

Systems of Equations: Lesson 4

Linear Elimination: Notes

Name: answer key!



Advanced Elimination Technique:

1. Decide which variable to eliminate.
Look for factors.
2. Multiply one or both equations to achieve same number (positive and negative).
3. Add the new equations together.
4. Solve for the other variable.
5. Put that in to one of the other equations to find the other variable.

Solve:

$$\begin{array}{r}
 8x - 5y = -17 \\
 -2(4x + 3y = -25) \\
 \hline
 -8x - 6y = 50 \\
 +8x - 5y = -17 \\
 \hline
 -11y = 33 \\
 y = -3 \\
 \hline
 8x - 5(-3) = -17 \\
 8x + 15 = -17 \\
 8x = -32 \\
 x = -4 \\
 \hline
 (-4, -3)
 \end{array}$$

Solve:

$$\begin{array}{r}
 3(6x + 5y = 19) \\
 -5(-7x + 3y = 22) \\
 \hline
 18x + 15y = 57 \\
 35x - 15y = -110 \\
 \hline
 53x = -53 \\
 x = -1 \\
 \hline
 (-1, 5)
 \end{array}$$

$$\begin{array}{r}
 6x + 5y = 19 \\
 -6 + 5y = 19 \\
 \hline
 5y = 25 \\
 y = 5
 \end{array}$$