Matrices M6: Cramer's Rule

Simplify the following:

1. $\begin{bmatrix} 3 & -2 \\ 5 & 4 \end{bmatrix} + \begin{bmatrix} -1 & 1 \\ 0 & -2 \end{bmatrix}$

2. $2 \cdot \begin{bmatrix} 3 & -2 \\ 5 & 4 \end{bmatrix}$

3. $\begin{bmatrix} 3 & -2 \\ 5 & 4 \end{bmatrix} \times \begin{bmatrix} -1 & 1 \\ 0 & -2 \end{bmatrix}$

Use Cramer's Rule to solve each system of equations.

4. $\begin{aligned} x &= y + 7 \\ y &= 2x - 8 \end{aligned}$

5. $\begin{aligned} x - y &= 6 \\ 2x + 2y &= 12 \end{aligned}$

6. $\begin{aligned} 3x + y &= 6 \\ 5x + 2y &= 4 \end{aligned}$

7. $\begin{aligned} x + y &= 7 \\ 2x + 3y &= 18 \end{aligned}$

8. $\begin{aligned} 2x + 3y &= 10 \\ 3x + 5y &= 17 \end{aligned}$

9. $\begin{aligned} 5x - 2y &= 14 \\ 3x + 4y &= -2 \end{aligned}$

10. Find the solution of the system of linear equations using Cramer's Rule.

$$4x + 2y = 8$$
$$x - 5y = 2$$

a) (1, 2)   b) (3, -1)   c) (2, 0)   d) (1, 1)