Two Lines - Points of Intersection

Line equation: y = mx + b

m = slope b = y-intercept

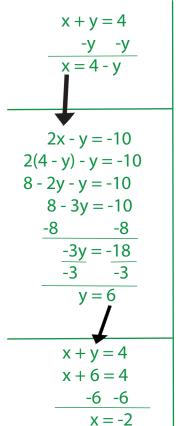
Using slopes to determine # of Intersection Points

# of Intersection Points	Compare m & b of two lines
1	m's are different
0	m are the same and b are different i.e. Lines are the parallel
All	m & b are the same i.e. Lines are the same

Example: Find intersection between

$$x + y = 4$$
$$2x-y = -10$$

By Computation:



- 1. Solve one equation for a variable
- 2. Substitute that variable into the other equation

3. To find the other variable (in this case x) plug the variable into either equation and solve

By Graphing:

 Convert each equation into slopeintercept formula (y= mx+b)

$$2x - y = -10$$

 $x + y = 4$
 $-2x$ $-2x$
 $-y = -10 - 2x$
 $y = 4 - x$ -1 -1
 $y = -x + 4$ $y = 10 + 2x$
 $y = 2x + 10$

2. Graph each equation and where they intersect is the answer

