

BE-Algebra I Tuesday 12-8-09

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

1.
Recall: WHEN SOLVING EQUATIONS

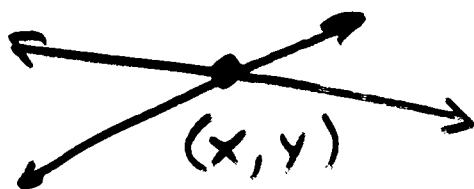
there were 2 special cases, in
both cases the "variable went away."

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

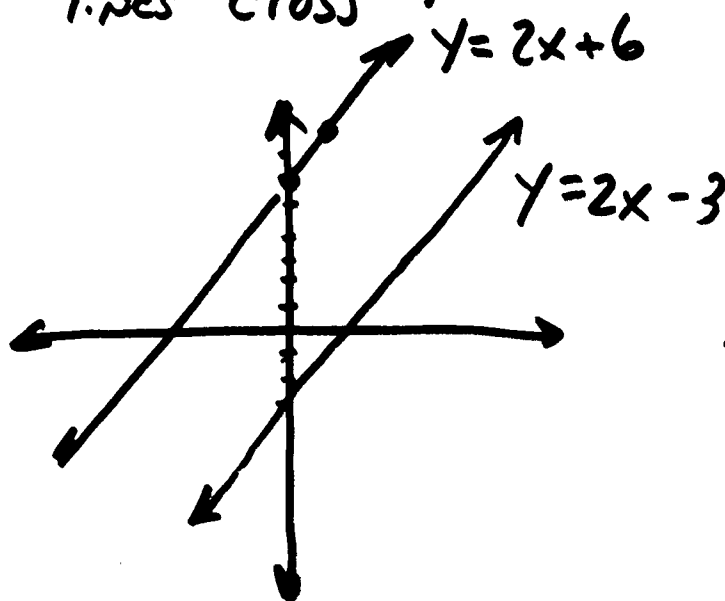
$$\begin{cases} y = 2x + 6 \\ y = 2x - 3 \end{cases}$$

Solving by substitution:

$$\begin{array}{rcl} 2x + 6 & = & 2x - 3 \\ -2x & & -2x \end{array}$$

$$6 = -3 \quad \text{False, } \boxed{\text{NO SOLUTION}}$$

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

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

$$\begin{array}{rcl} 4x + 8 & = & 4x + 8 \\ -4x & & -4x \end{array}$$

$8 = 8$ 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!

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

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

4

Return graded work:

- Exam 2

- HW 7

- M/U

- Next Tuesday $\Rightarrow$ last day for makeup. No math help after Tues. until 2010!

- Homework - begin studying for Semester 1 Exam.

- Pirate Adventure $\Rightarrow$ links page @ bulldogmath.com