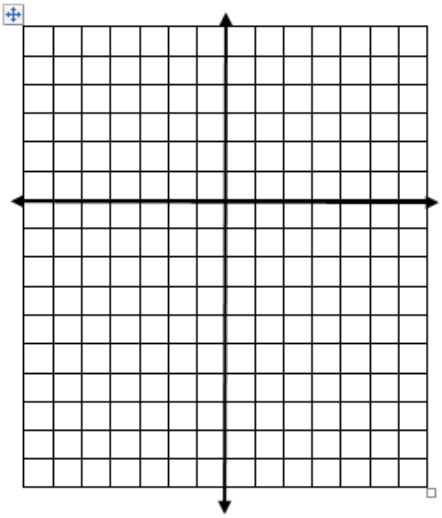
6.2 Solving Systems of Equations using SUBSTITUTION

Recall:
We graphed systems to find the solution.

Graph the system:
$y = 2x + 1$
$3x + y = -9$



We can also use algebra to solve systems of equations eliminating the need to graph the system. One method using algebra is called SUBSTITUTION (replace).

$y = 2x + 1$
$3x + y = -9$

Which variable will be substituted (replaced) with an expression containing the OTHER variable?

Example2: $2x + 5y = -1$

$y = 3x + 10$

Example 3: $x = -2y + 6$

$3x - 4y = 28$

Example 4: $x - 3y = -9$
$5x - 2y = 7$

Example 5: $4x - 3y = 1$
$6y - 8x = -2$

Example 6: $2x - y = 8$

$y = 2x - 3$

As of 2009, the New York Yankees and the Cincinnati Reds together had won a total of 32 World Series. The Yankees had won 5.4 times as many as the Reds. How many World Series has each team won?

1) Determine/Define variables (how many?)
2) Write two equations
3) Solve the system using substitution