

Add, Subtract, Multiply (if possible) using these matrices:

$$A = \begin{bmatrix} 2 \\ 3 \\ 1 \end{bmatrix} \quad B = \begin{bmatrix} -1 \\ 3 \\ 0 \end{bmatrix} \quad C = \begin{bmatrix} 2 & 0 \\ -3 & 1 \end{bmatrix} \quad D = \begin{bmatrix} -5 & 4 \\ -3 & 2 \end{bmatrix} \quad E = \begin{bmatrix} 4 & 1 & 2 \\ -2 & 10 & 9 \\ 3 & 11 & -4 \end{bmatrix} \quad F = \begin{bmatrix} 5 & -5 & 3 \\ 2 & -2 & -3 \end{bmatrix}$$

1. $A + B$

2. $C - D$

3. $E + F$

4. $3E$

5. $2D - 3C$

6. CD

7. DC

8. EF

9. FE

Write the augmented matrix for each system and then solve it using Reduced Row Echelon Form

10.
$$\begin{aligned} x + 2y &= -7 \\ 2x - y &= -9 \end{aligned}$$

11.
$$\begin{aligned} 3x - 2y &= 9 \\ -x - 3y &= 8 \end{aligned}$$