11.
$$\begin{aligned} 2x_1 + x_2 &= -4 \\ x_1 - x_2 + 2x_3 &= 1 \\ x_2 &= -2 \end{aligned}$$

12.
$$\begin{aligned} x_1 - 2x_2 + 3x_3 &= 0 \\ 4x_1 + x_2 - x_3 &= 0 \\ 2x_1 - x_2 + 3x_3 &= 0 \end{aligned}$$

13.
$$\begin{aligned} x_1 + x_2 - x_3 &= 0 \\ 4x_1 - x_2 + 5x_3 &= 0 \\ 6x_1 + x_2 + 3x_3 &= 0 \end{aligned}$$

14.
$$\begin{aligned} 2x_1 + x_2 - 3x_3 &= -3 \\ x_1 + 4x_2 + 2x_3 &= 1 \end{aligned}$$

15.
$$\begin{aligned} x_1 + 2x_2 - 2x_3 - x_4 &= 1 \\ -3x_1 + 4x_2 + x_3 - 2x_4 &= 4 \\ -3x_1 + 14x_2 - 4x_3 - 7x_4 &= 3 \\ 6x_1 + 12x_2 - 12x_3 - 6x_4 &= 5 \end{aligned}$$

16.
$$\begin{aligned} x_1 + 2x_2 - 4x_3 &= 4 \\ -2x_1 - 4x_2 + 8x_3 &= -9 \end{aligned}$$

17.
$$\begin{aligned} x_1 + 2x_2 - 4x_3 &= 4 \\ -2x_1 - 4x_2 + 8x_3 &= -8 \end{aligned}$$

18.
$$\begin{aligned} 2x_1 + 6x_2 - 4x_3 + 2x_4 &= 4 \\ x_1 - x_3 + x_4 &= 5 \\ -3x_1 + 2x_2 - 2x_3 &= -2 \end{aligned}$$

19.
$$\begin{aligned} 2x_1 + x_2 - 3x_3 + 3x_4 &= 0 \\ -2x_1 + 4x_2 + 3x_3 + 3x_4 &= 1 \\ 2x_1 + 8x_2 - 9x_3 + 15x_4 &= 1 \end{aligned}$$

20.
$$\begin{aligned} -x_1 + 2x_2 - x_3 + 3x_4 &= 4 \\ -3x_1 + 6x_2 - 3x_3 + 9x_4 &= 12 \end{aligned}$$

21.
$$\begin{aligned} 2x_1 + x_2 - x_3 + x_4 &= -2 \\ -3x_1 + x_4 &= 1 \\ 5x_2 + 8x_3 &= 3 \end{aligned}$$

22.
$$\begin{aligned} -2x_1 + x_4 &= 1 \\ 4x_2 - x_3 &= -1 \\ x_1 + x_2 &= -3 \end{aligned}$$

23.
$$\begin{aligned} 2x_1 + 4x_2 - 1x_3 &= 0 \\ -2x_1 + 4x_3 + 3x_4 &= -1 \\ x_1 - x_2 - 5x_3 &= 1 \\ 3x_1 - x_2 - x_4 &= -3 \end{aligned}$$

24.
$$\begin{aligned} x_1 - 2x_2 + x_3 + x_4 &= 2 \\ 3x_1 + 2x_3 - 2x_4 &= -8 \\ 4x_2 - x_3 - x_4 &= 1 \\ 5x_1 + 3x_3 - x_4 &= -3 \end{aligned}$$

25.
$$\begin{aligned} x_1 + x_2 &= 4 \\ 2x_1 - 3x_2 &= 7 \\ 3x_1 + 2x_2 &= 8 \end{aligned}$$

26.
$$\begin{aligned} -2x_1 + x_2 &= 0 \\ x_1 + 3x_2 &= 1 \\ 3x_1 - x_2 &= -3 \end{aligned}$$

27.
$$\begin{aligned} x_1 + x_2 &= 4 \\ 2x_1 - 3x_2 &= 7 \\ 3x_1 - 2x_2 &= 11 \end{aligned}$$

En los problemas 28 a 39 determine si la matriz dada se encuentra en la forma escalonada por renglones (pero no en la forma escalonada reducida por renglones), en la forma escalonada reducida por renglones o en ninguna de las dos.

28. $\begin{pmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 0 & 0 & 0 \end{pmatrix}$ **29.** $\begin{pmatrix} 3 & 5 & 2 \\ 0 & -2 & 5 \\ 0 & 0 & 3 \end{pmatrix}$ **30.** $\begin{pmatrix} 2 & 0 & 0 \\ 1 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$ **31.** $\begin{pmatrix} 2 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & -1 \end{pmatrix}$