COURSE: STATISTICAL EXPERIMENTATION THEORY

DATACAMP ASSESMENT

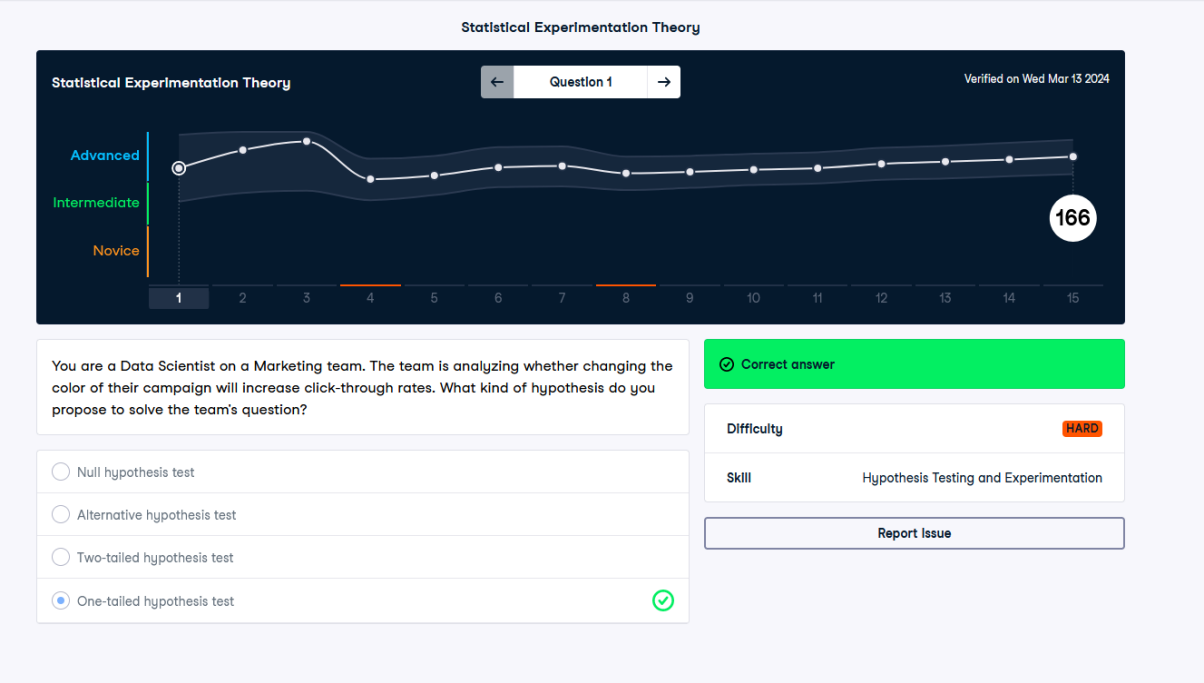
MCQ'S ANSWERS

PART I

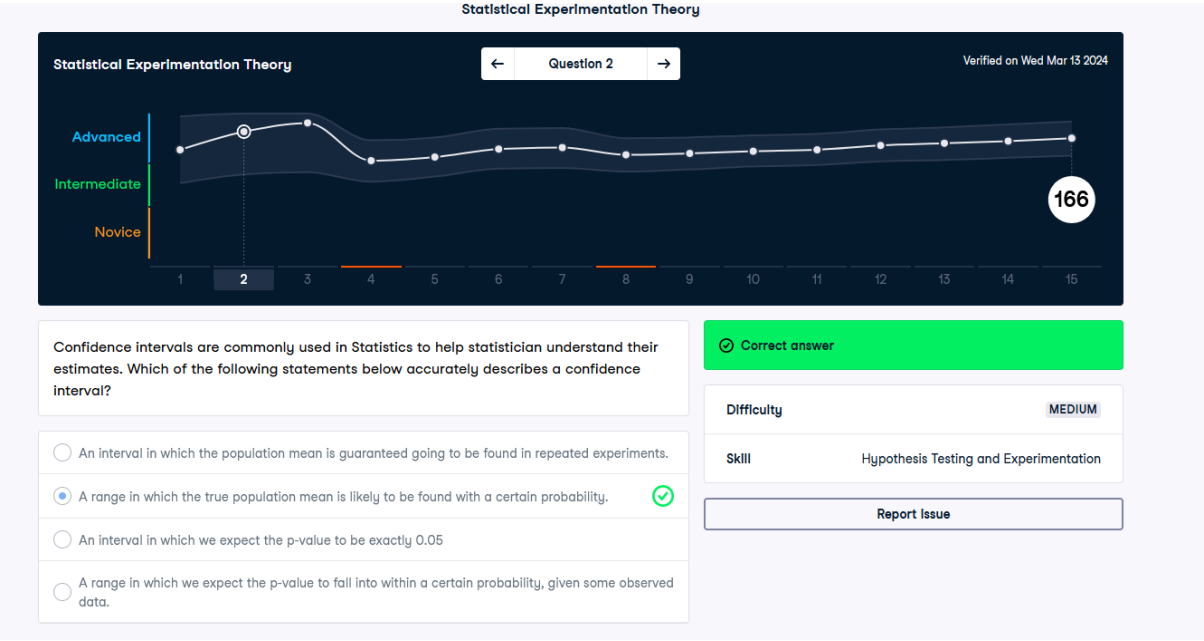
TOTAL 15 QUESTIONS

BELOW ATTACHED THE SCREEN SHOTS OF THE QUESTIONS AND ANSWERS.

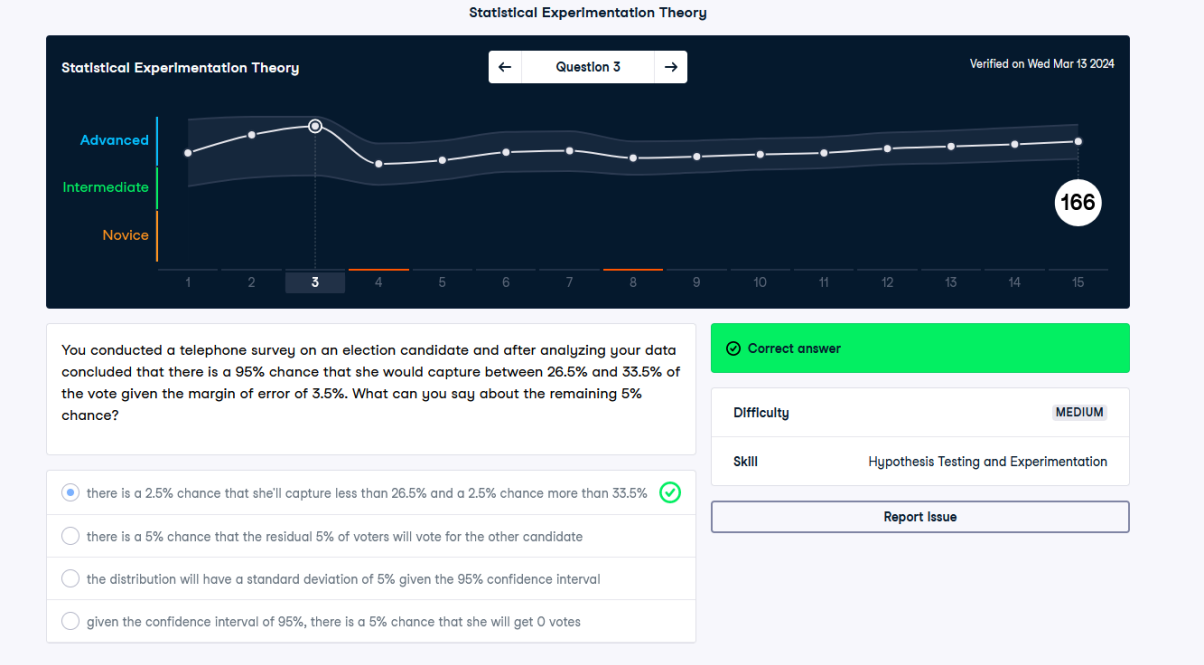
1)



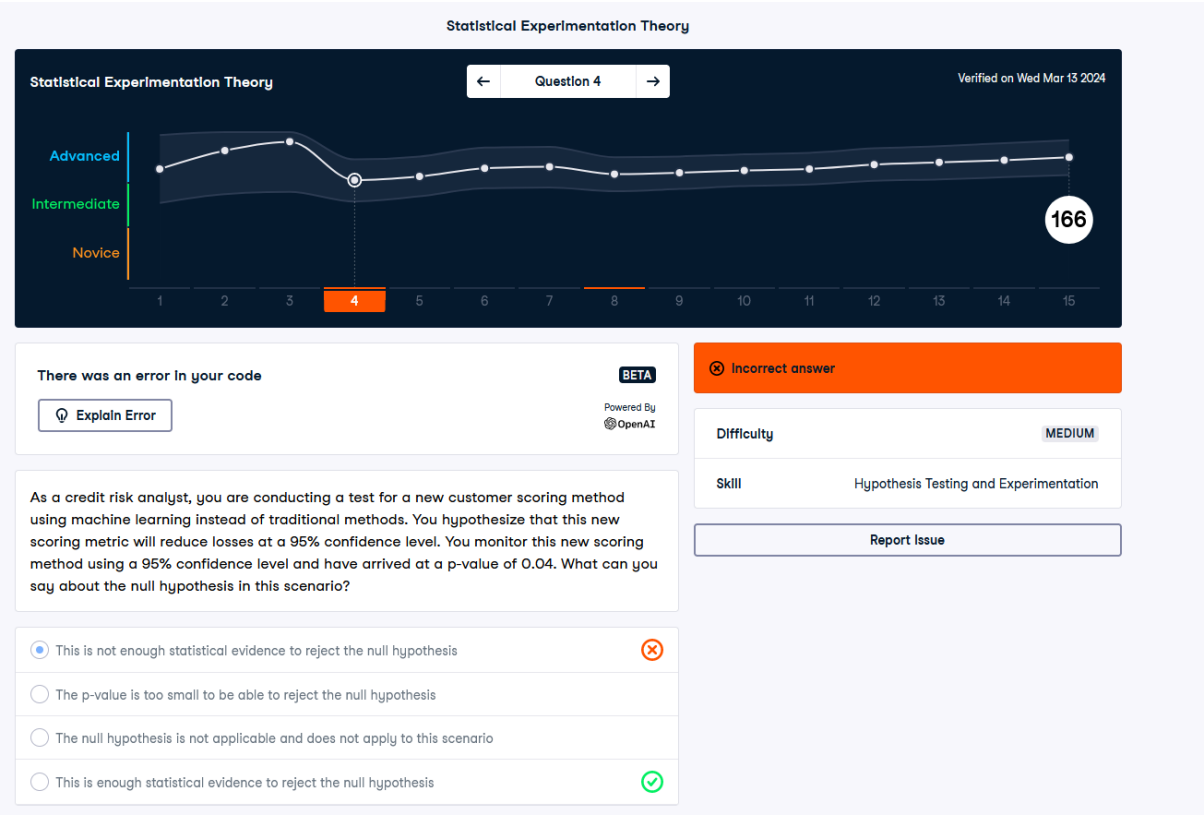
2)



3)

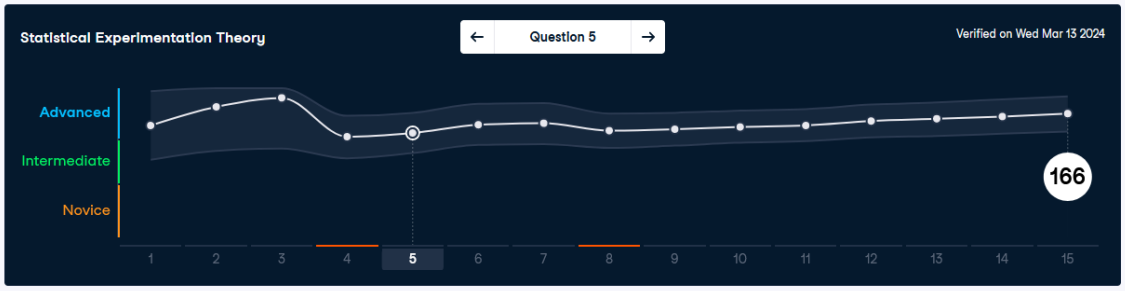

Statistical Experimentation Theory
Statistical Experimentation Theory
Question 3
Verified on Wed Mar 13 2024
Advanced
Intermediate
Novice
166
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
You conducted a telephone survey on an election candidate and after analyzing your data concluded that there is a 95% chance that she would capture between 26.5% and 33.5% of the vote given the margin of error of 3.5%. What can you say about the remaining 5% chance?
there is a 2.5% chance that she'll capture less than 26.5% and a 2.5% chance more than 33.5%
there is a 5% chance that the residual 5% of voters will vote for the other candidate
the distribution will have a standard deviation of 5% given the 95% confidence interval
given the confidence interval of 95%, there is a 5% chance that she will get 0 votes
Correct answer
Difficulty
MEDIUM
Skill
Hypothesis Testing and Experimentation
Report Issue

4)


Statistical Experimentation Theory
Statistical Experimentation Theory
Question 4
Verified on Wed Mar 13 2024
Advanced
Intermediate
Novice
166
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
There was an error in your code
BETA
Explain Error
Powered By OpenAI
As a credit risk analyst, you are conducting a test for a new customer scoring method using machine learning instead of traditional methods. You hypothesize that this new scoring metric will reduce losses at a 95% confidence level. You monitor this new scoring method using a 95% confidence level and have arrived at a p-value of 0.04. What can you say about the null hypothesis in this scenario?
This is not enough statistical evidence to reject the null hypothesis
The p-value is too small to be able to reject the null hypothesis
The null hypothesis is not applicable and does not apply to this scenario
This is enough statistical evidence to reject the null hypothesis
Incorrect answer
Difficulty
MEDIUM
Skill
Hypothesis Testing and Experimentation
Report Issue

5)

Statistical Experimentation Theory



You conduct an experiment to find if eating an apple before bed reduces waking up during the night. You have two groups: a group that eats an apple before bed and a group that does not. You find that the group that ate an apple woke up two times less than the group who did not eat an apple before bed. What can you say about the null hypothesis?

- (●) It can be rejected because apple eating does reduce night waking ✓
- ( ) It cannot be rejected because apple eating does reduce night waking
- ( ) It can be rejected because sleeping is not related to apple eating
- ( ) It cannot be rejected because the correlation between the two is positive

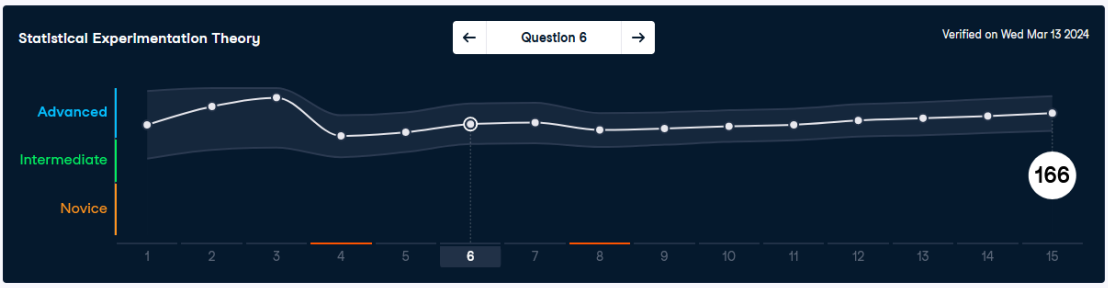
✓ Correct answer

Difficulty	MEDIUM
Skill	Hypothesis Testing and Experimentation

Report Issue

6)

Statistical Experimentation Theory



You are a research analyst working for a consulting company who has been assigned a project to find whether the average weight for American adults has increased or decreased based on their work habits. You obtain a sample of weights from people who work from home and from people who commute to the office. You now need to calculate how varied your samples are. Which statistical distribution will be most useful in this case?

- ( ) Poisson distribution
- ( ) uniform distribution
- ( ) binomial distribution
- (●) f-distribution ✓

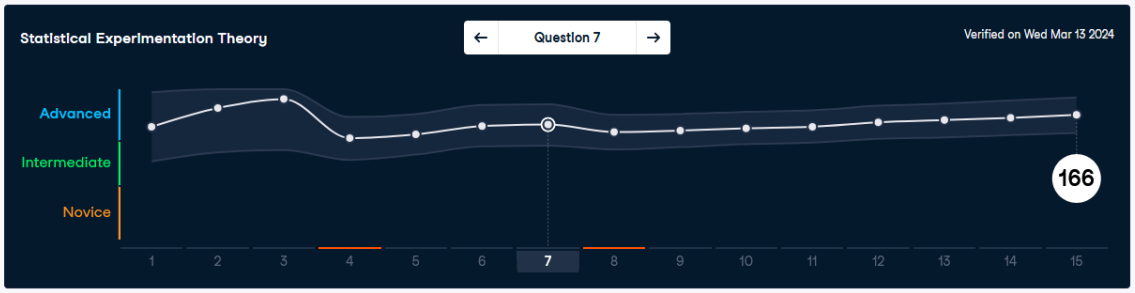
✓ Correct answer

Difficulty	HARD
Skill	Hypothesis Testing and Experimentation

Report Issue

7)

Statistical Experimentation Theory



As an analyst for a mutual fund, you would like to conduct an analysis to prove that your fund has performed 10% better than its benchmark last year. This example uses which type of hypothesis test?

- uni-tailed test
- multi-tailed test
- one-tailed test ✓
- two-tailed test

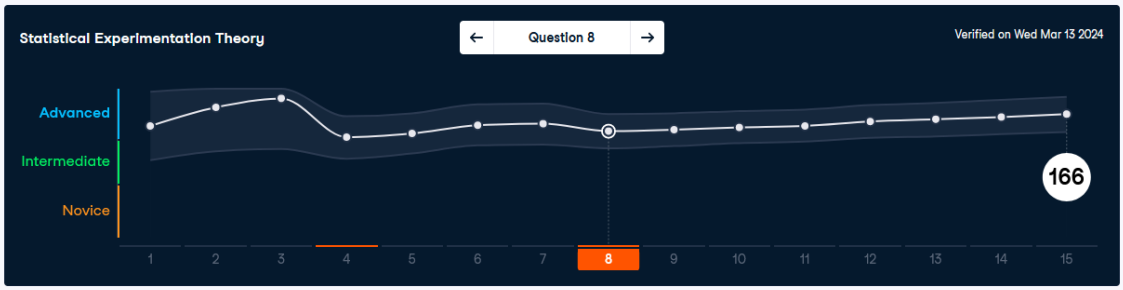
Correct answer

Difficulty	MEDIUM
Skill	Hypothesis Testing and Experimentation

Report Issue

8)

Statistical Experimentation Theory



There was an error in your code

BETA

Explain Error

Powered By OpenAI

You are a researcher studying the health affects of a daily multi-vitamin. You first categorize your study population into age groups: 5-10, 10-25, 25-35, 35-50, and 50-70. You then randomly assign a multi-vitamin or a placebo to a certain number of participants in each group. What is this experimental design process called?

- randomized group design
- randomized block design ✓
- random control design ✗
- random confounding design

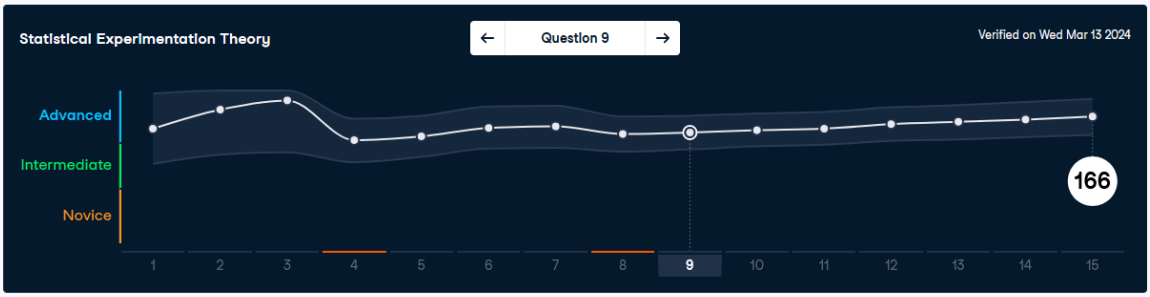
Incorrect answer

Difficulty	HARD
Skill	Hypothesis Testing and Experimentation

Report Issue

9)

Statistical Experimentation Theory



You want to test the regrowth of hair in people who eat spinach on a daily basis vs. people who don't. You conduct an experiment and find that eating spinach daily has no effect on hair regrowth. What can you say about the null hypothesis?

- It can be rejected because spinach had no effect on hair regrowth
- It cannot be rejected because hair regrowth was the same between the groups ✓
- It cannot be rejected because people who don't eat spinach had less hair loss
- It can be rejected because eating spinach and hair loss are not correlated

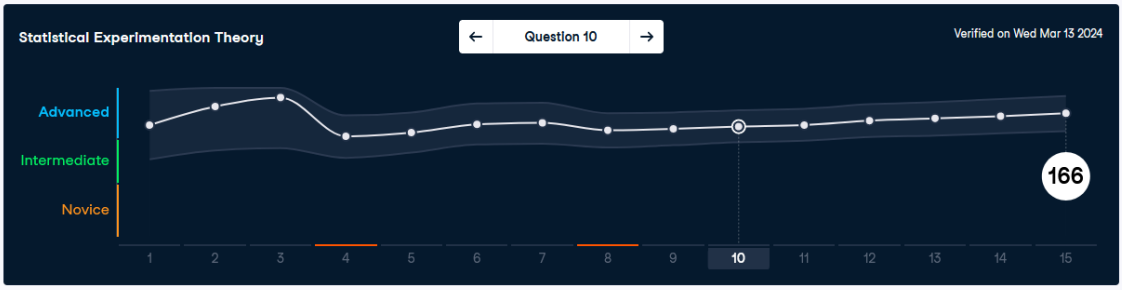
Correct answer

Difficulty	MEDIUM
Skill	Hypothesis Testing and Experimentation

Report Issue

10)

Statistical Experimentation Theory



You are a marketing analyst testing a new vegan hot dog. You would like to find out if there is a relationship between the opinion of vegan meat and consumer age. Your null hypothesis is that there is no relationship between how many adults liked the vegan hot dog and how many children liked the vegan hot dog. You have conducted your experiment and have the following data:

	liked	did not like	total
adults	56	44	100
children	43	57	100

Which distribution would be most useful in deciding whether the two variables of hot dog type and age are independent or not?

- chi-distribution ✓
- normal distribution
- Poisson distribution
- uniform distribution

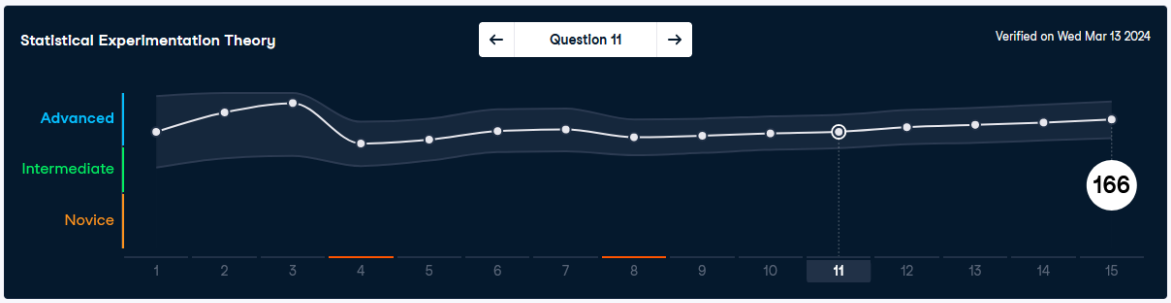
Correct answer

Difficulty	MEDIUM
Skill	Hypothesis Testing and Experimentation

Report Issue

11)

Statistical Experimentation Theory



As a Data Scientist in a Marketing team, you are asked to analyze the effect of changing the color of your campaign from red to green on the number of clicks the campaign receives. Which of the following represents the independent variable in this scenario?

- The campaign itself.
- The number of clicks the campaign receives.
- The color of the campaign. ✓
- The design of the research.

Correct answer

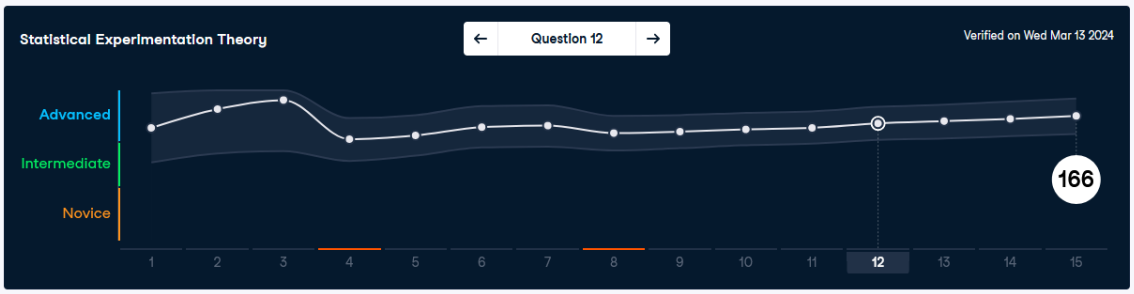
Difficulty: MEDIUM

Skill: Hypothesis Testing and Experimentation

Report Issue

12)

Statistical Experimentation Theory



A restaurant has observed the number of orders per hour is a Poisson distribution with a mean value equal to 20 per hour. The time between customers has a mean of 3 minutes. Which distribution would identify the probability that the time between customer orders is 2 minutes 30 seconds?

- exponential ✓
- Poisson
- normal

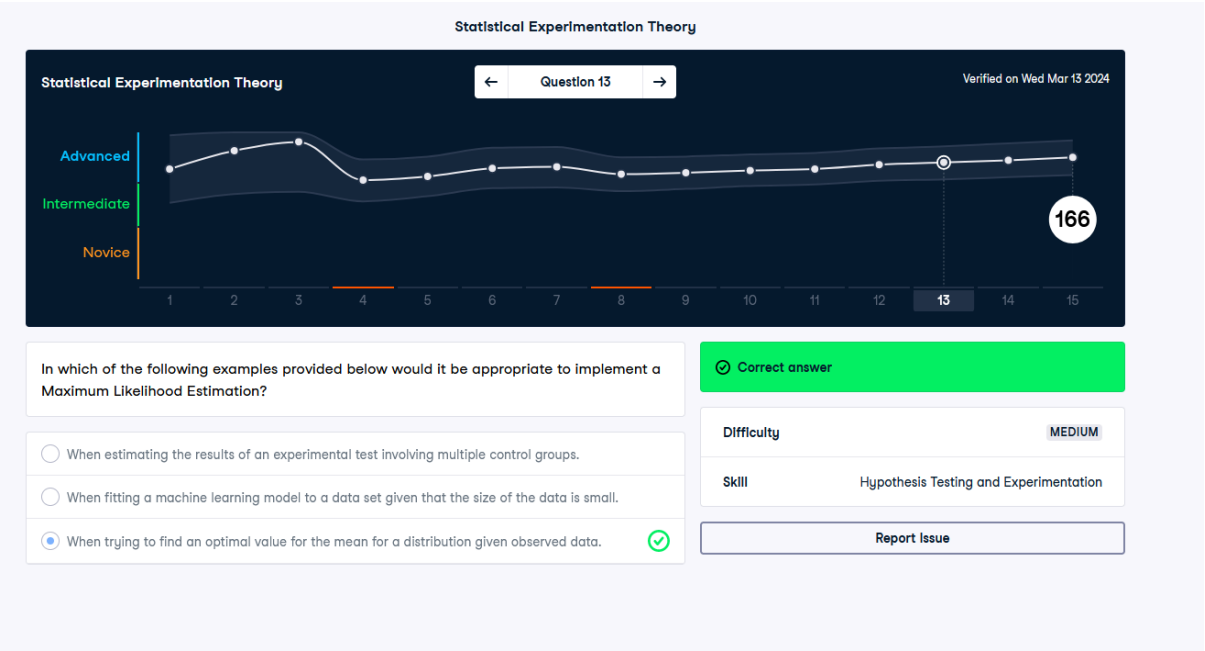
Correct answer

Difficulty: HARD

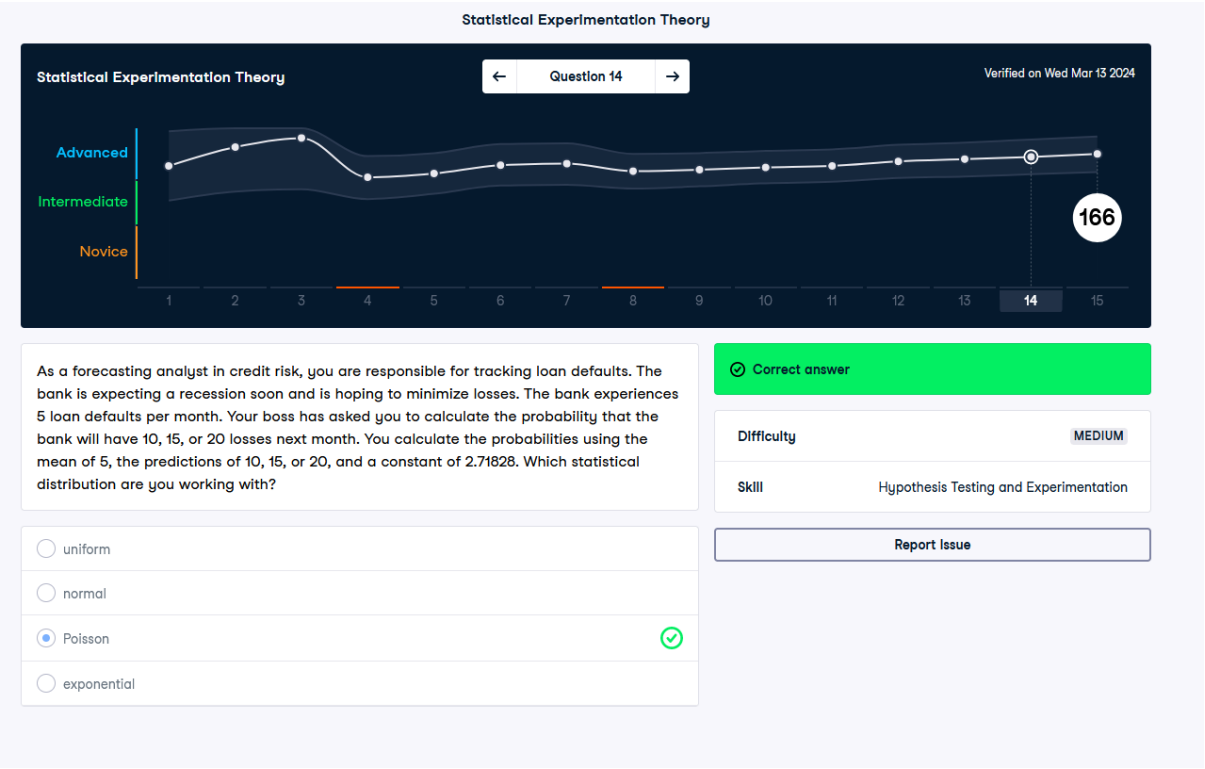
Skill: Hypothesis Testing and Experimentation

Report Issue

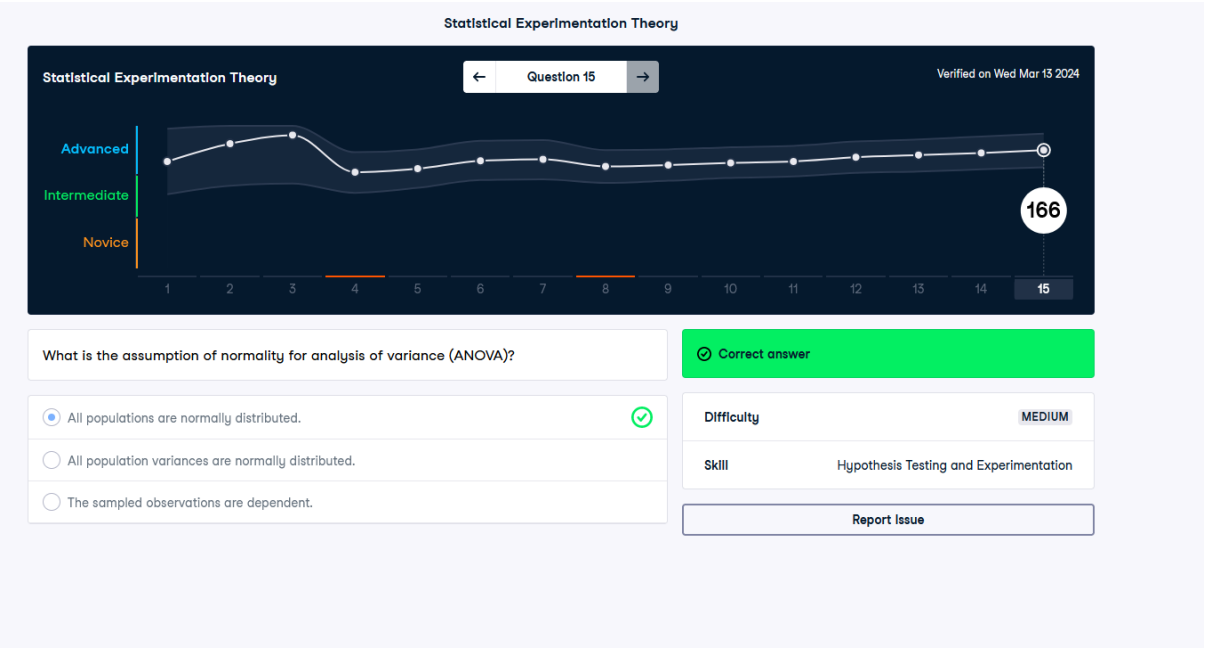
13)


Statistical Experimentation Theory
Statistical Experimentation Theory
Question 13
Verified on Wed Mar 13 2024
Advanced
Intermediate
Novice
166
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
In which of the following examples provided below would it be appropriate to implement a Maximum Likelihood Estimation?
When estimating the results of an experimental test involving multiple control groups.
When fitting a machine learning model to a data set given that the size of the data is small.
When trying to find an optimal value for the mean for a distribution given observed data.
Correct answer
Difficulty
MEDIUM
Skill
Hypothesis Testing and Experimentation
Report Issue

14)


Statistical Experimentation Theory
Statistical Experimentation Theory
Question 14
Verified on Wed Mar 13 2024
Advanced
Intermediate
Novice
166
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
As a forecasting analyst in credit risk, you are responsible for tracking loan defaults. The bank is expecting a recession soon and is hoping to minimize losses. The bank experiences 5 loan defaults per month. Your boss has asked you to calculate the probability that the bank will have 10, 15, or 20 losses next month. You calculate the probabilities using the mean of 5, the predictions of 10, 15, or 20, and a constant of 2.71828. Which statistical distribution are you working with?
uniform
normal
Poisson
exponential
Correct answer
Difficulty
MEDIUM
Skill
Hypothesis Testing and Experimentation
Report Issue

15)


Statistical Experimentation Theory
Statistical Experimentation Theory
Question 15
Verified on Wed Mar 13 2024
Advanced
Intermediate
Novice
166
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
What is the assumption of normality for analysis of variance (ANOVA)?
Correct answer
All populations are normally distributed.
All population variances are normally distributed.
The sampled observations are dependent.
Difficulty
MEDIUM
Skill
Hypothesis Testing and Experimentation
Report Issue