Solve using the substitution method.

a)
$$x + y = 8$$
$$3x + 3y = -5$$
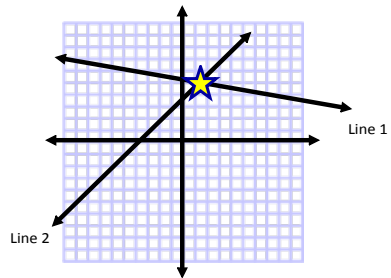
b)
$$p - 2q = -3$$
$$4q = 2p + 6$$

Types of Intersections

A linear system can have:

_____ SOLUTION
--> The lines intersect at _____ point.

The two linear equations have
- _____ slopes
- y-intercept _____

Line 1
Line 2

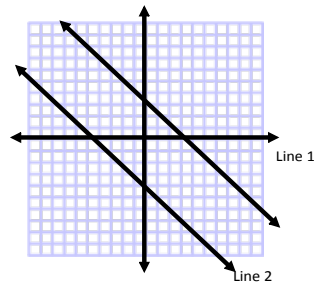____ SOLUTION
--> The lines _____ intersect.

The two linear equations have
- _____ slope
- _____ y-intercepts

Line 1
Line 2
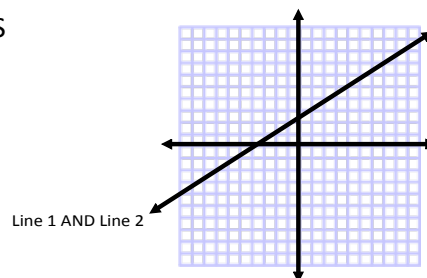
_____ NUMBER OF SOLUTIONS
--> The lines intersect at _____ point.

The two linear equations have
- _____ slope
- _____ y-intercept

Line 1 AND Line 2

Ex. 1 Complete the table.

System #	Equations	Slope	y-int	# of intersections	Solution
1	$y = \dfrac{2}{3}x - 1$				
	$y = \dfrac{2}{3}x + 2$				
2	$y = -\dfrac{1}{2}x - 1$				
	$x + 2y = -2$				
3	$y = -\dfrac{3}{4}x + 1$				
	$y = 2x + 1$				

Ex. 2 For what value of p will the system of linear equations have NO solution?

a) $x - 2y = 4$
     $y = px + 1$

b) $3x + y = 1$
    $x + y = p(x + 2)$