

Practice 03

1) Determine whether the table represents a discrete probability distribution.

1) _____

x	$P(x)$
4	0.35
5	0.2
6	0.2
7	0.25

A) No

B) Yes

2) The following distribution is not a probability distribution because

2) _____

X	-2	-1	0	1	2
$P(X)$	0.16	0.14	-0.06	0.47	0.29

A) the probability values do not add to 1.

B) values of the variable are negative.

C) the probability values are not discrete.

D) a probability is negative.

3) The following table presents the probability distribution of the number of vacations X taken last year for a randomly chosen family. Compute the mean μ .

3) _____

x	0	1	2	3	4
$P(x)$	0.15	0.61	0.11	0.1	0.03

A) 0.87

B) 0.93

C) 1.4

D) 1.25

4) Give the variance of the following distribution?

4) _____

X	0	1	2	3	4
$P(X)$	0.20	0.35	0.10	0.25	0.10

A) 1.25

B) 1.83

C) 1.31

D) 1.71

5) Compute the probability of X successes. Round to three decimal places.

5) _____

$$n = 4, X = 3, p = 0.1$$

A) 0.750

B) 0.004

C) 0.996

D) 0.111

- 6) Determine the indicated probability for a binomial experiment with the given number of trials n and the given success probability p . 6) _____
 $n = 13, p = 0.3, P(\text{Fewer than } 4)$
A) 0.4206 B) 0.5794 C) 0.6543 D) 0.2025
- 7) 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 $P(13 \text{ or more})$ 7) _____
A) 0.9824 B) 0.0176 C) 0.0005 D) 0.0037
- 8) 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? 8) _____
A) 0.8354 B) 0.0600 C) 0.94 D) 0.1645
- 9) Find the mean for the values of n and p when the conditions for the binomial distribution are met. 9) _____
 $n = 700, p = 0.45$
A) 315 B) 173.25 C) 385 D) 13.2
- 10) Find the standard deviation for the values of n and p when the conditions for the binomial distribution are met. 10) _____
 $n = 700, p = 0.75$
A) 131.25 B) 525 C) 175 D) 11.5
- 11) Find the area under the standard normal curve to the left of $z = 1.9$. 11) _____
A) 0.0287 B) 0.4857 C) 0.9713 D) 0.4713
- 12) Find the area under the standard normal curve to the right of $z = 2.7$. 12) _____
A) 0.9965 B) 0.0018 C) 0.0035 D) 0.4965
- 13) Find the area under the standard normal curve that lies outside the interval between $z = -2.3$ and $z = -0.8$. 13) _____
A) 0.7989 B) 0.2881 C) 0.2011 D) 0.7119
- 14) A normal population has a mean $\mu = 33$ and standard deviation $\sigma = 8$. What is the probability that a randomly chosen value will be greater than 30? 14) _____
A) 0.6480 B) 0.3557 C) 0.7486 D) 0.7881

- 15) A bottler of drinking water fills plastic bottles with a mean volume of 990 milliliters (mL) and standard deviation 6 mL. The fill volumes are normally distributed. What is the probability that a bottle has a volume less than 996 mL? 15) _____
A) 0.8413 B) 0.8643 C) 1.0000 D) 0.9772
- 16) In order to be accepted into a certain top university, applicants must score within the top 5% on the SAT exam. Given that the exam has a mean of 1000 and a standard deviation of 200, what is the lowest possible score a student needs to qualify for acceptance into the university? 16) _____
A) 1400 B) 1329 C) 1100 D) 1250
- 17) A sample of size 39 will be drawn from a population with mean 23 and standard deviation 10. Find the probability that \bar{x} will be greater than 25. 17) _____
A) 0.8944 B) 0.1056 C) 0.0951 D) 0.1292
- 18) A sample of size 95 will be drawn from a population with mean 25 and standard deviation 13. Find the probability that \bar{x} will be between 22 and 27. 18) _____
A) 0.0122 B) 0.0668 C) 0.9080 D) 0.9210

Answer Key

Testname: STA2023_PRACTICE03B

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