

Solving Linear Systems by the Linear Combination Method



Overview of problems



Example Set: A

Solve the system using the linear combination method

$$\begin{cases} x - 3y = 7 \\ x + 3y = 7 \end{cases}$$

$$\begin{cases} 2x - 8y = -8 \\ 3x - 8y = -4 \end{cases}$$



Example Set: B

Solve the system using the linear combination method

$$\begin{cases} -x + y = -6 \\ 2x + 2y = 0 \end{cases}$$

$$\begin{cases} -x - 7y = 11 \\ 4x + 11y = 7 \end{cases}$$



Example Set: C

Solve the system using the linear combination method

$$\begin{cases} 3x + 2y = 10 \\ 2x + 5y = 3 \end{cases}$$

$$\begin{cases} 6x - 5y = 3 \\ -12x + 8y = 5 \end{cases}$$



Example Set: D

Solve the system using the linear combination method

$$\left\{ \begin{array}{l} \frac{2}{3}x + \frac{1}{6}y = \frac{2}{3} \\ 3x - y = 12 \end{array} \right\}$$

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Overview of problems- KEY



Example Set: A

Solve the system using the linear combination method

$$\begin{cases} x - 3y = 7 \\ x + 3y = 7 \end{cases} \quad (7, 0)$$

$$\begin{cases} 2x - 8y = -8 \\ 3x - 8y = -4 \end{cases} \quad (4, 2)$$



Example Set: B

Solve the system using the linear combination method

$$\begin{cases} -x + y = -6 \\ 2x + 2y = 0 \end{cases} \quad (3, -3)$$

$$\begin{cases} -x - 7y = 11 \\ 4x + 11y = 7 \end{cases} \quad (10, -3)$$



Example Set: C

Solve the system using the linear combination method

$$\begin{cases} 3x + 2y = 10 \\ 2x + 5y = 3 \end{cases} \quad (4, -1)$$

$$\begin{cases} 6x - 5y = 3 \\ -12x + 8y = 5 \end{cases} \quad \left(-\frac{49}{12}, -\frac{11}{2}\right)$$



Example Set: D

Solve the system using the linear combination method

$$\left\{ \begin{array}{l} \frac{2}{3}x + \frac{1}{6}y = \frac{2}{3} \\ 3x - y = 12 \end{array} \right\} \quad \left(\frac{16}{7}, -\frac{36}{7} \right)$$