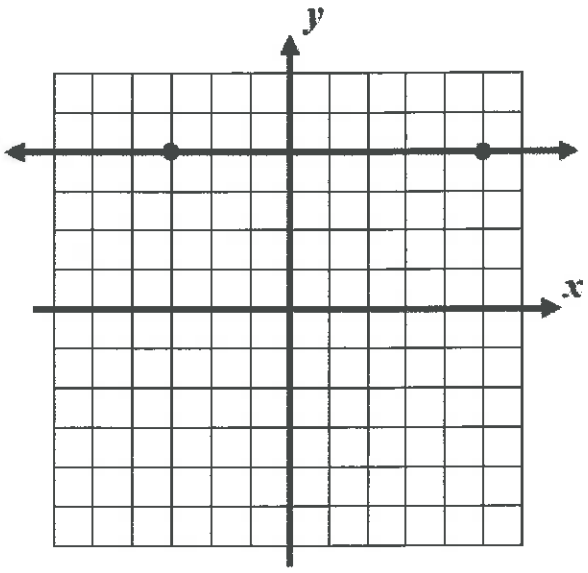
Algebra 1R
Unit 3 ~ Day 4 Notes

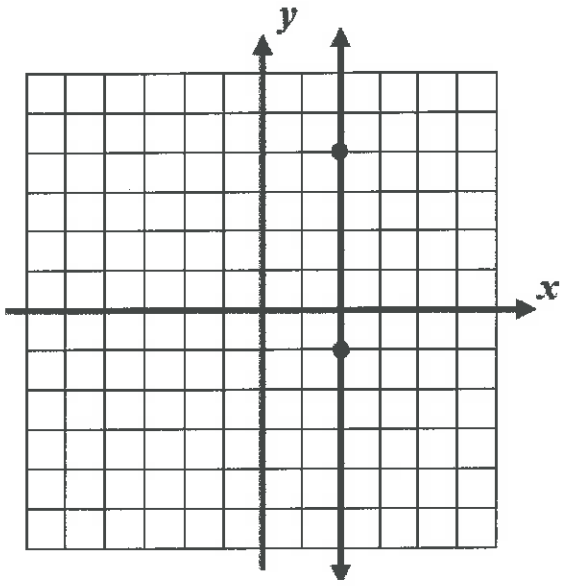
Name _____

HORIZONTAL AND VERTICAL LINES

Although they don't fit the classic linear model, it is important to understand how we write equations for **horizontal and vertical lines**. The first exercise will illustrate the idea.

***Exercise* #1:** Shown below are a horizontal line and a vertical line.





HORIZONTAL LINE

Write down two coordinate points:

(-3, 4) & (5, 4)

What do they share in common?

the y value.

What is this line's equation?

y = 4

VERTICAL LINE

Write down two coordinate points:

(2, 4) and (2, -1)

What do they share in common?

the x value

What is this line's equation?

x = 2

HORIZONTAL AND VERTICAL LINES

Horizontal Line: y = constant **Vertical Line:** x = constant

(Constants can be determined by using any point the line passes through)

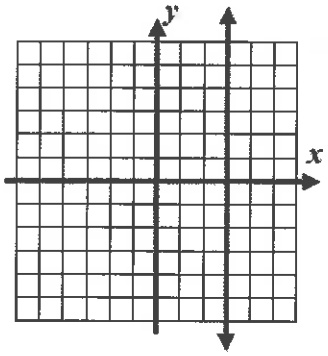
***Exercise* #2:** Which of the following equations represents a vertical line that passes through the point $(5,-3)$?

(1) $y=-3$ (3) $y=-3x+5$

(2) $x=5$ (4) $y=5x-3$

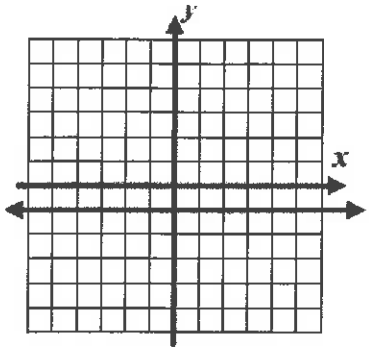
***Exercise* #3:** For each of the following, give the equation of the line shown or described.

a)



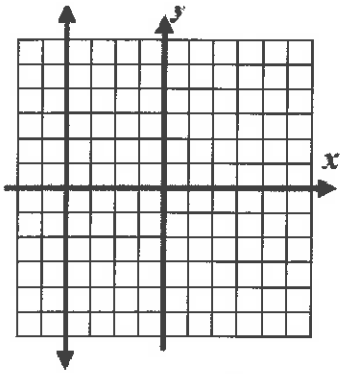
EQUATION: $x=3$

b)



EQUATION: $y=-1$

c)



EQUATION: $x=-4$

***Exercise* #4:** Graph each of the following.

$y=2x-4$

$m=2$ $y\text{ int}=-4$

$x=-1$

$y=2$