

Applied Linear Algebra in Data Analysis: January 2026

Quiz 1 | Duration: 10min | Marks: 10

1. Consider the following linear equation with 100 unknown variables,

$$a_1x_1 + a_2x_2 + \cdots + a_{100}x_{100} = b$$

What spaces do the row view and column view of this equation correspond to? [Marks: 1]

What are the different possible solutions for this equation? [Marks: 1]

Explain the complete set of conditions for the different types of solutions for this equation? [Marks: 2]

If the above equation is solvable, explain the procedure for obtaining the solution if it had a unique solution, else explain how you can generate any of the infinitely many solutions. [Marks: 2]

2. Choose the most appropriate answer. What is vector space? [Marks: 1]
- a) A quantity with magnitude and direction.
 - b) A set with no elements.
 - c) A set containing the zero element.
 - d) A set closed under linear combination of its elements.
3. Choose the correct answer: What is linear independence? [Marks: 1]
- a) A set of vectors.
 - b) An operation on a set of vectors.
 - c) A property of a set of vectors.
 - d) A geometric operation on a set of vectors.