

1. What is the determinant of the matrix A if $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$?
2. Solve the system of linear equations: $x + 2y = 3$ and $3x + 4y = 7$.
3. Find the eigenvalues and eigenvectors of the matrix B where $B = \begin{bmatrix} 2 & 0 \\ 0 & 3 \end{bmatrix}$.
4. If C is a 3×3 matrix with determinant equal to 5, what is the determinant of $2C$?
5. Given the vector $v = (1, 2, 3)$, compute the length (magnitude) of v.