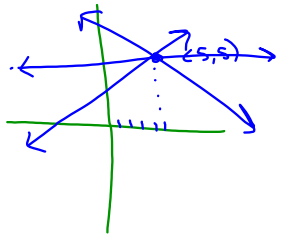


Jan 17-11:31 AM

$y=4x+3$

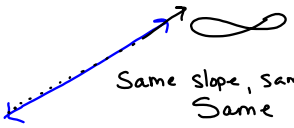
same slope

$y=4x-1$

No Solution

N/S

Jan 17-11:40 AM



Same slope, same y int

Same

Infinitely Many Solutions

Jan 17-11:40 AM

3 Methods

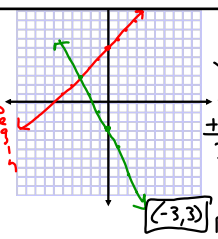
- Graph
- Substitution putting one Line into the other
- Elimination

Jan 17-11:41 AM

1.
- $y=\frac{1}{1}x+6$
- $y=\frac{-2}{1}x-3$

$y=mx+b$ (m: rise, b: begin)

✓ $(-3,3)$



$y=x+6$ $y=-3+6$

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

$x+6=-2x-3$

$+2x$ $+2x$

$3x+6=-3$

-6 -6

$\frac{3x}{3}=\frac{-9}{3}$

$x=-3$ $y=3$

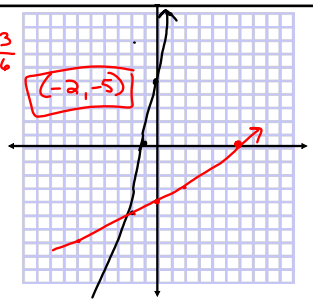
Jan 17-11:43 AM

2)
- $5x-y=-5$
- $3x-6y=24$ $\frac{-3}{-6}$

$\frac{5x}{5}=\frac{-5}{5}$ $\frac{-y}{-1}=\frac{-5}{-1}$

$x=-1$ $y=5$

$\frac{-a}{b}$ $\frac{-5}{-1}=5$



2) $5x-y=-5$

$3x-6y=24$

$5x-y=-5$

$-5x$ $-5x$

$-y=-5x-5$

$y=5x+5$

$3x-6(5x+5)=24$

$3x-30x-30=24$

$27x=54$

$x=-2$

$y=5(-2)+5$

$y=-5$

$(-2,-5)$

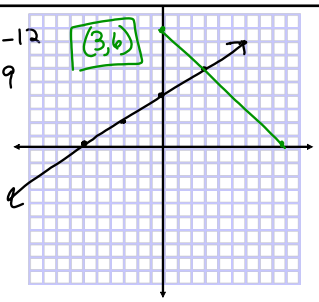
Jan 17-11:49 AM

3) $2x - 3y = -12$

$x + y = 9$

$x = -6 \quad y = 4$

$\boxed{(3,6)}$



Jan 17-12:01 PM

3) $2x - 3y = -12$

$x + y = 9$

$-x \quad -x$

$y = -x + 9$

$2x - 3(-x + 9) = -12$

$2x + 3x - 27 = -12$

$5x - 27 = -12$

$+27 \quad +27$

$5x = 15$

$x = 3$

$y = -3 + 9$

$y = 6$

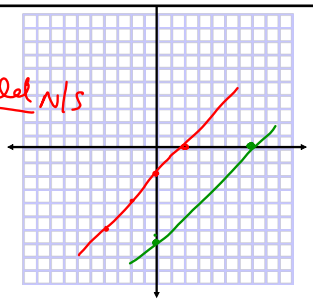
$\boxed{(3,6)}$

Jan 17-12:06 PM

9) $2x - 2y = 14$

$x - y = 2$

$m = 1$ parallel N/S



Jan 17-12:09 PM

9) $2x - 2y = 14$

$x - y = 2$

$x = y + 2$

$2(y + 2) - 2y = 14$

$2y + 4 - 2y = 14$

$4 = 14$ N/S

Jan 17-12:12 PM

Elimination - Method used by adding or subtracting linear equations. Used mostly when the lines are written in standard form

Steps:
1. Make sure equations are lined up
2. Add or Subtract the equations to eliminate either the x or y variable with common coefficients
3. Solve for the remaining variable
4. Substitute the answer into one of the original and solve for the other variable

Jan 17-12:36 PM

1. $y = 3x + 4$

$y = x - 2$

$3x + 4 = x - 2$

$2x = -6$

$x = -3$

$y = -3 - 2$

$y = -5$

$\boxed{(-3,-5)}$

Jan 17-12:48 PM

2. $\cancel{x} + 4y = 13$
$\ominus\ \cancel{x} - y = 3$
$\frac{5y}{5} = \frac{10}{5}$
$y = 2$

✓ Both in ax+by=c

$x - 2 = 3$
$+2 \quad +2$
$x = 5$

$\boxed{5, 2}$

Jan 17-12:50 PM

3) $\cancel{3x} - 10y = 14$
$\ominus\ \cancel{3x} - 9y = 15$
$-y = -1$
$y = 1$

$\boxed{(8, 1)}$

$3x - 9(1) = 15$
$3x - 9 = 15$
$+9 \quad +9$
$3x = 24$
$x = 8$

Jan 17-12:53 PM

5 $\cancel{4x} + 9y = 5$
$\oplus\ \cancel{-4x} + 7y = 11$
$\frac{16y}{16} = \frac{16}{16}$
$y = 1$

$4x + 9(1) = 5$
$-9 \quad -9$
$4x = -4$
$x = -1$

$\boxed{-1, 1}$

Jan 17-12:56 PM

9) $4y = 2x - 8$
$5x - 4y = 20$

$4y = 2x - 8$
$-2x \quad -2x$
$-2x + 4y = -8$

$-2x + \cancel{4y} = -8$
$\oplus\ 5x - \cancel{4y} = 20$
$3x = 12$
$x = 4$

$\boxed{(4, 0)}$

$5(4) - 4y = 20$
$20 - 4y = 20$
$-20 \quad -20$
$-4y = 0$
$y = 0$

Jan 17-12:59 PM