Warmup

Solve the following by either elimination or substitution

6

Matt and Ming are selling fruit for a school fundraiser. Customers can buy small boxes of oranges and large boxes of oranges. Matt sold 3 small boxes of oranges and 14 large boxes of oranges for a total of $203. Ming sold 11 small boxes of oranges and 11 large boxes of oranges for a total of $220. Find the cost each of one small box of oranges and one large box of oranges.

elimination

x = small box $7

y = large box $13

$11(3x + 14y = 203)$

$-3(11x + 11y = 220)$

$33x + 154y = 2233$

$-33x - 33y = -660$

$121y = 1573$

$\frac{121y}{121} = \frac{1573}{121}$

$y = \$13$ for

$3x + 14y = 203$

$3x + 14(13) = 203$

$3x + 182 = 203$

$-182 \quad -182$

$3x = 21$

$\frac{3x}{3} = \frac{21}{3}$

$x = 7$

 $y = mx + b$ Name: _____

How do you solve a system of equations by graphing?

1st Equation

$x + y = 3$

$-x \quad -x$

$y = -x + 3$

slope $= -\frac{1}{1}$

y int $(0, 3)$

2nd Equation

$-6x + y = -4$

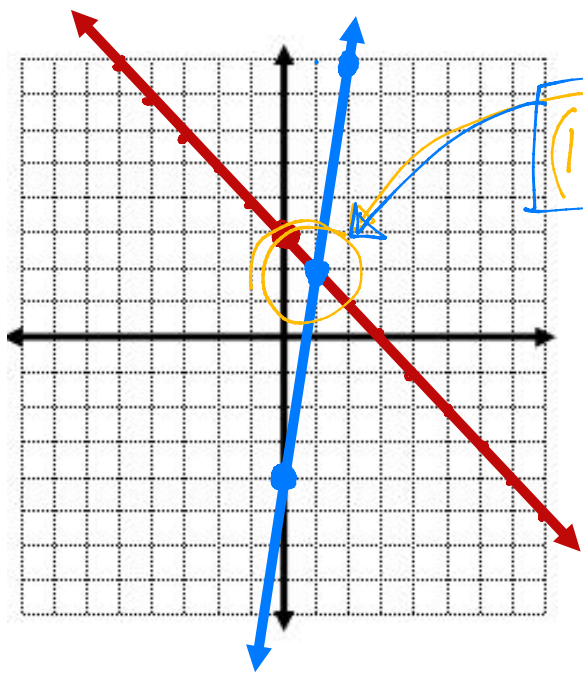
$+6x \quad +6x$

$y = 6x - 4$

slope $= \frac{6}{1}$

y int $(0, -4)$

$x + y = 3$
$-6x + y = -4$



Equation 1

Slope:

y- intercept:

Equation 2

Slope:

y- intercept:

Answer:

Same line?

Infinite solutions No

Parallel lines?

No solution No

Intersection?

Name it (1,2)

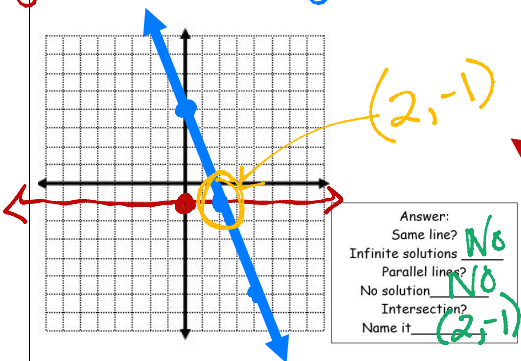
Solve the following systems graphically.

1. $y = -1$

$y = \frac{-5}{2}x + 4$

slope $-\frac{5}{2}$

y int: (0,4)



Answer:
Same line? No
Infinite solutions
Parallel lines? No
No solution
Intersection? (2,-1)
Name it

2. $2x + 3y = -12$

$5x - 3y = -9$

$2x + 3y = -12$

$-2x \quad -2x$

$\frac{3y}{3} = \frac{-2x}{3} - \frac{12}{3}$

$y = -\frac{2}{3}x - 4$

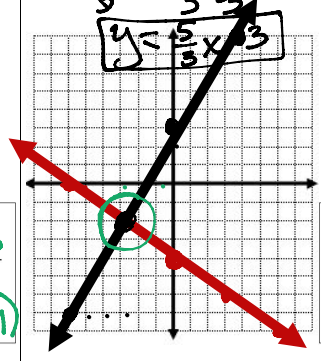
slope $-\frac{2}{3}$

y int (0,-4)

$-5x \quad -5x$

$\frac{-3y}{-3} = \frac{-5x}{-3} - \frac{9}{-3}$

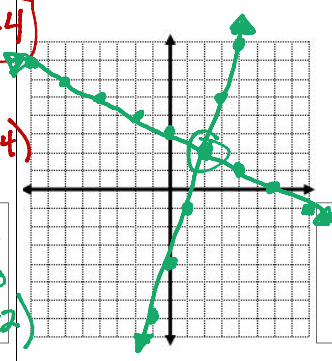
$y = \frac{5}{3}x + 3$



Answer:
Same line? No
Infinite solutions
Parallel lines? No
No solution
Intersection? (-3,-2)
Name it

3. $y = 3x - 4$

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



Answer:
Same line? no
Infinite solutions
Parallel lines? no
No solution
Intersection? (2,2)
Name it

4. $-2y - 5x = 2$

$-5x = 2y + 4$

$+4 \quad +4$

$-2y - 5x = 2$

$+5x \quad +5x$

$\frac{-2y}{-2} = \frac{5x}{-2} + \frac{2}{-2}$

$\frac{2y}{2} = \frac{-5x}{2} + \frac{4}{2}$

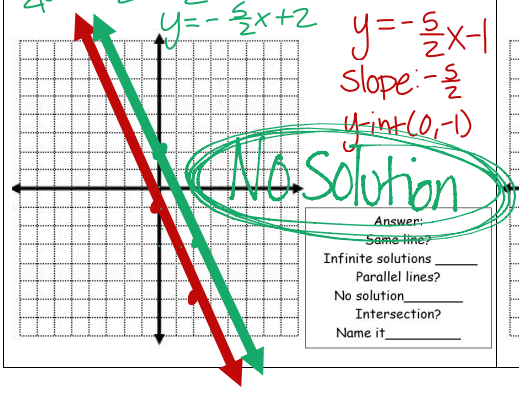
$y = -\frac{5}{2}x + 2$

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

slope: $-\frac{5}{2}$

y-int (0,-1)

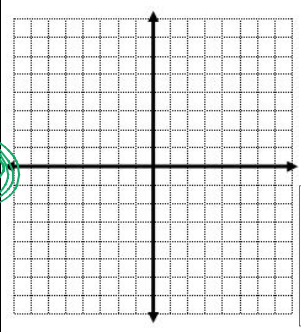
No Solution



Answer:
~~Same line?~~
Infinite solutions
Parallel lines?
No solution
Intersection?
Name it

5. $-5x + 3y = -3$

$5x - 3y = -9$



Answer:
Same line?
Infinite solutions
Parallel lines?
No solution
Intersection?
Name it

6. $-2x - y = 1$

$-6x = 3y + 3$

$-3 \quad -3$

$-8x - y = 1$

$+2x \quad +2x$

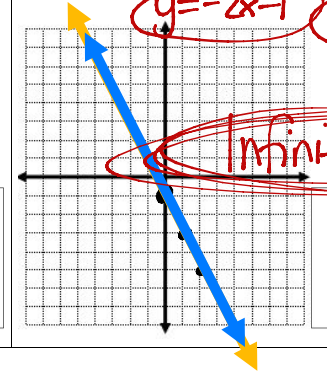
$\frac{3y}{3} = \frac{-6x}{3} - \frac{3}{3}$

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

$y = -2x - 1$

$y = -2x - 1$

Infinitely many



Answer:
Same line?
Infinite solutions
Parallel lines?
No solution
Intersection?
Name it

Graph

$$4x - 4y = 20$$

$$2x + 4y = 28$$