Started on	Friday, 22 January 2021, 1:40 PM
State	Finished
Completed on	Friday, 22 January 2021, 2:10 PM
Time taken	29 mins 23 secs
Marks	9.00/20.00
Grade	**45.00** out of 100.00

Question **1**

Correct

Mark 1.00 out of 1.00

A machine used for a lottery has 10 balls. Each ball is marked with a different single digit from 0 to 9. One ball is randomly selected and the digit is the winning number. What is the probability that the number is 4 or 7?

Select one:

- a. 1/10
- b. 8/10
- c. 1/5 ✔
- d. 2/5

Your answer is correct.

The correct answer is: 1/5

Question **2**

Correct

Mark 1.00 out of 1.00

There are 5 green 7 red balls. Two balls are selected one by one without replacement. Find the probability that first is green and second is red.

Select one:

- a. 35/132 ✔
- b. 35/144
- c. 84/144
- d. 60/132

Your answer is correct.

The correct answer is: 35/132

Question **3**

Incorrect

Mark 0.00 out of 1.00

In a promotion at a store, each customer gets a chance to randomly draw a ticket from a box. There are 100 tickets. 20 tickets say “Winner!” and 80 tickets say “Sorry. Try again next time.” Assume the ticket is NOT replaced after each customer plays. What is the probability when two customers play that exactly one customer wins and the other loses?

Select one:

- a. 0.3232
- b. 0.1616 ✖
- c. 0.32
- d. 0.16

Your answer is incorrect.

The correct answer is: 0.3232

Question **4**

Incorrect

Mark 0.00 out of 1.00

Two cards are drawn from the pack of 52 cards. Find the probability that both are diamonds or both are kings.

Select one:

- a. 94/1326 ✖
- b. 84/1326
- c. 104/1326
- d. 74/1326

Your answer is incorrect.

The correct answer is: 84/1326

Question **5**

Incorrect

Mark 0.00 out of 1.00

Suppose that the scores on a test have a normal distribution with mean 500 and standard deviation 100. For the standard normal distribution, the area to the right of z = 2.1 is:

Select one:

- a. 0.0358 ✖
- b. 0.0179
- c. 0.9821
- d. 0.1026

Your answer is incorrect.

The correct answer is: 0.0179

Question **6**

Incorrect

Mark 0.00 out of 1.00

Suppose that the scores on a test have a normal distribution with mean 500 and standard deviation 100. For the standard normal distribution, what value of z has an area of 0.20 to the left of z

Select one:

- a. -2.05 ✖
- b. 0.84
- c. 2.05
- d. -0.84

Your answer is incorrect.

The correct answer is: -0.84

Question **7**

Incorrect

Mark 0.00 out of 1.00

Suppose that the scores on a test have a normal distribution with mean 500 and standard deviation 100. What is the proportion of scores between 450 and 600

Select one:

- a. 0.3085 ✖
- b. 0.5328
- c. 0.6529
- d. 0.8413

Your answer is incorrect.

The correct answer is: 0.5328

Question **8**

Correct

Mark 1.00 out of 1.00

The shape of the normal curve depends on its

Select one:

- a. IQR
- b. Mean
- c. Correlation
- d. Standard Deviation ✔

Your answer is correct.

The correct answer is: Standard Deviation

Question **9**

Correct

Mark 1.00 out of 1.00

A random sample of 30 households was selected as part of a study on electricity usage, and the number of kilowatt-hours (kWh) was recorded for each household in the sample for the March quarter of 2006. The average usage was found to be 375kWh. In a very large study in the March quarter of the previous year it was found that the standard deviation of the usage was 81kWh. Assuming the standard deviation is unchanged and that the usage is normally distributed, provide an expression for calculating a 99% confidence interval for the mean usage in the March quarter of 2006

Select one:

- a. 375 ± 38.08 ✔
- b. 375 ± 4.231
- c. 375 ± 40.757
- d. 375 ± 34.457

Your answer is correct.

The correct answer is: 375 ± 38.08

Question **10**

Incorrect

Mark 0.00 out of 1.00

510 people applied to the Bachelor's in BDA program at AITU. Of those applicants, 57 were women. Find the 90% CI of the true proportion of women who applied to the program.

Select one:

- a. (10.018%, 12.382%) ✖
- b. (9.018%, 13.382%)
- c. (11.018%, 11.382%)
- d. (11.256%, 11.456%)

Your answer is incorrect.

The correct answer is: (11.018%, 11.382%)

Question **11**

Correct

Mark 1.00 out of 1.00

Construct a 95 % confidence interval an experiment that found the sample mean IQ for a certain university students was 101.82, with a population standard deviation of 1.2. There were 6 samples in this experiment.

Select one:

- a. (100.86, 102.78) ✔
- b. (99.86, 103.78)
- c. (100.45, 102.99)
- d. (101.86, 103.78)

Your answer is correct.

The correct answer is: (100.86, 102.78)

Question **12**

Incorrect

Mark 0.00 out of 1.00

In a sample of 500 sportsmen, 275 of them used illegal drugs. Test the claim that most sportsmen use drugs. Use 0.05 significance level. What is the test statistic?

Select one:

- a. 16.9574
- b. 1.9574
- c. 3.81 ✖
- d. 46.9574

Your answer is incorrect.

The correct answer is: 46.9574

Question **13**

Correct

Mark 1.00 out of 1.00

In a sample of 500 sportsmen, 275 of them used illegal drugs. Test the claim that most sportsmen use drugs. Use 0.05 significance level. Which interpretation is correct?

Select one:

- a. There's not enough evidence to support the claim that the most sportsmen use drugs
- b. There's enough evidence to support the claim that the most sportsmen use drugs ✔

Your answer is correct.

The correct answer is: There's enough evidence to support the claim that the most sportsmen use drugs

Question **14**

Correct

Mark 1.00 out of 1.00

The linear regression equation is y = 61.93x - 1.79. Identify the slope of the equation.

Select one:

- a. -1.79
- b. (0, 61.93)
- c. (0, -1.79)
- d. 61.93 ✔

Your answer is correct.

The correct answer is: 61.93

Question **15**

Correct

Mark 1.00 out of 1.00

Which of the following statements is NOT true regarding linear regression?

Select one:

- a. It quantifies a relationship between two continuous variables.
- b. It predicts the outcome of a binary variable with continuous variables. ✔
- c. It models a linear relationship between two continuous variables.
- d. It identifies significant predictors for a continuous outcome variable.

Your answer is correct.

The correct answer is: It predicts the outcome of a binary variable with continuous variables.

Question **16**

Incorrect

Mark 0.00 out of 1.00

What would be the Null hypothesis be for a linear regression model of Gestational Age (Independent variable) and Birth Weight (dependent variable)?

Select one:

- a. There is a negative linear relationship between Gestational Age and Birth
- b. There is a linear relationship between Gestational Age and Birth which could be either positive or negative ✖
- c. There is a positive linear relationship between Gestational Age and Birth Weight
- d. There is no linear relationship between Gestational Age and Birth

Your answer is incorrect.

The correct answer is: There is no linear relationship between Gestational Age and Birth

Question **17**

Incorrect

Mark 0.00 out of 1.00

A linear regression analysis of Birth Weight (grams) and Gestational Age (weeks) gave the following output.

Calculate the predicted birth weight of a baby born at 40 weeks gestational age.

Model	Coefficient	95% CI	p-value
Gestational Age	96.56	14.41 to 178.72	0.02
Constant	-230.34	-3340.0 to 3180.30	0.39

Select one:

- a. 4092
- b. 3862 ✖
- c. 3747
- d. 3977
- e. 3632

Your answer is incorrect.

The correct answer is: 3632

Question **18**

Incorrect

Mark 0.00 out of 1.00

What does the least squares method do exactly?

Select one:

- a. Finds the least problematic regression line
- b. Finds those (best) values of the intercept and slope that provide us with the smallest value of the sum of residuals
- c. Finds those (best) values of the intercept and slope that provide us with the smallest value of the residual sum of squares
- d. Minimizes the distance between the data points ✖

Your answer is incorrect.

The correct answer is: Finds those (best) values of the intercept and slope that provide us with the smallest value of the residual sum of squares

Question **19**

Incorrect

Mark 0.00 out of 1.00

Which of the following evaluation metrics can be used to evaluate a model while modeling a continuous output variable?

Select one:

- a. MAE
- b. Logloss ✖
- c. AUC-ROC
- d. Accuracy

Your answer is incorrect.

The correct answer is: MAE

Question **20**

Correct

Mark 1.00 out of 1.00

We can also compute the coefficient of linear regression with the help of an analytical method called “Normal Equation”. Which of the following is/are true about Normal Equation?

1. We don’t have to choose the learning rate
2. It becomes slow when the number of features is very large
3. There is no need to iterate

Select one:

- a. 1 and 3
- b. 1,2 and 3 ✔
- c. 1 and 2
- d. 2 and 3

Your answer is correct.

The correct answer is: 1,2 and 3

◄ Assignment 2

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