

Name _____

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

- 1) Classify the following random variable according to whether it is discrete or continuous. 1) _____
 The height of a player on a basketball team
 A) discrete B) continuous

- 2) Classify the following random variable according to whether it is discrete or continuous. 2) _____
 The number of cups of coffee sold in a cafeteria during lunch
 A) discrete B) continuous

- 3) Consider the given discrete probability distribution. Find the probability that x exceeds 5. 3) _____

x	3	5	7	9
$P(x)$	0.24	?	0.26	0.01

- A) 0.76 B) 0.73 C) 0.27 D) 0.49

- 4) Consider the given discrete probability distribution. Find the probability that x equals 5. 4) _____

x	2	5	6	9
$P(x)$	0.09	?	0.23	0.21

- A) 0.53 B) 2.65 C) 0.47 D) 2.35

- 5) A local bakery has determined a probability distribution for the number of cheesecakes it sells in a given day. The distribution is as follows: 5) _____

Number sold in a day	0	5	10	15	20
Prob (Number sold)	0.21	0.15	0.06	0.07	0.51

Find the number of cheesecakes that this local bakery expects to sell in a day.

- A) 12.6 B) 20 C) 12.81 D) 10

- 6) A dice game involves rolling three dice and betting on one of the six numbers that are on the dice. 6) _____
 The game costs \$8 to play, and you win if the number you bet appears on any of the dice. The distribution for the outcomes of the game (including the profit) is shown below:

Number of dice with your number	Profit	Probability
0	-\$8	125/216
1	\$8	75/216
2	\$10	15/216
3	\$24	1/216

Find your expected profit from playing this game.

- A) -\$1.07 B) \$0.50 C) \$4.42 D) \$8.19

Provide an appropriate response.

- 7) At a raffle, 10,000 tickets are sold at \$10 each for three prizes valued at \$4,800, \$1,200, and \$400. What is the expected value of one ticket? 7) _____
A) -\$9.36 B) \$9.36 C) \$0.64 D) -\$0.64

Solve the problem.

- 8) In a pizza takeout restaurant, the following probability distribution was obtained for the number of toppings ordered on a large pizza. Find the mean and standard deviation for the random variable. 8) _____

x	$P(x)$
0	.30
1	.40
2	.20
3	.06
4	.04

- A) mean: 1.14; standard deviation: 1.04 B) mean: 1.30; standard deviation: 1.54
C) mean: 1.30; standard deviation: 2.38 D) mean: 1.54; standard deviation: 1.30
- 9) Compute $\binom{9}{4}$. 9) _____
A) 84 B) 126 C) 3024 D) 15,120

- 10) We believe that 80% of the population of all Business Statistics I students consider statistics to be an exciting subject. Suppose we randomly and independently selected 20 students from the population. find the probability of at most 16 students who consider statistics to be an exciting subject. 10) _____
A) 0.589 B) 0.411 C) 0.931 D) 0.069

Provide an appropriate response.

- 11) Assume that male and female births are equally likely and that the birth of any child does not affect the probability of the gender of any other children. Find the probability of at most three boys in ten births. 11) _____
A) 0.300 B) 0.003 C) 0.172 D) 0.333

Solve the problem.

- 12) According to a recent study, 10% women has been a victim of domestic abuse at some point in her life. Suppose we have randomly and independently sampled twenty-five women and asked each whether she has been a victim of domestic abuse at some point in her life. Find the probability that at least 2 of the women sampled have been the victim of domestic abuse. 12) _____
A) 0.271 B) 0.729 C) 0.537 D) 0.463

Provide an appropriate response.

- 13) In a recent survey, 60% of the community favored building a police substation in their neighborhood. If 15 citizens are chosen, find the probability that exactly 8 of them favor the building of the police substation. 13) _____
A) 0.390 B) 0.213 C) 0.177 D) 0.597

Solve the problem.

- 14) The probability that an individual is left-handed is 0.16. In a class of 10 students, what is the mean and standard deviation of the number of left-handed students? 14) _____
A) mean: 10; standard deviation: 1.16 B) mean: 1.6; standard deviation: 1.26
C) mean: 10; standard deviation: 1.26 D) mean: 1.6; standard deviation: 1.16
- 15) A recent survey found that 63% of all adults over 50 wear glasses for driving. In a random sample of 10 adults over 50, what is the mean and standard deviation of the number who wear glasses? 15) _____
A) mean: 6.3; standard deviation: 1.53 B) mean: 3.7; standard deviation: 2.51
C) mean: 6.3; standard deviation: 2.51 D) mean: 3.7; standard deviation: 1.53
- 16) The number of traffic accidents that occur on a particular stretch of road during a month follows a Poisson distribution with a mean of 7.4. Find the probability that fewer than three accidents will occur next month on this stretch of road. 16) _____
A) 0.022 B) 0.978 C) 0.063 D) 0.937
- 17) The number of traffic accidents that occur on a particular stretch of road during a month follows a Poisson distribution with a mean of 8. Find the probability of observing exactly five accidents on this stretch of road next month. 17) _____
A) 0.091 B) 0.191 C) 0.809 D) 0.900
- 18) Suppose the number of babies born each hour at a hospital follows a Poisson distribution with a mean of 2. Find the probability that exactly five babies will be born during a particular 1-hour period at this hospital. 18) _____
A) 0.004511 B) 0.001739 C) 0.036089 D) 0.000006
- 19) Suppose a Poisson probability distribution with $\lambda = 1.4$ provides a good approximation of the distribution of a random variable x . Find μ for x . 19) _____
A) $\sqrt{1.4}$ B) 1.4 C) 0.7 D) 1.96
- 20) Suppose a Poisson probability distribution with $\lambda = 5.1$ provides a good approximation of the distribution of a random variable x . Find σ for x . 20) _____
A) 2.6 B) 5.1 C) $\sqrt{5.1}$ D) 26.01

Answer Key

Testname: PRACTICE-CH4

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