$B \frac{1}{3}$ ② FROM ③

SUB ② FROM ④

$$\begin{bmatrix} 1 & -1 & 2 & -1 & -1 \\ 0 & 3 & -6 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

MULT ② BY $\frac{1}{3}$

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

ADD ② TO ①

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

SO $z = 5$, $w = T$

$x = -1 + T$, $y = 25$

d)

$$\begin{bmatrix} 0 & -2 & 3 & 1 \\ 3 & 6 & -3 & -2 \\ 6 & 6 & 3 & 5 \end{bmatrix}$$

INTERCHANGE ① AND ②

$$\begin{bmatrix} 3 & 6 & -3 & -2 \\ 0 & -2 & 3 & 1 \\ 6 & 6 & 3 & 5 \end{bmatrix}$$

SUB 2① FROM ③

$$\begin{bmatrix} 3 & 6 & -3 & -2 \\ 0 & -2 & 3 & 1 \\ 0 & -6 & 9 & 9 \end{bmatrix}$$

SUB 3② FROM ③

$$\begin{bmatrix} 3 & 6 & -3 & -2 \\ 0 & -2 & 3 & 1 \\ 0 & 0 & 0 & 6 \end{bmatrix}$$

MULT ① BY $\frac{1}{3}$

MULT ② BY $-\frac{1}{2}$

MULT ③ BY $\frac{1}{6}$

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

SUB 2② FROM ①

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

SUB $\frac{1}{3}$③ FROM ①

ADD $\frac{1}{2}$③ TO ②

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

SO INCONSISTENT BECAUSE THE LAST ROW CORRESPONDS TO THE EQUATION $0 = 1$.

$\boxed{1.2 \quad \#10}$ A)

$$\begin{bmatrix} 5 & -2 & 6 & 0 \\ -2 & 1 & 3 \end{bmatrix}$$

ADD $\frac{2}{5}$① TO ②

$$\begin{bmatrix} 5 & -2 & 6 & 0 \\ 0 & \frac{1}{5} & \frac{27}{5} & 1 \end{bmatrix}$$

MULT ① BY $\frac{1}{5}$

MULT ② BY 5

$$\begin{bmatrix} 1 & -2/5 & 6/5 & 0 \\ 0 & 1 & 27 & 5 \end{bmatrix}$$

ADD $\frac{2}{5}$② TO ①

$$\begin{bmatrix} 1 & 0 & 12 & 2 \\ 0 & 1 & 27 & 5 \end{bmatrix}$$

SO $x_3 = T$, $x_1 = 2 - 12T$

$x_2 = 5 - 27T$