

Name

Solve Linear Systems by

Alg I

Multiplying First

I can solve linear systems

Using elimination by multiplying first.

Semester Exam

Example 1:

$$\begin{array}{l}
 1) \quad 6x - 2y = 1 \quad \rightarrow \quad 6x - 2y = 1 \\
 3(-2x + 3y = -5) \quad \rightarrow \quad \underline{-6x + 9y = -15} \\
 \hline
 6x - 2(-2) = 1 \\
 6x + 4 = 1 \\
 \underline{-4 \quad -4} \\
 6x = -3 \\
 \frac{6x}{6} = \frac{-3}{6} \\
 x = -\frac{1}{2}
 \end{array}$$

$$\begin{array}{l}
 \rightarrow -6x + 9y = -15 \\
 \underline{7y = -14} \\
 \frac{7y}{7} = \frac{-14}{7} \\
 y = -2
 \end{array}$$

$$\begin{array}{l}
 (-\frac{1}{2}, -2)
 \end{array}$$

$$\begin{array}{l}
 2) \quad 2x + 5y = 3 \quad \rightarrow \quad -4x - 10y = -6 \\
 3x + 10y = -3 \quad \rightarrow \quad \underline{3x + 10y = -3} \\
 \hline
 3(9) + 10y = -3 \\
 27 + 10y = -3 \\
 \underline{-27 \quad -27} \\
 10y = -30 \\
 \frac{10y}{10} = \frac{-30}{10} \\
 y = -3
 \end{array}$$

$$\begin{array}{l}
 \underline{-x = -9} \\
 -1 \quad -1 \\
 x = 9
 \end{array}$$

$$\begin{array}{l}
 (9, -3)
 \end{array}$$

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I can solve linear systems using elimination by multiplying first.

Example 2:

$$3) \begin{cases} 3x - 7y = 5 \\ 5x + 9y = 5 \end{cases} \rightarrow \begin{cases} 15x - 35y = 25 \\ -15x + 27y = 15 \end{cases}$$

$$9(5) = 5x + 5$$

$$-45 = 5x + 5$$

$$\begin{array}{r} -5 \\ \underline{-50 = 5x} \\ 5 \end{array}$$

$$\underline{5} \\ \underline{-50 = 5x} \\ 5 \\ x = -10$$

$$\begin{array}{r} -8y = 40 \\ \underline{-8} \quad \underline{-8} \\ y = 5 \end{array}$$

(-10, -5)

Semester Exam

Example 3:

$$4) \begin{cases} 10x + 2y = 155 \\ 12x + 3y = 189 \end{cases} \rightarrow \begin{cases} 30x + 6y = 465 \\ -24x - 6y = -378 \end{cases}$$

$$10(14.50) + 2y = 155$$

$$145 + 2y = 155$$

$$\begin{array}{r} -145 \\ \underline{-145} \\ -145 \end{array}$$

$$\begin{array}{r} 2y = 10 \\ \underline{2} \quad \underline{2} \\ y = 5 \end{array}$$

$$\begin{array}{r} 6x = 87 \\ \underline{6} \quad \underline{6} \\ x = 14.50 \end{array}$$

$$x = 14.50$$

Soccer balls : 14.50

Soccer bags : 5

$$y = 5$$