	Systems with 2 Linear Functions	Systems with a Quadratic and a Linear Function	
# of solutions	0, 1, infinite	0, 1, 2	$y = x^2$ $y = x$
0	Same slope	$b^2 - 4ac < 0$	$x^2 = x$ $x^2 - x = 0$
1	different slope	$b^2 - 4ac = 0$	
2	N/A	$b^2 - 4ac > 0$	
infinite	same line	N/A	

Recap: FOIL

- used when multiplying two binomials

e.g. $(x - 2)(x - 4)$

F: x^2 I: $-2x$

O: $-4x$ L: 8 $x^2 - 6x + 8$

e.g. $(x - 1)^2 = (x - 1)(x - 1)$

Substitution and Elimination

When is it best to use substitution?

① $y = ax + b$

② anything else

When is it best to use elimination?

Same order / format
(e.f both general form)

p. 118 #6. a)

3x - y = 2

$y = -x^2 - x + 12$

Caution: Elimination Gets Weird

e.g. p.118 #6.e)

$0x^2 + 3x + y + 11 = 0$ ⇐

$+ \quad x^2 - 10x - y - 5 = 0$

$x^2 - 7x + 0 + 6 = 0$

$x^2 - 7x + 6 = 0$

$(x-1)(x-6) = 0$

$(x-1) = 0 \qquad x - 6 = 0$

$x = 1 \qquad\qquad x = 6$

always get rid of the y's

$x = 1 \quad \Rightarrow 3(1) + y + 11 = 0$

$(1, -14) \quad y = -14$

$x = 6 \qquad 3(6) + y + 11 = 0$

$y = -29$