

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

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 are not discrete
- B) values of the variable are negative
- C) the probability values do not add to 1
- 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. Find $P(1 \text{ or more})$. 3) _____

x	0	1	2	3	4
$P(x)$	0.09	0.68	0.15	0.06	0.02

4) The following table presents the probability distribution of the number of vacations X taken last year for a randomly chosen family. Compute the mean, the variance and the standard deviation *of the variable* 4) _____

x	0	1	2	3	4
$P(x)$	0.11	0.64	0.13	0.1	0.02

- A) 0.1164; 0.5476; 0.7411
- B) 1.28; 0.7396; 0.8611

5) A lab orders a shipment of 100 rats a week, 52 weeks a year, from a rat supplier for experiments that the lab conducts. Prices for each weekly shipment of rats follow the distribution below: 5) _____

Price	\$10.00	\$12.50	\$15.00
Probability	0.2	0.3	0.5

How much should the lab budget for next year's rat orders assuming this distribution does not change. Hint: Find the expected price (or value).

6) A student takes a 15-question, multiple-choice exam with three choices for each question and guesses on each question. Find the probability of guessing exactly 2 out of 15 correctly. 6) _____

- A) 0.060 B) 0.333 C) 0.940 D) 0.133

7) The Australian sheep dog is a breed renowned for its intelligence and work ethic. It is estimated that 30% of adult Australian sheep dogs weigh 65 pounds or more. A sample of 17 adult dogs is studied. What is the probability that no more than 3 of them weigh 65 lb or more? 7) _____

- A) 0.0774 B) 0.7981 C) 0.2019 D) 0.9226

8) In a large bag of marbles, 30% 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? 8) _____

- A) 0.076 B) 0.176 C) 0.108 D) 0.265

9) A jewelry supplier has a supply of earrings which are 30% platinum. A store owner orders five sets of earrings from the supplier. If the supplier selects the pairs of earrings at random, what is the chance that the jewelry store gets exactly two sets of platinum pairs? 9) _____

- A) 0.2205 B) 0.0810 C) 0.5145 D) 0.3087

10) It is estimated that 40% of households own a riding lawn mower. A sample of 13 households is studied. What is the probability that more than 10 of these own a riding lawn mower? 10) _____

- A) 0.0013 B) 0.0001 C) 0.0078 D) 0.9922

11) A coin is tossed five times. Find the probability of getting exactly three heads. 11) _____

- A) 0.125 B) 0.156 C) 0.313 D) 0.800

- 12) A university has 10,000 students of which 55% are male and 45% are female. If a class of 30 students is chosen at random from the university population, find the mean of the number of male students. 12) _____
 A) 16.5 B) 15 C) 7.4 D) 13.5
- 13) In a survey, 65% of the voters support a particular referendum. If 10 voters are chosen at random, find the standard deviation of the number of voters who support the referendum. 13) _____
 A) 5 B) 1.5 C) 2.3 D) 6.5
- 14) A coin is tossed 72 times. Find the standard deviation for the number of heads that will be tossed. 14) _____
- 15) Find the area under the standard normal curve to the left of $z = 1.9$. 15) _____
- 16) The probability $P(0 < z < 0.97)$ is 0.3340. 16) _____
- 17) Find the area under the standard normal curve to the right of $z = 2.7$. 17) _____
 A) 0.4965 B) 0.9965 C) 0.0035 D) 0.0018
- 18) Find the z value to the right of the mean so that 62.93% of the area under the distribution curve lies to the left of it. 18) _____
- 19) If a normally distributed group of test scores have a mean of 70 and a standard deviation of 12, find the percentage of scores that will fall below 50. 19) _____
- 20) 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? 20) _____
- 21) A bottler of drinking water fills plastic bottles with a mean volume of 1000 milliliters (mL) and standard deviation 7 mL. The fill volumes are normally distributed. What is the probability that a bottle has a volume between 996 mL and 1002 mL? 21) _____
- 22) Mrs. Smith's reading class can read an average of 175 words per minute with a standard deviation of 20 words per minute. The top 3% of the class is to receive a special award. What is the minimum number of words per minute a student would need to read in order to get the award? Assume the data is normally distributed. 22) _____

- 23) A survey of 250 lobster fishermen found that they catch an average of 32.0 pounds of lobster per day with a standard deviation of 4.0 pounds. If a random sample of 36 lobster fishermen is selected, what is the probability that their average catch is less than 31.5 pounds? Assume the distribution of the weights of lobster is normal. 23) _____
- A) 18.93% B) 20.28% C) 22.66% D) 24.37%
- 24) The average diameter of sand dollars on a certain island is 4.00 centimeters with a standard deviation of 0.60 centimeters. If 36 sand dollars are chosen at random for a collection, find the probability that the average diameter of those sand dollars is more than 3.90 centimeters. Assume that the variable is normally distributed. 24) _____
- A) 0.341 B) 0.659 C) 0.841 D) 0.780
- 25) The average age of vehicles registered in the United States is 96 months. Assume the population is normally distributed with a standard deviation of 15 months. Find the probability that the mean age of a sample of 36 vehicles is between 98 and 100 months? 25) _____
- A) 6.4% B) 15.7% C) 28.8% D) 44.5%

Answer Key

Testname: REVIEW03

- 1) Yes
- 2) D
- 3) 0.91
- 4) B
- 5) \$689.00
- 6) A
- 7) C
- 8) A
- 9) D
- 10) A
- 11) C
- 12) A
- 13) B
- 14) 4.24
- 15) 0.9713
- 16) True
- 17) C
- 18) 0.33
- 19) 4.75%
- 20) 0.6443
- 21) 0.3298
- 22) 213
- 23) C
- 24) C
- 25) B