

## Class Discussion

### Unit 7 Topic 4 Part 1 Matrix as a Solver to Systems of Linear equations

#### Elementary Row Operations

1. Interchanges of the two rows
2.  $cR_n$  : multiply a row by a constant (not equals to zero)
3.  $cR_n + R_m$  : multiply a row by a constant and add it to the other row

#### Row-Echelon form

$$\begin{bmatrix} a_{11} & \cdots & \cdots & \cdots \\ 0 & a_{22} & \cdots & \cdots \\ 0 & 0 & \cdots & \cdots \\ 0 & 0 & 0 & a_{nn} \end{bmatrix}$$

Ex: use Gauss-Jordan Elimination to Solve

$$\begin{cases} 7x - 3y + 2w = 41 \\ -2x + y - w = -13 \\ 4x + z - 2w = 12 \\ -x + y - w = -8 \end{cases}$$