

Chapter 16

Extra Practice Questions

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine whether a probability model based on Bernoulli trials can be used to investigate the situation. If not, explain.

1. We deal 6 cards from a deck and get 3 spades. How likely is this? 1. _____
 - A. Yes.
 - B. No. The suit of each card is independent of the suits already obtained.
 - C. No. 3 is more than 10% of 6
 - D. No. The chance of getting a spade changes as cards are dealt.
 - E. No. More than two outcomes are possible on each trial.

2. A study found that 56% of people working for large companies are dissatisfied with their job. Your manager conducts a survey at your company and finds that 225 of the 440 employees are dissatisfied with their job. 2. _____
 - A. Yes
 - B. No. The chance of getting a dissatisfied employee changes depending on who has already been selected.
 - C. No. 225 is more than 10% of 440
 - D. No. There are more than two possible outcomes.
 - E. No. Employees within the same company are not independent of one another.

Calculate the probability model.

3. In one city, the probability that a person will pass his or her driving test on the first attempt is 0.60. Four people are selected at random from among those taking their driving test for the first time. You are interested in the number x , out of the 4, that pass the test. Find the probability model. 3. _____

x	0	1	2	3	4
$P(x)$					

A.

x	0	1	2	3	4
$P(x)$	0	0.60	0.3600	0.2160	0.1296

B.

x	0	1	2	3	4
$P(x)$	0.0256	0.1116	0.3456	0.2160	0.1296

C.

x	0	1	2	3	4
$P(x)$	0.0256	0.1536	0.3456	0.3456	0.1296

D.

x	0	1	2	3	4
$P(x)$	0.0256	0.1536	0.2304	0.3456	0.1296

E.

x	0	1	2	3	4
$P(x)$	0.0256	0.1536	0.3456	0.3636	0.1116

Find the indicated probability.

4. A basketball player has made 70% of his foul shots during the season. Assuming the shots are independent, find the probability that in tonight's game he makes his first basket on one of his first 6 shots. 4. _____
- A. 0.00073 B. 0.11765 C. 0.99927 D. 0.00170 E. 0.05042

Find the indicated probability. Round to four decimal places.

5. Suppose that in a certain population 46% of people have type O blood. A researcher selects people at random from this population. What is the probability that there is a person with type O blood among the first 6 people checked? 5. _____
- A. 0.9752 B. 0.0095 C. 0.0459 D. 0.0211 E. 0.0248

Solve. Round to two decimal places if necessary.

6. Suppose that 19% of students at one college have high blood pressure. If you keep picking students at random from this college, how many students do you expect to test before finding one with high blood pressure? 6. _____
- A. 0.81 B. 5.26 C. 1.23 D. 19 E. 0.19

7. A company finds that 65% of applicants for a job do not have the required qualifications. On average, how many applications should they expect to read before finding a suitably qualified applicant? 7. _____
- A. 2.86 B. 0.35 C. 65 D. 1.54 E. 0.65

Find the indicated probability.

8. A multiple choice test has 9 questions each of which has 5 possible answers, only one of which is correct. If Judy, who forgot to study for the test, guesses on all questions, what is the probability that she will answer exactly 3 questions correctly? 8. _____
- A. 0.0080 B. 0.0021 C. 0.1762 D. 0.3020 E. 0.8238

Find the probability of the outcome described.

9. A test consists of 10 true/false questions. If a student guesses on each question, what is the probability that the student will answer at least 9 questions correctly. 9. _____
- A. 0.010 B. 0.011 C. 0.999 D. 0.001 E. 0.9
10. A tennis player makes a successful first serve 55% of the time. If she serves 10 times, what is the probability that she gets at least 3 first serves in? Assume that each serve is independent of the others. 10. _____
- A. 0.0274 B. 0.1020 C. 0.8980 D. 0.0746 E. 0.9726
11. A basketball player has made 70% of his foul shots during the season. If he shoots 5 foul shots in tonight's game, what is the probability that he misses at least once? Assume that shots are independent of each other. 11. _____
- A. 0.0024 B. 0.1681 C. 0.15 D. 0.8319 E. 0.3

Find the indicated probability.

12. Police estimate that 25% of drivers drive without their seat belts. If they stop 4 drivers at random, find the probability that all of them are wearing their seat belts. 12. _____
- A. 0.3 B. 0.3164 C. 0.75 D. 0.0039 E. 0.1

Solve the problem.

13. A company manufactures batteries in batches of 15 and there is a 3% rate of defects. Find the mean number of defects per batch. 13. _____
- A. 0.435 B. 0.465 C. 3.0 D. 14.55 E. 0.45
14. Suppose that 11% of people are left handed. If 38 people are selected at random, what is the mean of the number of right-handers in the group? 14. _____
- A. 19 B. 3.72 C. 33.82 D. 4.18 E. 1.93

Provide an appropriate response.

15. A basketball player usually makes 57% of his free shots. Tonight he made 9 shots in a row. Is this evidence that he is on a winning streak? That is, is this streak so unusual that it means the probability he makes a shot must have changed? Explain. 15. _____
- A. Yes; if his success rate were still 57%, he would have only a 5.1% chance of making 9 shots in a row. That's an unusual result.
 - B. No; if his success rate were still 57%, he would have a 5.1% chance of making 9 shots in a row. That's not a highly unusual result.
 - C. Yes; if his success rate were still 57%, he would have only a 0.4% chance of making 9 shots in a row. That's an unusual result.
 - D. No; if his success rate were still 57%, he would have a 0.6% chance of making 9 shots in a row. That's not an unusual result.
 - E. Yes; if his success rate were still 57%, he would have only a 0.6% chance of making 9 shots in a row. That's an unusual result.

Answer Key

Testname: EXTRA PRACTICE QUESTIONS

1. D
2. E
3. C
4. C
5. A
6. B
7. A
8. C
9. B
10. E
11. D
12. B
13. E
14. C
15. E