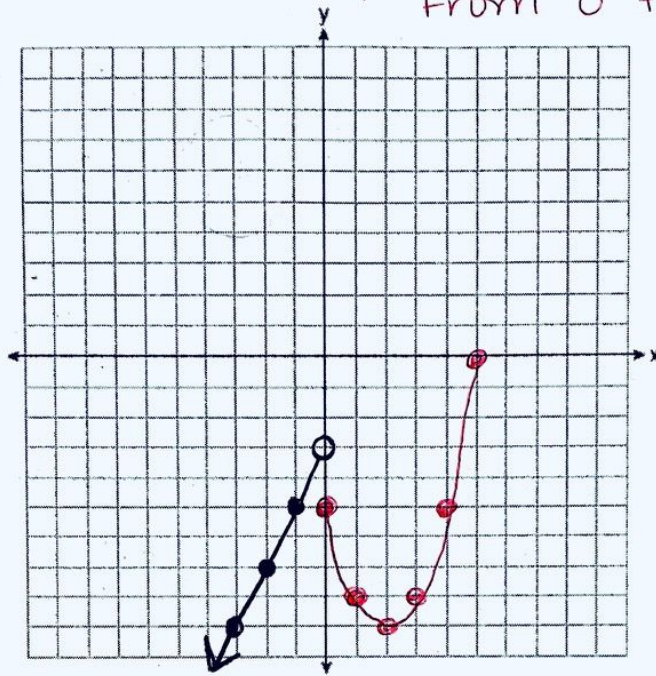


Show ALL work for each problem.

- (1) Graph the function: $h(x) = \begin{cases} 2x-3, & x < 0 \\ x^2-4x-5, & 0 \leq x \leq 5 \end{cases}$
- choose x-values less than 0
 use x-values from 0 to 5

$$y = 2x - 3$$

x	y
0	-3
-1	-5
-2	-7
-3	-9



$$y = x^2 - 4x - 5$$

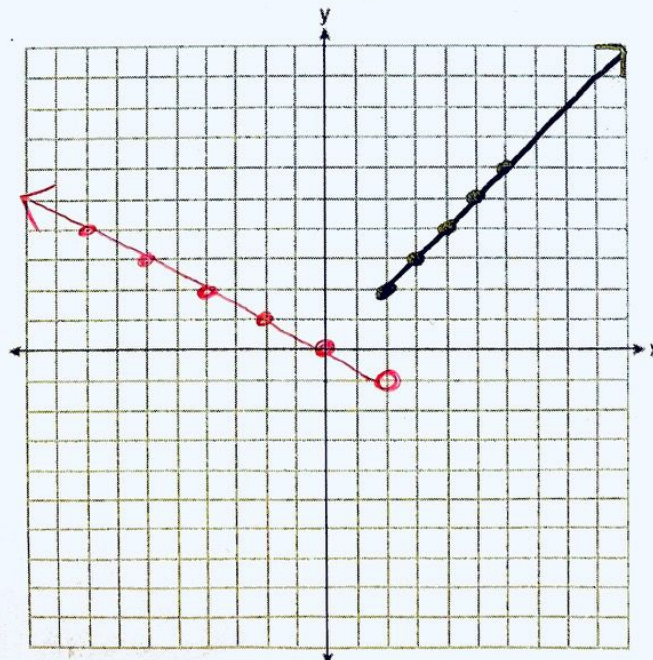
x	y
0	-5
1	-8
2	-9
3	-8
4	-5
5	0

- (2) On the set of axes below, graph the piecewise function:

$$f(x) = \begin{cases} -\frac{1}{2}x, & x < 2 \\ x, & x \geq 2 \end{cases}$$

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

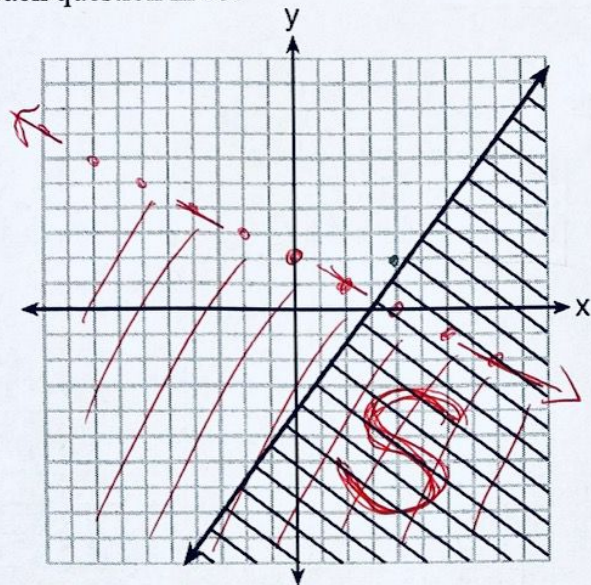
x	y
2	-1
1	1/2
0	0
1	1/2
-2	1



$$y = x$$

x	y
2	2
3	3
4	4
5	5

Use the graph below to answer each question in #3.



$$m = \frac{4}{3}$$

$$b = -4$$

(3) A) Write the inequality represented in the graph above.

$$y \leq \frac{4}{3}x - 4$$

B) State a coordinate that is in the solution set of the inequality. $(4, -1)$ or any other point in shaded region.

C) On the same set of axes, graph the inequality $2x + 4y < 8$.

Solve for y

$$\begin{array}{r} 2x + 4y < 8 \\ -2x \quad -2x \\ \hline 4y < -2x + 8 \end{array}$$

D) The two inequalities graphed on the set of axes form a system.

Is the point $(4, 2)$ a solution to the system? Explain your reasoning.

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

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

NO, it is not in the double shaded region.

(4) What is the solution of $3(2m - 1) \leq 4m + 7$?

a. $m \leq 5$

b. $m \geq 5$

c. $m \leq 4$

d. $m \geq 4$

$$\begin{array}{r} 6m - 3 \leq 4m + 7 \\ -4m \quad -4m \\ \hline 2m - 3 \leq 7 \end{array}$$

$$\begin{array}{r} 2m - 3 \leq 7 \\ +3 \quad +3 \\ \hline 2m \leq 10 \end{array}$$

$$\frac{2m}{2} \leq \frac{10}{2}$$

$$m \leq 5$$