1. The linear equation: x + y = 1 has _____ solution/solutions.

Options:

a) Unique

b) Infinite

c) No solution

d) Finite many

Correct answer: a) Unique

2. Which method simultaneously makes the elements above and below the diagonal zero?

Options:

a) Gauss-Jordan Elimination

b) Jacobi's method

c) Gauss-Seidel method

d) Relaxation method

Correct answer: a) Gauss-Jordan Elimination

3. Iterative algorithms can be more rapid than direct methods. (True/False)

Correct answer: True

4. If n x n matrices A and B are similar, then they have the same eigenvalues (with the same multiplicities). (True/False)

Correct answer: False

5. Sparse matrices arise in computing the numerical solution of _____.

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Options:

a) Linear differential equations

b) Ordinary differential equations

c) Non-linear differential equations

d) Partial differential equations

Correct answer: d) Partial differential equations

6. The power method is used to find _____.

Options:

a) The determinant of a matrix

b) The inverse of a matrix

c) The largest eigenvalue and its corresponding eigenvector

d) The eigenvalues of a symmetric matrix

Correct answer: c) The largest eigenvalue and its corresponding eigenvector

7. Which method is not an iterative method?

Options:

a) Gauss-Seidel method

b) Relaxation method

c) Gauss-Jordan elimination method

d) Jacobi's method

Correct answer: c) Gauss-Jordan elimination method

8. In numerical analysis, LU decomposition is used to solve _____.

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Options:

a) Ordinary differential equations

b) Non-linear equations

c) Systems of linear equations

d) Partial differential equations

Correct answer: c) Systems of linear equations

9. The Gauss-Seidel method is an iterative technique for solving _____.

Options:

a) Linear programming problems

b) Ordinary differential equations

c) Non-linear equations

d) Systems of linear equations

Correct answer: d) Systems of linear equations

10. Which of the following is not a type of direct method for solving linear systems?

Options:

a) Gaussian elimination

b) LU decomposition

c) Cholesky decomposition

d) Jacobi's method

Correct answer: d) Jacobi's method

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