

Name _____

Each of the 13 questions is worth 9 points for a total of 117 possible points.

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

- 1) A company finds that 71% of applicants for a job do not have the required qualifications. How many applications should they expect to read before finding a suitably qualified applicant? 1) _____
 A) 1.41 B) 71 C) 0.71 D) 3.45 E) 0.29
- 2) An archer is able to hit the bull's eye 72% of the time. If she keeps shooting arrows until she hits the bull's-eye, how long do you expect it will take? Assume each shot is independent of the others. 2) _____
 A) 1.39 shots B) 0.28 shots C) 72 shots D) 3.57 shots E) 0.72 shots

Find the expected value of the random variable.

- 3) The number of golf balls ordered by customers of a pro shop has the following probability distribution. 3) _____
- | | | | | | |
|------|------|------|------|------|------|
| x | 3 | 6 | 9 | 12 | 15 |
| p(x) | 0.14 | 0.29 | 0.36 | 0.11 | 0.10 |
- A) 7.80 B) 9.3 C) 9 D) 8.22 E) 5.55
- 4) You pick a card from a deck. If you get a club, you win \$100. If not, you get to draw again (after replacing the first card). If you get a club the second time, you win \$20. If not, you lose. Find the expected amount you will win. 4) _____
 A) \$31.56 B) \$28.75 C) \$40.00 D) \$30.00 E) \$34.38

Find the standard deviation of the random variable. Round to two decimal places if necessary.

- 5) The probability model below describes the number of thunderstorms that a certain town may experience during the month of August. 5) _____

Number of storms	0	1	2	3
Probability	0.1	0.2	0.5	0.2

What is the standard deviation of the number of storms in August?

- A) 0.71 B) 0.87 C) 0.81 D) 0.61 E) 0.70

Find the indicated probability.

- 6) Suppose that in a certain population 8% of people are color blind. A researcher selects people at random from this population. What's the probability that the first color blind person will be found among the first 4 people checked? 6) _____
 A) 0.2836 B) 0.7787 C) 0.7164 D) 0.0573 E) 0.0623
- 7) An archer is able to hit the bull's eye 76% of the time. If she shoots 10 arrows, what is the probability that her first bull's-eye comes on the 4th arrow? Assume each shot is independent of the others. 7) _____
 A) 0.00252 B) 0.01382 C) 0.01051 D) 0.76 E) 0.10535

Create a probability model for the random variable.

- 8) You roll a fair die. If you get a number greater than 4, you win \$80. If not, you get to roll again. If you get a number greater than 4 the second time, you win \$20. Otherwise you win nothing. 8) _____
 Create a probability model for the amount you win at this game.

	Amount won	\$100	\$80	\$20	\$0
A) P(Amount won)		$\frac{4}{36}$	$\frac{2}{36}$	$\frac{2}{36}$	$\frac{16}{36}$

	Amount won	\$80	\$20	\$0
B) P(Amount won)		$\frac{2}{6}$	$\frac{8}{36}$	$\frac{16}{36}$

	Amount won	\$80	\$20
C) P(Amount won)		$\frac{2}{6}$	$\frac{4}{6}$

	Amount won	\$80	\$20	\$0
D) P(Amount won)		$\frac{2}{6}$	$\frac{2}{6}$	$\frac{2}{6}$

	Amount won	\$100	\$80	\$20	\$0
E) P(Amount won)		$\frac{4}{36}$	$\frac{8}{36}$	$\frac{8}{36}$	$\frac{16}{36}$

- 9) Your soccer team, Mill Valley, plays two games against Fairfield soccer team . The probability that your team wins the first game is 0.4. If your team wins the first game, the probability that they also win the second game is 0.4. If your team loses the first game, the probability that they win the second game is 0.3. 9) _____

Let the random variable X be the number of games won by your team, Mill Valley. Find the probability model for X.

A) Games won	0	1	2
P(Games won)	0.42	0.24	0.16

B) Games won	0	1	2
P(Games won)	0.36	0.48	0.16

C) Games won	0	1	2
P(Games won)	0.42	0.18	0.16

D) Games won	0	1	2
P(Games won)	0.42	0.42	0.16

E) Games won	0	1	2
P(Games won)	0.42	0.46	0.12

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

- 10) A pool of possible jurors consists of 15 men and 18 women. A jury of 12 is picked at random from this group. What is the probability that the jury contains all women? 10) _____
- A) Yes
 B) No. There are more than two possible outcomes.
 C) No. The chance of a woman changes depending on who has already been picked.
 D) Yes, assuming the possible jurors are unrelated
 E) No. 15 is more than 10% of 18

- 11) We record the blood types (O, A, B, or AB) found in a group of 100 people. Assume that the people are unrelated to each other. 11) _____
- A) Yes.
 - B) No. The chance of getting a particular blood group depends on the blood groups already recorded.
 - C) No. More than two outcomes are possible.
 - D) No, 400 is more than 10% of the population.
 - E) No. The chance of getting a particular blood group changes from one person to the next.

Identify the given random variable as being discrete or continuous.

- 12) The number of oil spills occurring off the Alaskan coast 12) _____
- A) Continuous
 - B) Discrete
- 13) The braking time of a car 13) _____
- A) Discrete
 - B) Continuous

Answer Key

Testname: QUIZ2

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