

34-)  $A = \begin{bmatrix} 1 & -1 & 1 & 1 & 1 \\ 1 & -1 & 2 & 3 & 1 \\ 2 & -2 & 1 & 0 & 2 \\ 1 & 1 & -1 & 3 & 3 \end{bmatrix}$  matrisinin rangını bulunuz.

**Çözüm:**

$$A = \begin{bmatrix} 1 & -1 & 1 & 1 & 1 \\ 1 & -1 & 2 & 3 & 1 \\ 2 & -2 & 1 & 0 & 2 \\ 1 & 1 & -1 & 3 & 3 \end{bmatrix} \sim \begin{bmatrix} 1 & -1 & 1 & 1 & 1 \\ 0 & 0 & 1 & 2 & 0 \\ 0 & 0 & -1 & -2 & 0 \\ 0 & 2 & -2 & 2 & 2 \end{bmatrix} \sim$$

$$H_{21}(-1), H_{31}(-2), H_{41}(-1) \quad H_{32}(1), H_4(1/2)$$

$$\begin{bmatrix} 1 & -1 & 1 & 1 & 1 \\ 0 & 0 & 1 & 2 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & -1 & 1 & 1 \end{bmatrix} \sim \begin{bmatrix} 1 & -1 & 1 & 1 & 1 \\ 0 & 1 & -1 & 1 & 1 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 2 & 0 \end{bmatrix} \sim \begin{bmatrix} 1 & 0 & 0 & 2 & 2 \\ 0 & 1 & -1 & 1 & 1 \\ 0 & 0 & 1 & 2 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix} \sim$$

$$H_{24} \quad H_{34}, H_{12}(1) \quad H_{23}(1)$$

$$\begin{bmatrix} 1 & 0 & 0 & 2 & 2 \\ 0 & 1 & 0 & 3 & 1 \\ 0 & 0 & 1 & 2 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

elde edilir. O halde  $r_A = 3$  dür