

## Data Science Examination Overview

Candidates for the NSA's Data Scientist roles are asked to complete a Data Science Examination evaluating their knowledge of statistics, mathematics, and computer science topics that pertain to data science work. Passing this examination is a requirement in order to be considered for selection into a Data Scientist position.

This brief guide provides an overview of the examination and the various topics included on it. We encourage candidates to spend time refreshing themselves in these areas prior to completing the examination.

### *Examination Description*

The Data Science Examination is a 44-question test that must be completed in two hours. We anticipate that most candidates will be able to finish the test in this time frame.

The format of the questions is multiple choice with four response options. There is no penalty for guessing, so it does not hurt a candidate's score to answer a question even if they are unsure of the correct answer.

No calculator is permitted when taking the test, but scratch paper will be provided.

The test does not require knowledge of any specific statistical software or programming languages. Instead, pseudocode is used to structure questions and response options.

### *Examination Content*

The examination is split into three sections:

The Computer Science section includes questions about:

- strategies for effectively combining data from different tables
- an understanding of orders of operation and analysis of algorithms
- using regular expressions

The Mathematical Foundations section includes questions on calculus and linear algebra. Specific topic areas include vector spaces, systems of linear equations, linear transformations, eigenvalues and eigenvectors, and finding limits, differentiation, and integrals.

The Statistics section includes questions about descriptive statistics, probability, hypothesis testing, and correlation and regression.