

1. Find inverse of the permutation matrices

a. $P = \begin{bmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{bmatrix}$ and

b. $P = \begin{bmatrix} 0 & 0 & 1 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix}$

2. If P_1 and P_2 are permutation matrices, so is P_1P_2 . This still has the rows of I in some order. Give examples with $P_1P_2 \neq P_2P_1$ and $P_3P_4 = P_4P_3$.
3. Which permutation matrix is required to solve by elimination for the system $u + 4v + 2w = -2, -2u - 8v + 3w = 32, v + w = 1$
4. Which permutation makes PA upper triangular? Which permutation makes

P_1AP_2 lower triangular for $A = \begin{bmatrix} 0 & 0 & 6 \\ 1 & 2 & 3 \\ 0 & 4 & 5 \end{bmatrix}$.