

PROBLEMAS 1.4

En los problemas 1 a 20 encuentre todas las soluciones a los sistemas homogéneos.

$$\begin{aligned} 1. \quad & x_1 - 5x_2 = 0 \\ & -x_1 + 5x_2 = 0 \end{aligned}$$

$$\begin{aligned} 3. \quad & 2x_1 + x_2 = 0 \\ & -6x_1 - 3x_2 = 0 \\ & x_1 - x_2 = 0 \end{aligned}$$

$$\begin{aligned} 5. \quad & x_1 + x_2 - x_3 = 0 \\ & 2x_1 - 4x_2 + 3x_3 = 0 \\ & 3x_1 + 7x_2 - x_3 = 0 \end{aligned}$$

$$\begin{aligned} 7. \quad & 3x_1 + x_3 = 0 \\ & 2x_2 - 3x_3 = 0 \\ & x_1 + x_2 = 0 \end{aligned}$$

$$\begin{aligned} 9. \quad & x_1 - 3x_2 + 2x_3 = 0 \\ & 3x_1 + 6x_2 - 3x_3 = 0 \end{aligned}$$

$$\begin{aligned} 11. \quad & 2x_1 + x_2 + 2x_3 + x_4 = 0 \\ & -2x_1 + x_2 - x_3 + x_4 = 0 \\ & 2x_2 + x_3 + 2x_4 = 0 \\ & 4x_1 + 4x_2 + 5x_3 + 3x_4 = 0 \end{aligned}$$

$$\begin{aligned} 13. \quad & x_1 - 2x_2 + x_3 + x_4 = 0 \\ & 3x_1 + 2x_3 - 2x_4 = 0 \\ & 4x_2 - x_3 - x_4 = 0 \\ & 5x_1 + 3x_3 - x_4 = 0 \end{aligned}$$

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

$$\begin{aligned} 17. \quad & -2x_1 + 6x_2 = 0 \\ & x_1 - 3x_2 = 0 \\ & -7x_1 + 21x_2 = 0 \end{aligned}$$

$$\begin{aligned} 19. \quad & 3x_1 + 2x_2 - x_3 + 2x_4 = 0 \\ & -2x_1 + x_2 - x_3 + x_4 = 0 \\ & 2x_1 + 3x_2 - 2x_3 + 3x_4 = 0 \end{aligned}$$

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

$$\begin{aligned} 4. \quad & x_1 - 3x_2 = 0 \\ & -2x_1 + 6x_2 = 0 \end{aligned}$$

$$\begin{aligned} 6. \quad & x_1 + x_2 - x_3 = 0 \\ & 2x_1 - 4x_2 + 3x_3 = 0 \\ & -x_1 - 7x_2 - 6x_3 = 0 \end{aligned}$$

$$\begin{aligned} 8. \quad & 2x_1 + 3x_2 - x_3 = 0 \\ & 6x_1 - 5x_2 + 7x_3 = 0 \end{aligned}$$

$$\begin{aligned} 10. \quad & x_1 - 2x_2 + 3x_3 = 0 \\ & 2x_1 + x_2 = 0 \\ & 2x_1 + 2x_2 - x_3 = 0 \end{aligned}$$

$$\begin{aligned} 12. \quad & 2x_1 - 5x_2 - 6x_3 - 3x_4 = 0 \\ & x_1 + 3x_2 - 5x_3 + 4x_4 = 0 \end{aligned}$$

$$\begin{aligned} 14. \quad & -2x_1 + 7x_4 = 0 \\ & x_1 + 2x_2 - x_3 + 4x_4 = 0 \\ & 3x_1 - x_3 + 5x_4 = 0 \\ & 4x_1 + 2x_2 + 3x_3 = 0 \end{aligned}$$

$$\begin{aligned} 16. \quad & x_1 - 3x_2 = 0 \\ & -2x_1 + 6x_2 = 0 \\ & 4x_1 - 12x_2 = 0 \end{aligned}$$

$$\begin{aligned} 18. \quad & x_1 + x_2 - x_3 = 0 \\ & 4x_1 - x_2 + 5x_3 = 0 \\ & -2x_1 + x_2 - 2x_3 = 0 \\ & 3x_1 + 2x_2 - 6x_3 = 0 \end{aligned}$$

$$\begin{aligned} 20. \quad & 4x_1 + 10x_2 - 6x_3 = 0 \\ & -6x_1 - 9x_2 - 9x_3 = 0 \\ & -x_1 + 2x_2 - 12x_3 = 0 \\ & -x_1 - 6x_2 - 12x_3 = 0 \end{aligned}$$