Warm Up 3/11

Find the common solution for the following system of equations:

$$\begin{cases} -2x + y = -11 \\ 5x - 3y = 30 \end{cases}$$

Let's isolate y:

$-2x + y = -11$

$+2x \quad +2x$

$y = 2x - 11$

$5x - 3y = 30$

$-5x \quad -5x$

$\frac{-3y}{-3} = \frac{-5x}{-3} + \frac{30}{-3}$

$y = \frac{5}{3}x - 10$

$2x - 11 = \frac{5}{3}x - 10$

$+11 \quad +11$

$3\left[2x = \frac{5}{3}x + 1\right]$

$6x = 5x + 3$

$-5x \quad -5x$

$x = 3$

$-2x + y = -11$

$-2(3) + y = -11$

$-6 + y = -11$

$+6 \quad +6$

$y = -5$

$(3, -5)$

Get out your homework, any questions?

Homework Questions?

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Solve each system of equations.

3. $\begin{cases} y = 6x + 4 \\ y = 4x - 2 \end{cases}$
4. $\begin{cases} y = 3x + 7 \\ y = 5x - 7 \end{cases}$
5. $\begin{cases} y = -2x - 9 \\ y = 12x + 19 \end{cases}$
6. $\begin{cases} y = -x + 16 \\ y = -x - 8 \end{cases}$
7. $\begin{cases} y = 17x - 6 \\ y = 12x + 44 \end{cases}$
8. $\begin{cases} y = -20x + 14 \\ y = -8x - 44 \end{cases}$

#6

$-x+16 = -x-8$

$+8 \quad +8$

$-x+24 = -x$

$+x \quad +x$

$24 = 0$

This could mean

False statement → No solutions or infinite solutions

No solution means parallel lines

$y = -x + 16$ $\quad y = -x - 8$

Same slope — Different y-intercepts

We DO have parallel lines

#5 $y = -2x - 9$

$y = 12x + 19$

$-2x-9 = 12x+19$

$+2x \quad +2x$

$-9 = 14x+19$

$-19 \quad -19$

$\frac{-28}{14} = \frac{14x}{14}$

$-2 = x$

$y = -2(-2) - 9$

$y = 4 - 9$

$y = -5$

$(-2, -5)$

Classwork

Page 33, #'s 9-16

For Exercises 9–14, write the equation in $y = mx + b$ form.

9. $4x + 6y + 12 = 0$

10. $-7x + 9y + 4 = 0$

11. $-4x - 2y - 6 = 0$

12. $-x + 4y = 0$

13. $2x - 2y + 2 = 0$

14. $25x + 5y - 15 = 0$

15. A sixth-grade class sells pennants and flags. They earn $1 profit for each pennant sold and $6 profit for each flag sold. They sell 50 items in total for a profit of $115.

a. Write two equations that represent the relationship between the number of pennants sold p and the number of flags sold f.

b. How many pennants and how many flags were sold?

16. A seventh-grade class sells mouse pads and cell phone cases with their school logo on them. The class earns $2 profit for each mouse pad sold and $4 profit for each cell phone case sold. They sell 100 items in total for a profit of $268.

a. Write two equations that represent the relationship between the number of mouse pads sold m and the number of cell phone cases sold c.

b. How many mouse pads and how many cell phone cases were sold?

Homework

Finish Classwork

1. Define variables

Let x =

Let y =

2. Look for TOTALS & then create equations

3. Solve for x and y