National University of Computer & Emerging Sciences
Islamabad

FAST School of Computing | Fall-2024 | Islamabad Campus

MT1004 – Linear Algebra

Quiz # 1

Name: **Roll no:** **Date:**

Question # 1: Consider the system of equations

$x_1 + x_2 + x_3 = 2,\ x_1 + 4x_2 - x_3 = k,\ 2x_1 - x_2 + 4x_3 = k^2$

For what value(s) of k, if any, does

(a) the system has no solutions.

(b) the system has exactly one solution.

(c) the system has infinitely many solutions.

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MT1004 – Linear Algebra

Quiz # 1

Name: **Roll no:** **Date:**

Question # 1: Consider the system of equations

$x_1 + x_2 + kx_3 = 1,\ x_1 + kx_2 + x_3 = 1,\ kx_1 + x_2 + x_3 = -2$

For what value(s) of k, if any, does

(a) the system has no solutions.

(b) the system has exactly one solution.

(c) the system has infinitely many solutions.

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MT1004 – Linear Algebra

Quiz # 1

Name: **Roll no:** **Date:**

Question # 1: Consider the system of equations

$kx + y + z = 1,\ x + ky + \mathrm{z} = 1,\ x + y + kz = 1$

For what value(s) of k, does

(a) the system has no solutions.

(b) the system has exactly one solution.

(c) the system has infinitely many solutions.

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MT1004 – Linear Algebra

Quiz # 1

Name: **Roll no:** **Date:**

Question # 1: Consider the system of equations
$x + y - z = 2,\ x + 2y + z = 3,\ x + y + (k^2 - 5)z = k$
For what value(s) of k, does
(a) the system has no solutions.
(b) the system has exactly one solution.
(c) the system has infinitely many solutions.