Answer 1

The fundamental goal of logistic regression is to perform \*\*classification\*\*, predicting the probability of a categorical outcome (typically binary, like yes/no or true/false). Unlike linear regression, which aims to predict a continuous numerical value, logistic regression models the relationship between input features and the \*probability\* of belonging to a specific class. It uses a sigmoid function to transform the linear combination of features into a probability between 0 and 1. This makes it suitable for problems where the output is a category, not a number.

Answer 2

The sigmoid function in logistic regression is used to convert the output of a linear equation into a probability. It takes any real number as input and squashes it to a value between 0 and 1. This makes it suitable for predicting probabilities because probabilities must always fall within this range. The sigmoid function is a smooth S-shaped curve, which allows for a gradual change in probability as the input changes.

Answer 3

Maximizing the log-likelihood helps the model find the best parameters."

This answer demonstrates a basic understanding that the process is related to finding good parameters. However, it lacks detail about what "best" means in this context or why log-likelihood is used. It's a very high-level, almost tautological answer.