Algebra 1

Name_____ ID: 1

3.4 Graphing Linear Functions

Date_____ Algebra _____

1) Consider the function: $y = -3x + 6$

    a. Go to Y= in the graphing calculator and clear out anything that is in the y=.

    b. Enter the equation above into Y1.   *the X button is to the right of the GREEN alpha button*

    c. Go to the TABLE in the calculator (click 2nd then graph - upper right hand corner).

    d. Fill in the table to the right:

    e. Using the information you got from the table, graph the line:
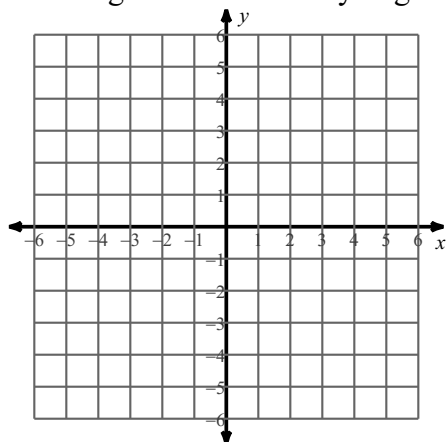
2) a. Click the GRAPH button (upper right hand corner) to see the graph of $y = -3x + 5$. Check to see that your graph from #2 looks the same as the graph in the calculator.

    b. Click the TRACE button. You should see a X= and Y= at the bottom of your screen. Use the < and > arrow keys to move the flashy blinky on the line and change the x=values.   Use this trace function to fill in the following table:

    c. We already know about the Y-intercept of a line, using that definition, What is the definition of the X-intercept of a line?

    d. Use the trace function to find the x-intercept of the line. (if you cannot find the exact x-intercept, press the ZOOM button and click ZOOM IN and try again).
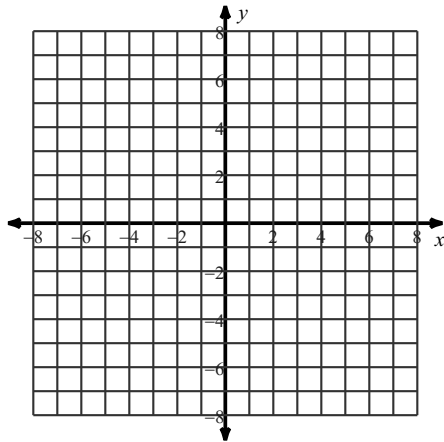
3) let $f(x) = \dfrac{3}{2}x - 3$

when entering fractions into your calculator you must put parenthesis around them!

a. Graph the line in your calculator and sketch it on the graph below.

b. Use the Table or the Trace function to fill in the table:

c. List the y intercept and the x-intercept of the line:

4) Let $b(x) = 2x - 10$

   a. what is b(2)?

   b. Find x, so that $b(x) = 22$

   c. What is the function value when x =-8?

5) Let $w(x) = \dfrac{2}{3}x + 1$
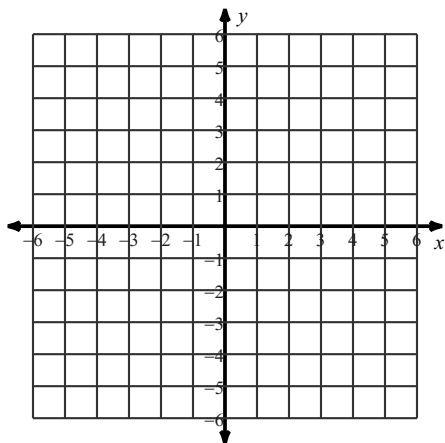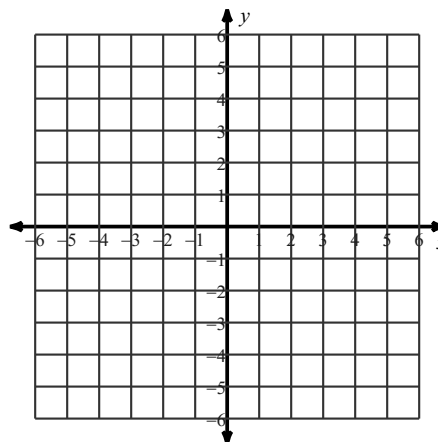
   a. what is w(-12)

   b. Find x, so that $w(x) = 3$

   c. What is the function value when x =15?
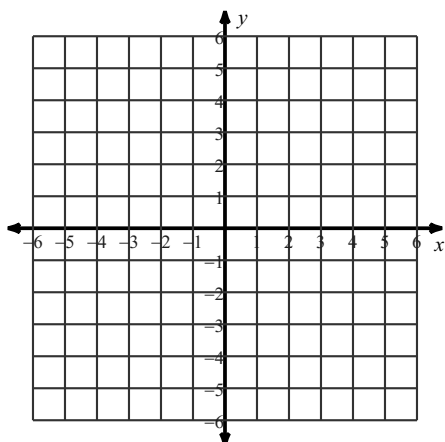
-2-

Sketch the graph of each line.
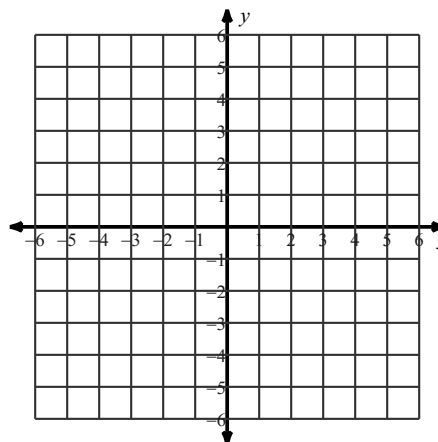
6) $y = -\dfrac{9}{5}x - 5$

7) $x = 4$

8) $y = x + 1$

9) $y = -\dfrac{4}{3}x$

Re-write each equation in slope-intercept form.

10) $9x - 2y = -6$

11) $6x - 5y = 0$

-3-

Write the slope-intercept form of the equation of the line through the given point with the given slope.

12) through: $(1, -4)$, slope $= -2$

Write the slope-intercept form of the equation of the line through the given points.

13) through: $(-3, 1)$ and $(3, -1)$

Answer each of the questions for the given function.

14) Let $g(x) = -3x - 6$

    a. What type of line is this? (increasing, decreasing, horizontal, vertical?)

    b. What is the y-intercept of the line? (write your answer as a coordinate point)

    c. What is the x-intercept of the line? (write your answer as a coordinate point)

    d. What is g(4) ?

    e. when does g(x) = -30?

15) Let $h(x) = -4$

    a. . What type of line is this (increasing, decreasing, horiztonal or vertical?)

    b. What is the y-intercept of the line? (write your answer as a coordinate point)

    c. What is the x-intercept of the line? (write your answer as a coordinate point)

    d. What is h(3) ?

    e. when does h(x) = 2?