

The Math Center presents:

A Tip Sheet on

Solving Simultaneous Equations Using the Substitution Method

1. Solve one of the equations in terms of a variable. If possible, choose a variable with a coefficient of 1 to solve for.
2. Use this as the substitution expression for the variable in the second equation.
3. Solve the equation.
4. Substitute this value into the equation from step one and solve for the unknown.

Example: $4x + 4y = 12$
 $5x + y = 15$

1. Choose the second equation and solve for y

$$y = -5x + 15$$

2. Substitute $-5x + 15$ for y in the first equation.

$$4x + 4(-5x + 15) = 12$$

3. Solve the equation.

$$4x - 20x + 60 = 12$$

$$-16x + 60 = 12$$

$$-16x = -48$$

$$x = 3$$

5. Substitute into the equation in step one and solve for y

$$y = -5(3) + 15$$

$$y = 0$$

The solution of this system is (3, 0). These lines intersect at (3, 0)

MCC offers a **Math Lab** at both the Bedford and Lowell campuses. Tutoring is available weekdays and some evenings, at no charge. Schedules are posted on the door. Drop in.

In Bedford: AR 214, Tel: (781) 280-3707

In Lowell: City Campus, Room 406, Tel. (978) 656 - 3368