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4]
$$\begin{bmatrix} 1 & -3 & -2 & 4 \\ 3 & -8 & -3 & 8 \\ 2 & -3 & 5 & -4 \end{bmatrix} \xrightarrow[R_3 \to R_3 - 2R_1]{R_2 \to R_2 - 3R_1} \begin{bmatrix} 1 & -3 & -2 & 4 \\ 0 & 1 & 3 & -4 \\ 0 & 3 & 9 & -12 \end{bmatrix}$$

$$\xrightarrow[R_1 \to R_1 + 3R_2]{R_3 \to R_3 - 3R_2} \begin{bmatrix} 1 & 0 & 7 & -8 \\ 0 & 1 & 3 & -4 \\ 0 & 0 & 0 & 0 \end{bmatrix}$$

$$x + 7z - 8t = 0$$
$$y + 3z - 4t = 0$$

2 serbest değişkene bağlı çözüm uzayı elde edilir.

$z = a \;/\; t = b \;/\; x = 8b - 7a \;/\; y = 4b - 3a$

$$X = \begin{bmatrix} x \\ y \\ z \\ t \end{bmatrix} = \begin{bmatrix} 8b-7a \\ 4b-3a \\ a \\ b \end{bmatrix} = a \begin{bmatrix} -7 \\ -3 \\ 1 \\ 0 \end{bmatrix} + b \begin{bmatrix} 8 \\ 4 \\ 0 \\ 1 \end{bmatrix} \qquad \boxed{a, b \in \mathbb{R}}$$

$$Ç.U = \{(8b-7a, 4b-3a, a, b) : a, b \in \mathbb{R}\}$$

$$= \{a(-7,-3,1,0), b(8,4,0,1) : a, b \in \mathbb{R}\}$$

$$= \langle (-7,-3,1,0), (8,4,0,1) \rangle$$ çözüm uzayının bir bazıdır.

$\boxed{boy = 2}$