AA – Section 5.3 Notes – Writing Equations in Slope Intercept Form

Objectives:

- Converting equations to slope-intercept form, $y = mx + b$; and graphing the equations
- Writing equations and graphing horizontal and vertical lines...*HOYVUX*

Slope Intercept Form: $y = mx + b$

Where *m* is the slope and *b* is the y-intercept, which is where the line crosses the y-axis.

Your goal here is to get the *y* by itself. Therefore, you will move any term that is on the same side of the equation as the *y* term by adding or subtracting. Then if *y* has a coefficient other than positive one, you must divide all terms by that number. Make sure you final equation is in the proper order, $y = mx + b$. Next, graph the line.

Examples –

1. $x + y = 6$

$-x \quad -x$

$y = -x + 6$

2. $x - y = -3$

$-x \quad -x$

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

$y = x + 3$

3. $-4 + x = y$

$y = x - 4$

4. $y + 5 = 2x$

$-5 \quad -5$

$y = 2x - 5$

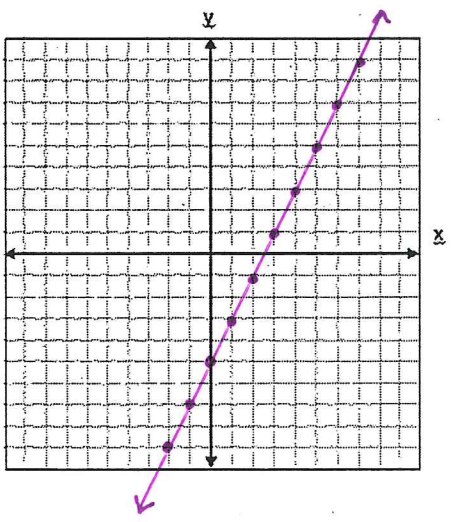
5. $y + 7x = 8$

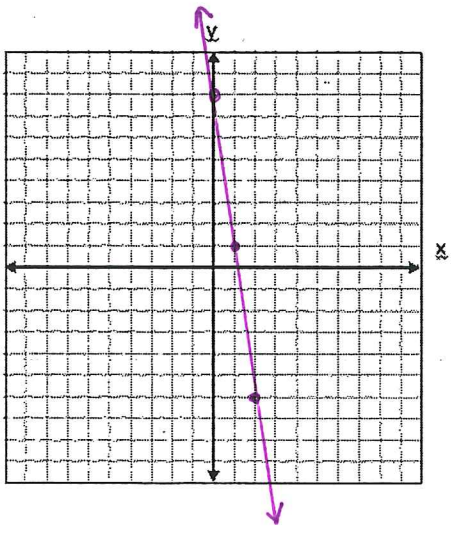
$-7x \quad -7x$

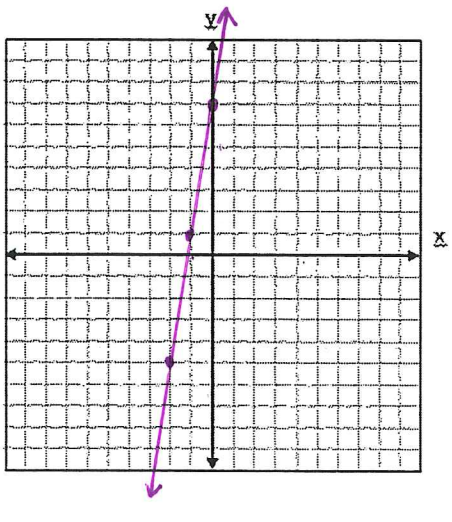
$y = -7x + 8$

6. $\frac{2y}{2} = \frac{12x}{2} + \frac{14}{2}$

$y = 6x + 7$





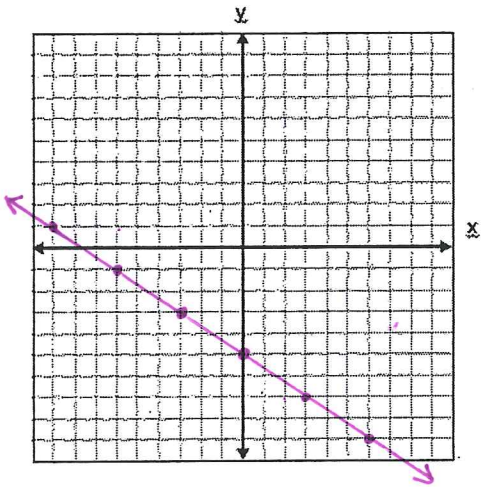


7. $3y + 15 = -2x$

$-15 \quad -15$

$\frac{3y}{3} = \frac{-2x}{3} - \frac{15}{3}$

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

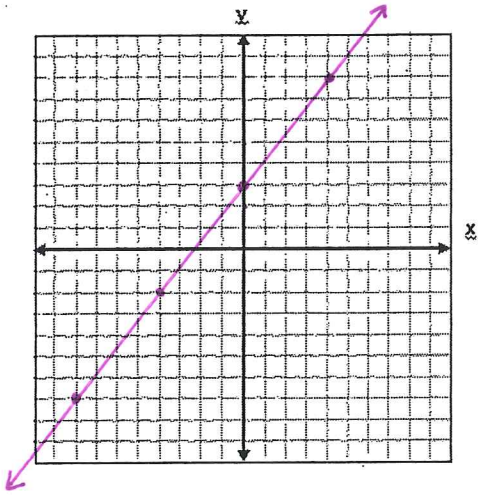


8. $4y - 12 = 5x$

$+12 \quad +12$

$\frac{4y}{4} = \frac{5x}{4} + \frac{12}{4}$

$y = \frac{5}{4}x + 3$

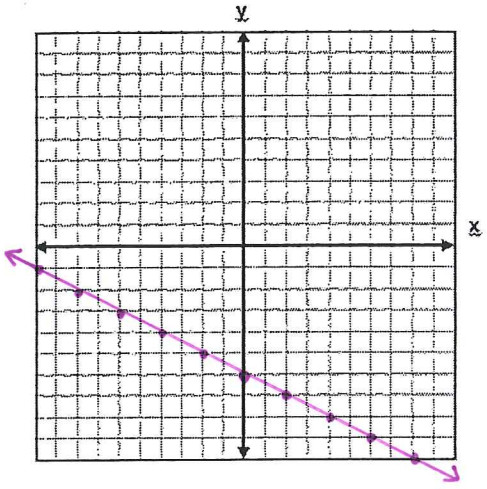


9. $-2y - x = 12$

$+x \quad +x$

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

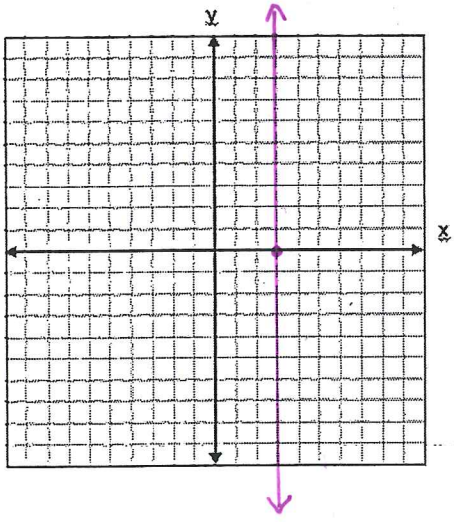
$y = -\frac{1}{2}x - 6$



10. $x - 3 = 0$

$+3 \quad +3$

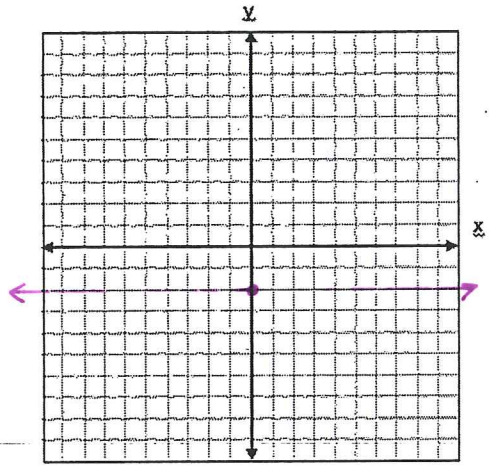
$x = 3$



11. $y + 2 = 0$

$-2 \quad -2$

$y = -2$



12. $6x + 4y = -12$

$-6x \quad -6x$

$\frac{4y}{4} = \frac{-6x}{4} - \frac{12}{4}$

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