Manipulating Equations

In order to graph linear functions we often times want to get the function in **slope-intercept form** $y = mx + b$. To do this, undo all of the operations connected with the y and then move terms around so it looks the way you want it.

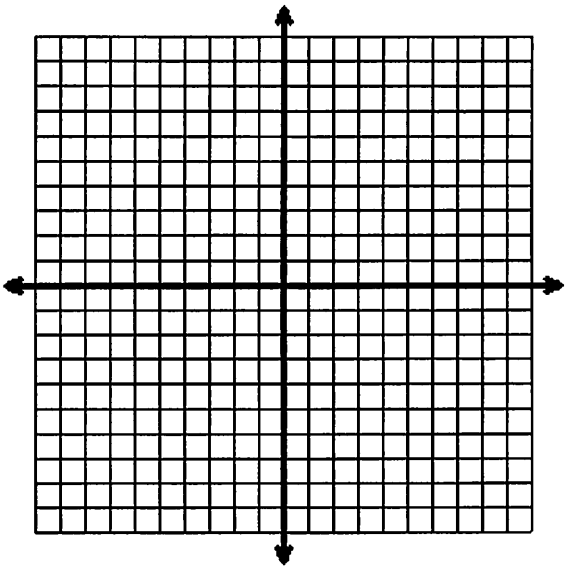
$y + 5 = 3x$ Slope: _____ Y-Intercept: _____	$-2y = 4x - 8$ Slope: _____ Y-Intercept: _____	$\frac{y}{8} + 1 = x$ Slope: _____ Y-Intercept: _____
$y - 4x = 2x + 7$ Slope: _____ Y-Intercept: _____	$3y - 2x = 12$ Slope: _____ Y-Intercept: _____	$x - 2y = 10$ Slope: _____ Y-Intercept: _____

On Your Own:

Solve and Check the System of Equations

A: $2y = x + 4$

B: $y + x = 5$



Solution:

_____

Check:

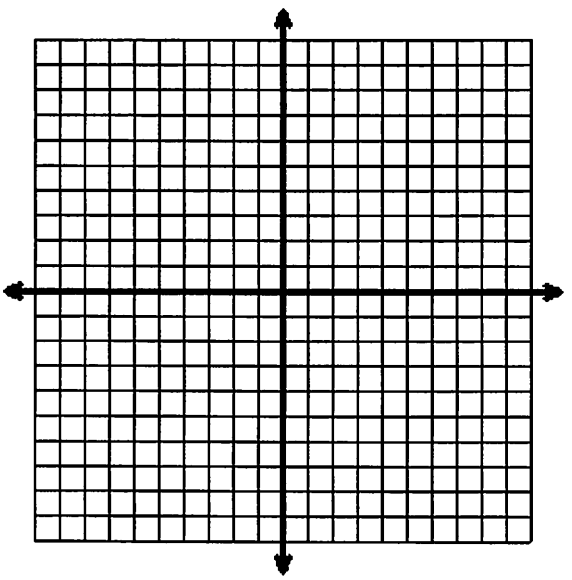
A:

B:

Solve and Check the System of Equations

A: $3x + 4y = 12$

B: $2x + 4y = 8$



Solution:

_____

Check:

A:

B:

Manipulating Equations

In order to graph linear functions we often times want to get the function in **slope-intercept form** $y = mx + b$. To do this, undo all of the operations connected with the y and then move terms around so it looks the way you want it.

$3x + 5 = 10$

$y + 5 = 3x$ $-5 \quad -5$ $y = 3x - 5$ Slope: $\frac{3}{1}$ Y-Intercept: $(0, -5)$	$-2y = 4x - 8$ $\frac{}{-2} \quad \frac{}{-2} \quad \frac{}{-2}$ $y = -2x + 4$ Slope: $\frac{-2}{1}$ Y-Intercept: $(0, 4)$	$\frac{y}{8} + 1 = x$ $-1 \quad -1$ $8 \cdot \frac{y}{8} = (x - 1) \cdot 8$ $y = 8x - 8$ Slope: $\frac{8}{1}$ Y-Intercept: $(0, -8)$
$y - 4x = 2x + 7$ $+4x \quad +4x$ $y = 6x + 7$ Slope: 6 Y-Intercept: $(0, 7)$	$3y - 2x = 12$ $+2x \quad +2x$ $\frac{3y}{3} = \frac{2x}{3} + \frac{12}{3}$ $y = \frac{2}{3}x + 4$ Slope: $\frac{2}{3}$ Y-Intercept: $(0, 4)$	$1x - 2y = 10$ $-1x \quad -1x$ $\frac{-2y}{-2} = \frac{-1x}{-2} + \frac{10}{-2}$ $y = \frac{1}{2}x - 5$ Slope: $\frac{1}{2}$ Y-Intercept: $(0, -5)$

On Your Own:

Solve and Check the System of Equations

A: $2y = x + 4$

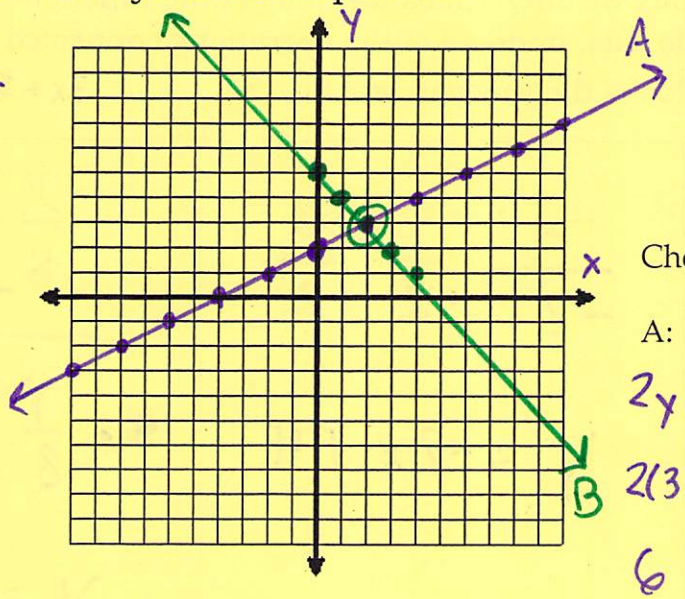
$\frac{2y}{2} = \frac{x}{2} + \frac{4}{2}$

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

B: $y + 1x = 5$

$-1x \quad -1x$

$y = -1x + 5$



Solution: (2, 3)

Check:

A: $2y = x + 4$

$2(3) = 2 + 4$

$6 = 6$ ✓

B: $y + x = 5$

$3 + 2 = 5$

$5 = 5$ ✓

Solve and Check the System of Equations

A: $3x + 4y = 12$

$-3x \quad -3x$

$\frac{4y}{4} = \frac{-3x}{4} + \frac{12}{4}$

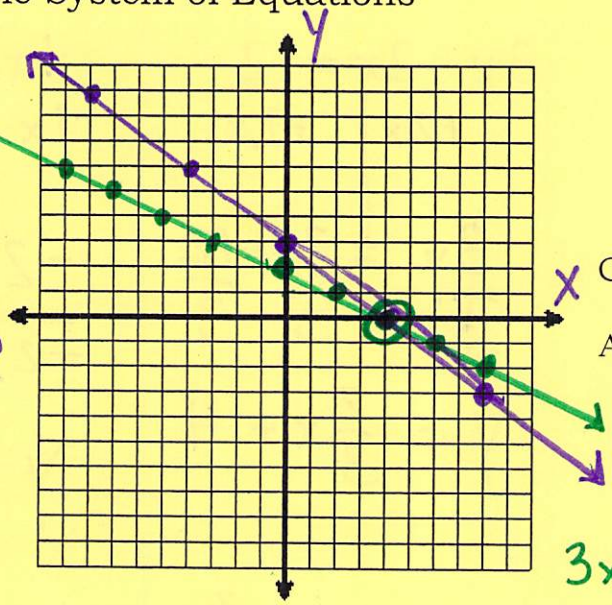
$y = -\frac{3}{4}x + 3$

B: $2x + 4y = 8$

$-2x \quad -2x$

$\frac{4y}{4} = \frac{-2x}{4} + \frac{8}{4}$

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



Solution: (4, 0)

Check:

A: $3x + 4y = 12$

$3(4) + 4(0) = 12$

$12 = 12$

B: $2x + 4y = 8$

$2(4) + 4(0) = 8$

$8 = 8$ ✓