

King Fahd University of Petroleum and Minerals
Faculty of Science – Prep-Year Math Program
Math 002 - Term 032
Recitation Hour (10.3 & 10.4)

Question1

If $A = \begin{bmatrix} 1 & 0 & 7 \\ 0 & 1 & 0 \\ 0 & 3 & 1 \end{bmatrix}$ such that $AB = BA = I_3$, then find the matrix B .

Question2

Let $A = \begin{bmatrix} 2 & -3 \\ -1 & -1 \end{bmatrix}$, $B = \begin{bmatrix} 2 \\ 5 \end{bmatrix}$, and $X = \begin{bmatrix} x \\ y \end{bmatrix}$. If the solution of the system

$AX = B$ is $X = CB$, then find the matrix C .

Question3

If $A = \begin{bmatrix} 2 & 1 & -1 & 3 \\ 0 & 1 & 1 & -2 \\ 0 & 3 & 6 & -9 \\ 0 & 1 & 8 & -6 \end{bmatrix}$, then find

1. M_{23} and C_{23}

2. $|A|$

Question4

If A and B are 3×3 invertible matrices such that $|A| = 2$ and $|B| = 3$, then find $|2A^{-1}B^2|$.

Question5

If the matrix $A = \begin{bmatrix} 1 & 4 & -1 \\ -2 & 3 & 2 \\ k & 1 & 2 \end{bmatrix}$ is singular, then find the value of k .