
 $n = 4, X = 3, p = 0.1$
A) 0.111 B) 0.004 C) 0.996 D) 0.750
- 4) Determine the indicated probability for a binomial experiment with the given number of trials n and the given success probability p . 4) _____
 $n = 13, p = 0.3, P(\text{Fewer than } 4)$
A) 0.6543 B) 0.4206 C) 0.2025 D) 0.5794
- 5) A student takes a true-false test that has 15 questions and guesses randomly at each answer. Let X be the number of questions answered correctly. Find $P(13 \text{ or more})$ 5) _____
A) 0.0176 B) 0.9824 C) 0.0037 D) 0.0005
- 6) It is estimated that 30% of households own a riding lawn mower. A sample of 18 households is studied. What is the probability that no more than 3 of these own a riding lawn mower? 6) _____
A) 0.8354 B) 0.1646 C) 0.94 D) 0.0600
- 7) In a large bag of marbles, 40% of them are red. A child chooses 4 marbles from this bag. If the child chooses the marbles at random, what is the chance that the child gets exactly three red marbles? 7) _____
A) 0.346 B) 0.230 C) 0.256 D) 0.154
- 8) A student takes a 17-question, multiple-choice exam with four choices for each question and guesses on each question. Find the probability of guessing exactly 3 out of 17 correctly. 8) _____
A) 0.189 B) 0.176 C) 0.811 D) 0.250

- 9) A student takes a 6 question multiple choice quiz with 4 choices for each question. If the student guesses at random on each question, what is the probability that the student gets exactly 2 questions correct? 9) _____
A) 0.074 B) 0.222 C) 0.593 D) 0.297
- 10) A coin is tossed five times. Find the probability of getting exactly three heads. 10) _____
A) 0.800 B) 0.125 C) 0.156 D) 0.313
- 11) It is estimated that 35% of households own a riding lawn mower. A sample of 15 households is studied. What is the mean number of households who own a riding mower? 11) _____
A) 15 B) 5.25 C) 1.8473 D) 3.4125
- 12) Find the mean for the values of n and p when the conditions for the binomial distribution are met. 12) _____
 $n = 700, p = 0.45$
A) 315 B) 13.2 C) 173.25 D) 385
- 13) The failure rate for taking the bar exam in Philadelphia is 41%. If 375 people take the bar exam, what is the mean for the number of failures? 13) _____
A) 221.3 B) 138.1 C) 90.7 D) 153.8
- 14) Find the variance for the values of n and p when the conditions for the binomial distribution are met. 14) _____
 $n = 900, p = 0.3$
A) 630 B) 189 C) 13.7 D) 270
- 15) Find the standard deviation for the values of n and p when the conditions for the binomial distribution are met. 15) _____
 $n = 700, p = 0.75$
A) 525 B) 11.5 C) 131.25 D) 175
- 16) A coin is tossed 72 times. Find the standard deviation for the number of heads that will be tossed. 16) _____
A) 4.24 B) 6.78 C) 36 D) 18

Answer Key

Testname: STA2023_PRACTICE06

- 1) A
- 2) B
- 3) B
- 4) B
- 5) C
- 6) B
- 7) D
- 8) A
- 9) D
- 10) D
- 11) B
- 12) A
- 13) D
- 14) B
- 15) B
- 16) A