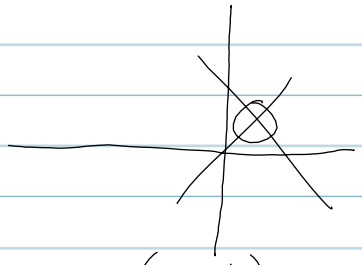
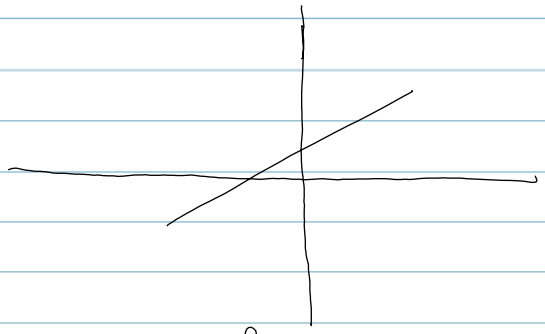
Section 8.1
Systems of Linear Equations

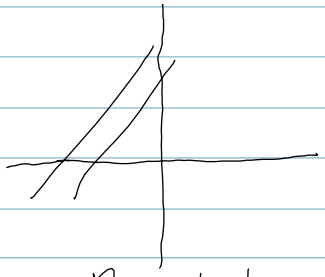
1) Graphing
2) Substitution
3) Elimination or addition



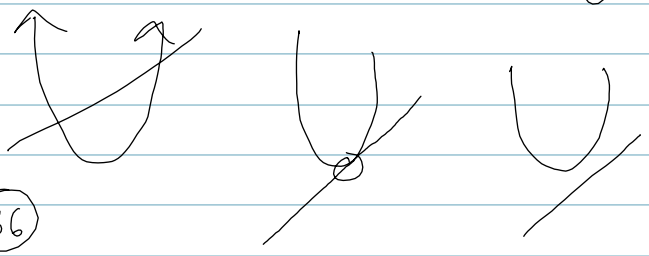
(a, b)



infinite solutions
(true statement)
0 = 0



Parallel
no solution
0 = 2



(36)

lcd 6 $\frac{1}{3}x - \frac{3}{2}y = -5$

lcd 12 $\frac{3}{4}x + \frac{1}{3}y = 11$

① $2x - 9y = -30$
② $9x + 4y = 132$

① $8x - 36y = -120$
② $81x + 36y = 1188$

$81x = 1068$
$x = 12$

$2x - 9y = -30$
$2(12) - 9y = 30$
$24 - 9y = -30$
$-9y = -54$
$y = 6$

(12, 6)

(20)

$x + 3y = 5$
$2x - 3y = -8$

$x = 5 - 3y$
$2x - 3y = -8$

$2(5-3y) - 3y = -8$
$10 - 6y - 3y = -8$
$10 - 9y = -8$
$-9y = -18$
$y = 2$

$x = 5 - 3y$
$x = 5 - 3(2)$
$x = -1$

$(-1, 2)$

3 x 3 systems

3x3 → 2x2 → 1 answer

3rd answer — 2nd answer

(44) ① $2x + y - 3z = 0$
② $-2x + 2y + z = -7$
③ $3x - 4y - 3z = 7$

① $-4x - 2y + 6z = 0$
② $-2x + 2y + z = -7$

④ $6x + 7z = -7$

4 ① $-8x + 4y - 12z = 0$
③ $3x - 4y - 3z = 7$

⑤ $11x - 15z = 7$

④ $-6x + 7z = -7$
⑤ $11x - 15z = 7$

11 ④ $-66x + 77z = -77$
6 ⑤ $66x - 90z = 42$

$-13z = -35$
$z = \frac{35}{13}$