

Systems of Linear Equations 3x3

Procedure to Solve 3x3 Systems of Equations

1. Examine the three equations and make a judgment on which variable might be the easiest to eliminate.
2. Use two of the equations to get rid of that variable by making the coefficients the same but opposite in sign.
3. Use two other equations to get rid of the same variable.
4. Then use those two resulting equations in two variables, solve the 2x2 system
5. And finally using substitution to find the values of the other variables and write the answer as an ordered triple.

1. $x + y + z = 7$
 $x - y + 2z = 7$
 $5x + y + z = 11$

(1, 2, 4)

2. $x - y + z = 8$
 $x + y + z = 6$
 $x + y - z = -12$

(-2, -1, 9)

3. $5x + 2y + z = -11$
 $2x - 3y - z = 17$
 $7x + y + 2z = -4$

(0, -6, 1)

4. $7x + 7y + z = 1$
 $x + 8y + 8z = 8$
 $9x + y + 9z = 9$

(0, 0, 1)

5. $x + y + z = -2$
 $x - y + 2z = -12$
 $2x + 2y + 2z = -6$

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