

Review 3

1) Determine whether the distribution represents a probability distribution.

1) _____

x	5	-6	7	8
$P(x)$	0.57	0.13	0.13	0.17

A) Yes

B) No

2) Find the mean of the distribution shown below.

2) _____

X	2	3	4
$P(X)$	0.32	0.48	0.20

A) 1.00

B) 2.88

3) Find the variance and the the standard deviation of the following probability distribution.

3) _____

X	0	2	4	6	8
$P(X)$	0.20	0.05	0.35	0.25	0.15

A) 6.76, 2.6

B) 15.8, 3.9

4) Compute the probability of X successes.

4) _____

$$n = 6, X = 5, p = 0.4$$

A) 0.037

B) 0.833

5) Compute the probability of X successes.

5) _____

$$n = 7, X = 6, p = 0.45$$

A) 0.857

B) 0.032

6) A coin is tossed 72 times. Find the mean, variance, and the standard deviation for the number of heads that will be tossed.

6) _____

$$A) \mu = 18, \sigma^2 = 9, \sigma = 2.21$$

$$B) \mu = 36, \sigma^2 = 18, \sigma = 4.24$$

7) Determine the indicated probability for a binomial experiment with the given number of trials n and the given success probability p .

7) _____

$$n = 15, p = 0.1, P(3 \text{ or fewer})$$

A) 0.8159

B) 0.9444

8) Find the area under the standard normal distribution curve to the left of $z = -0.51$ using the standard normal distribution.

8) _____

A) 0.4900

B) 0.3050

9) Find the area under the standard normal distribution curve to the right of $z = 0.78$ using the standard normal distribution. 9) _____
A) 0.2823 B) 0.2177

10) Find the area under the standard normal distribution curve between $z = -2.05$ and $z = 2.05$. 10) _____
A) 0.4798 B) 0.9876 C) 0.4938 D) 0.9596

11) A bottler of drinking water fills plastic bottles with a mean volume of 1010 milliliters (mL) and standard deviation 4 mL. The fill volumes are normally distributed. What is the probability that a bottle has a volume less than 1013 mL?
 $P(X < 1013)$: 11) _____
A) 0.7734 B) 1.0000

12) A bottler of drinking water fills plastic bottles with a mean volume of 998 milliliters (mL) and standard deviation 5 mL. The fill volumes are normally distributed. What is the probability that a bottle has a volume greater than 991 mL? $P(X > 991)$ 12) _____
A) 0.9998 B) 0.9192

Find the indicated probability.

13) The diameters of pencils produced by a certain machine are normally distributed with a mean of 0.30 inches and a standard deviation of 0.01 inches. What is the probability that the diameter of a randomly selected pencil will be less than 0.285 inches? If we sample 16 pencils, what is the probability that the sample mean is less than 0.295? 13) _____
A) 0.0668, 0.0228 B) 0.4332, 0.3214

14) A certain car model has a mean gas mileage of 28 miles per gallon (mpg) with a standard deviation 4 mpg. A pizza delivery company buys 59 of these cars. What is the probability that the average mileage of the fleet is greater than 27.9 mpg? 14) _____
A) 0.6879 B) 0.5714 C) 0.3121 D) 0.4562

15) A certain car model has a mean gas mileage of 30 miles per gallon (mpg) with a standard deviation 3 mpg. A pizza delivery company buys 40 of these cars. What is the probability that the average mileage of the fleet is between 29.8 and 30.2 mpg? 15) _____
A) 0.3256 B) 0.3372 C) 0.6745 D) 0.6628

Answer Key

Testname: STA2023_REVIEW03B

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