UCONN - Math 1011Q

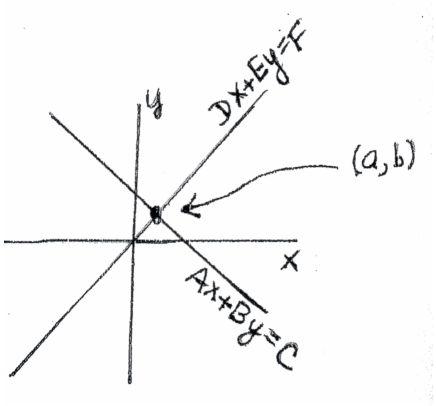
A System of Two Linear Equations in Two Variables

$$\mathbf{A}x + \mathbf{B}y = \mathbf{C}$$
$$\mathbf{D}x + \mathbf{E}y = \mathbf{F}$$

where **A**, **B**, **C**, **D**, **E**, and **F** are numbers; and ***x*** and ***y*** are variables

☺ **A solution of the system** is an ordered pair of numbers (a, b), such that the replacement of x by a, and of y by b, make both equation hold.

☺ Geometrically, a solution (a, b) of the system is a point of intersection of the two lines represented by the two equations of the system.



☺ The Principles of Solving the System by the Substitution Method

Step 1. Chose one of the two equations and solve for one variable in terms of the other variable.

Step 2. Substitute the expression for the variable found in Step 1 into the **other** equation.

Step 3. You now have one equation with one variable. Solve this equation for that variable.

Step 4. Find the value of the other variable by substituting the value found in Step 3 into the expression found in Step 1.

(**Step 5**. Check the ordered pair solution in **both** original equations.)