BE-Algebra 1 Monday 12-6-10

Solve:

① $2x + 6 < 5x - 2$

② $-3(4x - 1) \geq 6x + 4$

③ $5(8x + 7) = 2x + 3$

④ $\frac{x+5}{3} = 9x - 2$

⑤ $2x - 3y = 4$
$3x - 9y = 18$

- Semester Exam next week

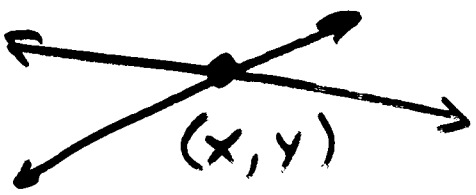
Recall: When solving equations there were 2 special cases; in both cases the "variable went away."

If you were left with a "true" expression, the solution is "All real numbers"

A false expression, the answer is "No solution"

There are two similar special cases when you are solving a system of linear equations.

Normally: the solution is the point where the lines cross



Special case 1, example

$$\begin{cases} y = 2x + 6 \\ y = 2x - 3 \end{cases}$$

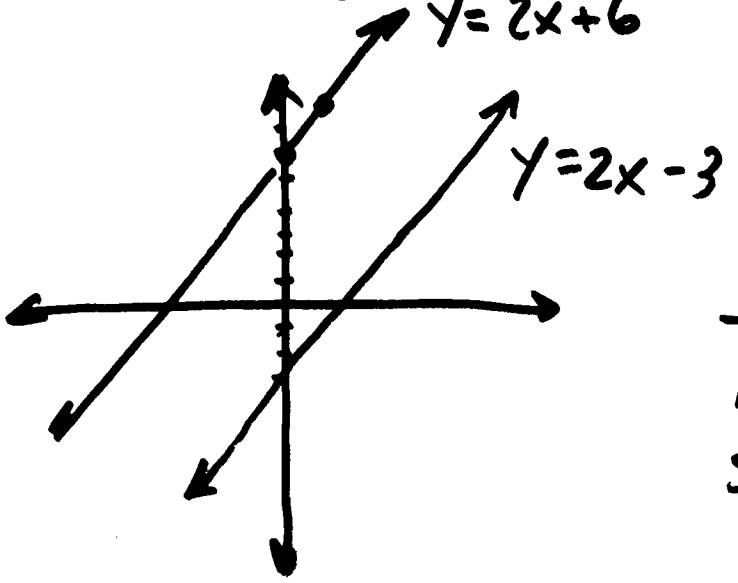
Solving by substitution:

$$2x + 6 = 2x - 3$$

$$-2x \qquad -2x$$

$$6 = -3$$ False, NO SOLUTION

How can this be, why is there no (x, y) pair at the point where the lines cross?



Because the lines are PARALLEL, they never meet.

Lines with the same slope are //

Special case 2, example:

$$\begin{cases} y = 2x + 4 \\ 2y = 4x + 8 \end{cases}$$

Solving by substitution

$$2(2x+4) = 4x + 8$$

$$4x + 8 = 4x + 8$$
$$-4x \qquad -4x$$

$8 = 8$ TRUE, the SOLUTION is INFINITE NUMBER OF SOLUTIONS

How can two lines meet at an infinite number of (x, y) pairs?

The 2 lines are really the same line!

$$\begin{cases} y = 2x + 4 \\ 2y = 4x + 8 \end{cases} \rightarrow y = \frac{4x+8}{2}$$

$$y = 2x + 4 \checkmark$$

Return graded work:

- Exam 2
- HW 7
- M/U

- Saturday ⇒ last day for makeup. No math help after Sat. until 2011!

- Homework – begin studying for Semester 1 Exam.