

WARM UP

Tell whether the ordered pair is a solution to the equation.

1. $(4, 4); y = -x + 8$
 $4 = -4 + 8 \quad 4 = 4 \checkmark$
yes
2. $(-2, 3); y = -2x - 1$
 $3 = -2(-2) - 1 \quad 3 = 4 - 1$
 $3 = 3 \checkmark$
yes
3. $(3, 2); x + 6y = 13$
 $3 + 6(2) = 13$
 $3 + 12 = 13$
 $15 \neq 13$
no
4. $(1, 3) = 4x - 3y = -5$
 $4(1) - 3(3) = -5$
 $4 - 9 = -5$
 $-5 = -5 \checkmark$
yes
5. $(-1, -2); y = 3x$
 $-2 = 3(-1)$
 $-2 \neq -3$
no
6. $(-3, 9); y = -3x$
 $9 = -3(-3)$
 $9 = 9 \checkmark$
yes
7. $(0, -1); y = 4x - 1$
 $-1 = 4(0) - 1$
 $-1 = 0 - 1$
 $-1 = -1 \checkmark$
yes
8. $(-2, 8); y = -2x - 1$
 $8 = -2(-2) - 1$
 $8 = 4 - 1$
 $8 \neq 3$
no

ESSENTIAL QUESTION

How can you use a graph to illustrate the solution to a system of linear equations?

GOAL: "I CAN. . ."

Use graphs to find approximate solutions to systems of equations."

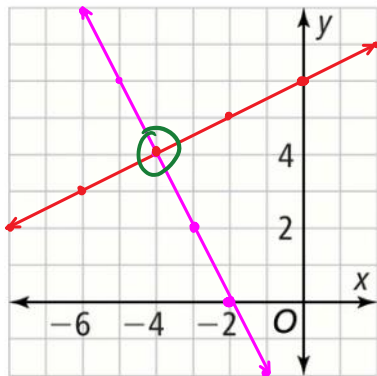
EXAMPLE 1

Graph the following equations on the same graph and see at what point the two lines intersect.

$\rightarrow y = -2x - 4$

$\rightarrow y = 0.5x + 6$

solution
 $(-4, 4)$

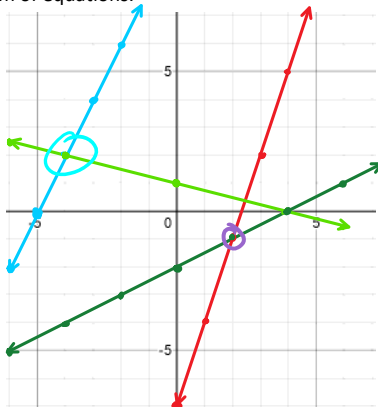


Find the solution to the following system of equations.

a. $[y = \frac{1}{2}x - 2]$ (2, -1)
 $[y = 3x - 7]$

b. $[y = 2x + 10]$
 $[y = -\frac{1}{4}x + 1]$

$(-4, 2)$



Find the solution to the following system of equations.

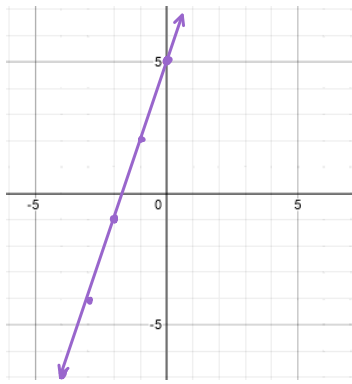
$$15x + 5y = 25$$

$$y = 5 - 3x$$

$$15x + 5y = 25$$

$$\begin{array}{r} -15x \\ \hline 5y = 25 - 15x \\ \hline y = 5 - 3x \end{array}$$

Same

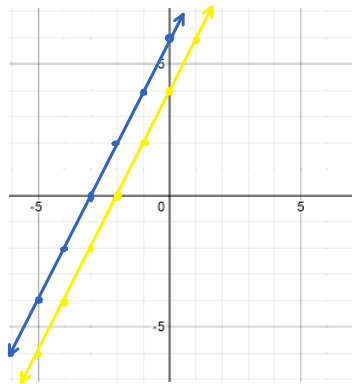


Find the solution to the following system of equations.

$$y - 2x = 6$$

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

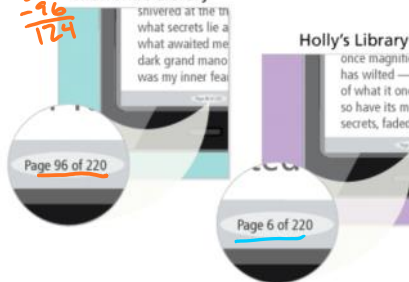
Lines are Parallel.
No solution



Monisha and Holly have 14 more days to finish reading the same novel for class. Monisha plans to read 9 pages each day, while Holly plans to read 20 pages each day. Assuming Holly and Monisha both maintain their reading plan, when will Holly catch up with Monisha? Who will finish reading the novel first?

$$M = 9x + 124$$

$$\frac{220 - 96}{124}$$



$$H = 20x + 214$$

$$\frac{220 - 6}{214}$$

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14
M	133	142	151	160	169	178	187	196	205	214	223	232	241	250
H	220	240	260	280	300	320	340	360	380	400	420	440	460	480

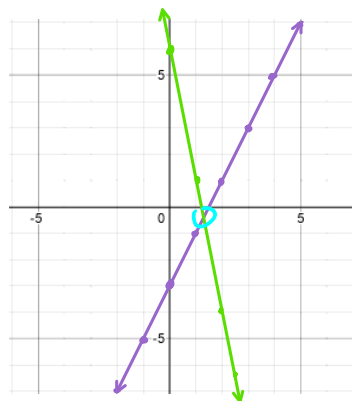
- on the 9th day.
- Holly finishes in 11 days as Monisha will go onto the 14th day.

Find the solution to the following system of equations.

$$y = 2x - 3$$

$$y = -5x + 6$$

$$\approx (1.2, -4)$$

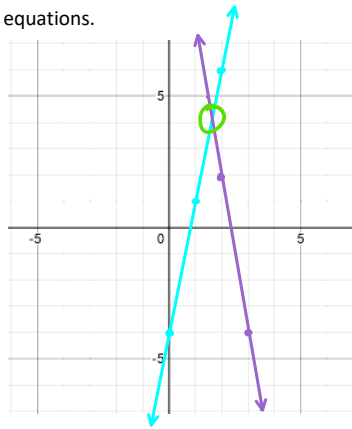


Find the solution to the following system of equations.

$$y = 5x - 4$$

$$y = -6x + 14$$

$$\approx (1.6, 4.1)$$



Ending Questions

If equations are parallel, what is the same about them? *slopes are =.*

When will a system of equations have no answer?

when they are parallel.

When will a system of equations have INFINITE answers?

when they are the same line

When will a system of equations require an approximation for an answer?

*when they don't cross exactly @
a coordinate point.*

HOMWORK

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9, 10, 11, 13-23, 28