MATH 3215 Introduction to Probability and Statistics: Random variables

1. What is a random variable?

A) A variable that is randomly assigned to a particular value

B) A variable that takes on a random value

C) A variable that is not fixed in value

D) A variable that is assigned a value by chance

2. What is the probability of a random variable taking on a particular value?

A) The likelihood of the random variable taking on that value

B) The chance of the random variable taking on that value

C) The probability of the random variable taking on that value

D) The number of times the random variable takes on that value

3. What is the expected value of a random variable?

A) The average value of the random variable

B) The most likely value of the random variable

C) The value of the random variable that is most probable

D) The sum of all the possible values of the random variable

4. What is the variance of a random variable?

A) The average value of the random variable

B) The most likely value of the random variable

C) The value of the random variable that is most probable

D) The sum of all the possible values of the random variable

5. What is the standard deviation of a random variable?

A) The square root of the variance

B) The square root of the mean

C) The square root of the sum of the squares of the deviations from the mean

D) The sum of the squares of the deviations from the mean

6. What is the coefficient of variation of a random variable?

A) The ratio of the standard deviation to the mean

B) The ratio of the variance to the mean

C) The ratio of the mean to the standard deviation

D) The ratio of the standard deviation to the sum of the squares of the deviations from the mean

7. What is the moment generating function of a random variable?

A) The function that calculates the mean of the random variable

B) The function that calculates the variance of the random variable

C) The function that calculates the standard deviation of the random variable

D) The function that calculates the sum of all the possible values of the random variable

8. What is the probability density function of a random variable?

A) The function that calculates the mean of the random variable

B) The function that calculates the variance of the random variable

C) The function that calculates the standard deviation of the random variable

D) The function that calculates the sum of all the possible values of the random variable

9. What is the cumulative distribution function of a random variable?

A) The function that calculates the mean of the random variable

B) The function that calculates the variance of the random variable

C) The function that calculates the standard deviation of the random variable

D) The function that calculates the sum of all the possible values of the random variable

10. What is the joint probability density function of two random variables?

A) The function that calculates the mean of the random variable

B) The function that calculates the variance of the random variable

C) The function that calculates the standard deviation of the random variable

D) The function that calculates the sum of all the possible values of the random variable

11. What is the marginal probability density function of a random variable?

A) The function that calculates the mean of the random variable

B) The function that calculates the variance of the random variable

C) The function that calculates the standard deviation of the random variable

D) The function that calculates the sum of all the possible values of the random variable

12. What is the conditional probability density function of a random variable?

A) The function that calculates the mean of the random variable

B) The function that calculates the variance of the random variable

C) The function that calculates the standard deviation of the random variable

D) The function that calculates the sum of all the possible values of the random variable

13. What is the joint cumulative distribution function of two random variables?

A) The function that calculates the mean of the random variable

B) The function that calculates the variance of the random variable

C) The function that calculates the standard deviation of the random variable

D) The function that calculates the sum of all the possible values of the random variable

14. What is the marginal cumulative distribution function of a random variable?

A) The function that calculates the mean of the random variable

B) The function that calculates the variance of the random variable

C) The function that calculates the standard deviation of the random variable

D) The function that calculates the sum of all the possible values of the random variable

15. What is the conditional cumulative distribution function of a random variable?

A) The function that calculates the mean of the random variable

B) The function that calculates the variance of the random variable

C) The function that calculates the standard deviation of the random variable

D) The function that calculates the sum of all the possible values of the random variable

Answer Key:

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

13. D
14. C
15. D