Math E-3 Assignment 9

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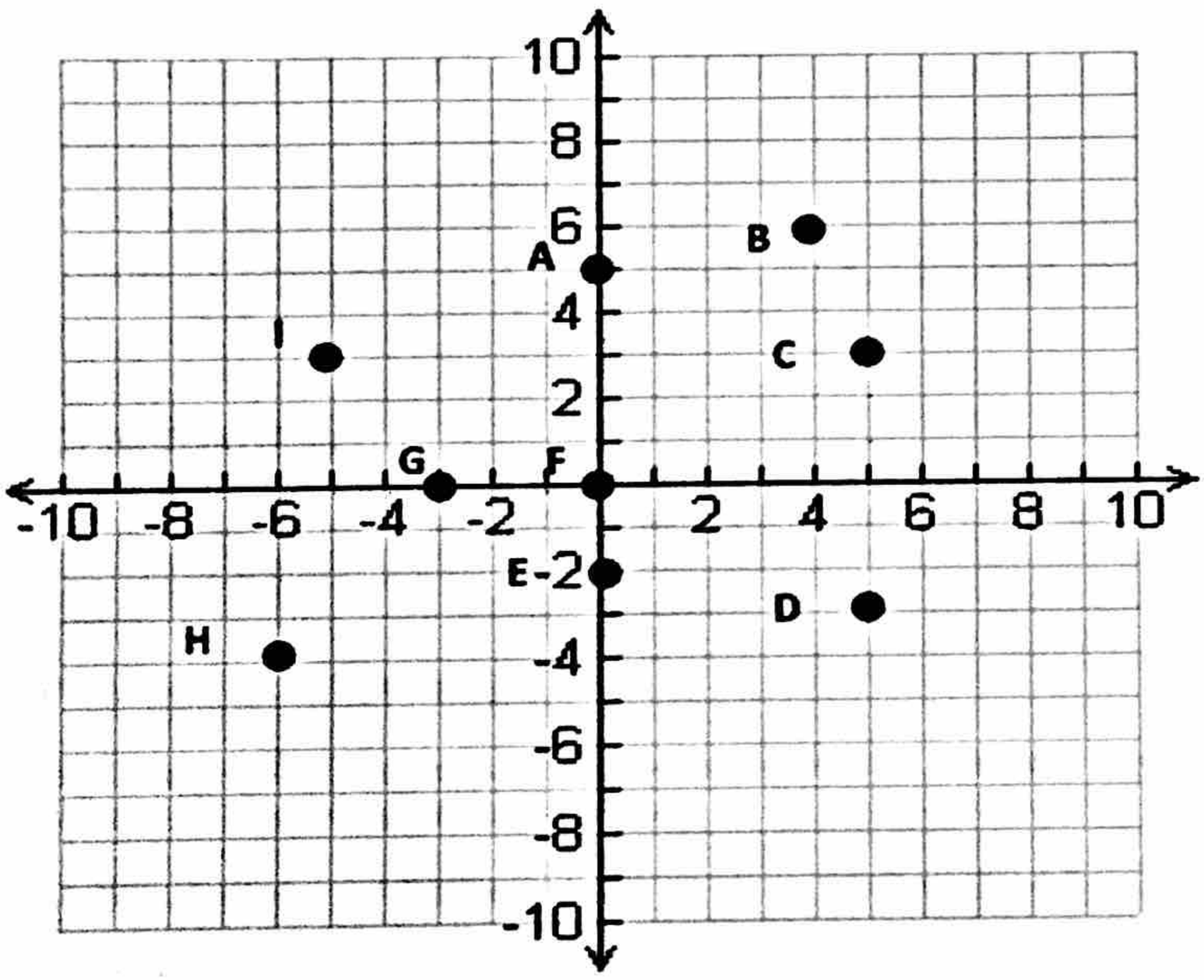
Problems 1-9 (2 pts each)

Give the coordinates of each labeled point in the graph below. Note that the dots are quite large so give the points to the nearest WHOLE values. Please write the coordinates in the space provided next to the graph next to each letter. Do not write the answer on the graph itself. Use a ruler to help you. Remember, the horizontal or x-axis value is first in the parentheses and the vertical, y-value, is next.



Point A

1. (0, 5)

Point B

2. (4, 6)

Point C

3. (5, 3)

Point D

4. (5, -3)

Point E

5. (0, -2)

Point F

6. (0, 0)

Point G

7. (-3, 0)

Point H

8. (-6, -4)

Point I

9. (-5, 3)

Problems 10-13 (2 pts each)

Find the slope of the line joining the following points. Use the examples in the chapter to help you. Show your work.

$$m = \frac{(y_2)-(y_1)}{(x_2)-(x_1)} \quad \text{or} \quad \frac{(y_1)-(y_2)}{(x_1)-(x_2)}$$

10) (3,7) and (-4,6)

$$m = \frac{(7)-(6)}{(3)-(-4)} = \frac{1}{7}$$

11) (8,1) and (9,2)

$$m = \frac{(1)-(2)}{(8)-(9)} = \frac{-1}{-1} = 1$$

12) (4,8) and (4,10)

$$m = \frac{(8)-(10)}{(4)-(4)} = \frac{-2}{0} = \text{undefined (vertical line)}$$

13) (6,-2) and (9,-2)

$$m = \frac{(-2)-(-2)}{(6)-(9)} = \frac{0}{-3} = 0 \text{ (horizontal line)}$$

Problem 14-21 (1 pt each)

PLOT each of the following points on the same set of axes below and label your points with the letter. (It will look similar to problem 1-9 above.)

14) Point A (2,0)

15) Point B (0, -3)

16) Point C (-4,2)

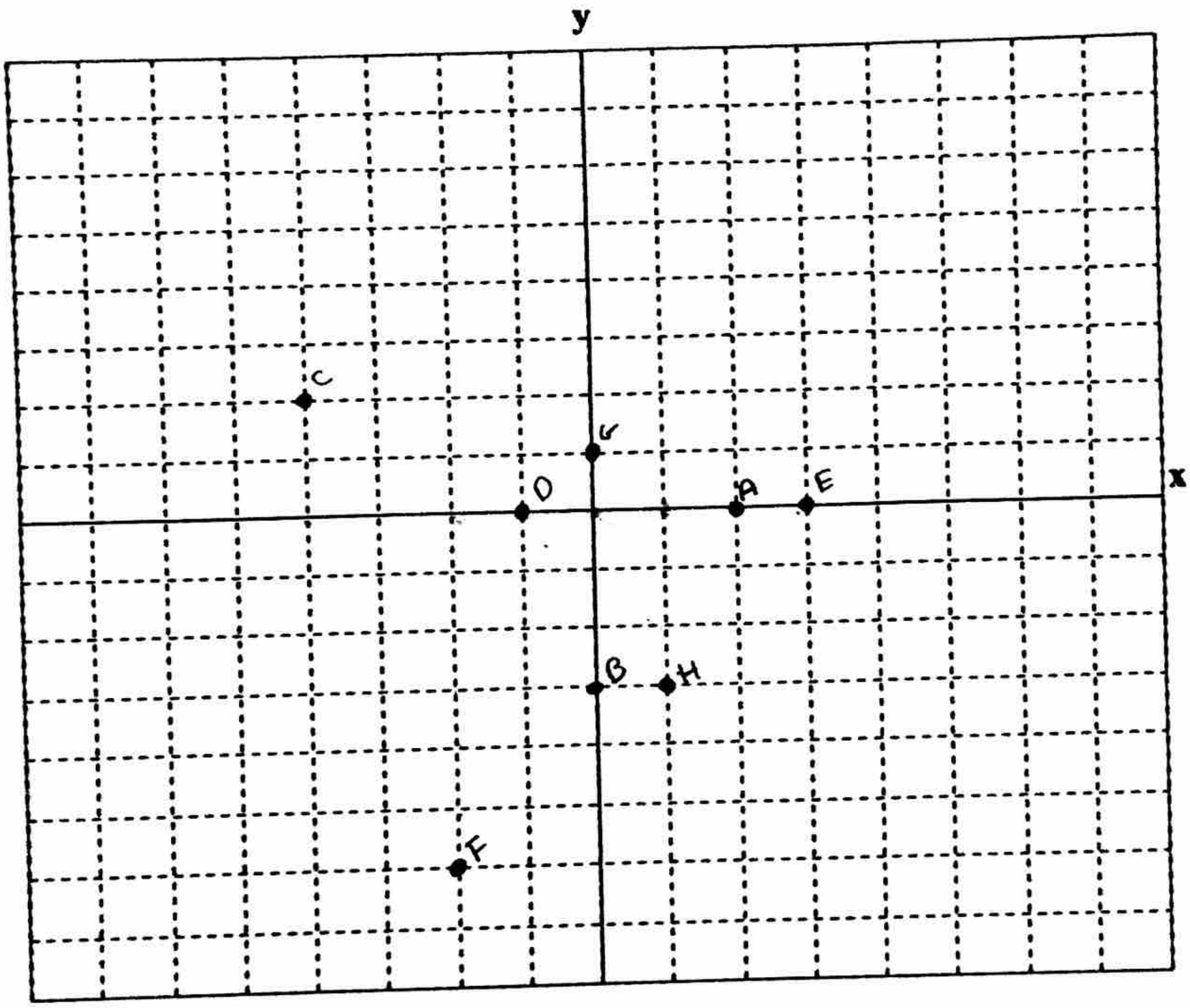
17) Point D (-1,0)

18) Point E (3, 0)

19) Point F (-2, -6)

20) Point G (0, 1)

21) Point H (1,-3)



Problems 22-24 (1 pt each)

Given the following equation of a line:

$$Y = -4X + 6 \qquad Y = mX + b$$

22) What is the slope? $m = -4$

23) What is the y-intercept? b = 6

24) What are the coordinates of this y-intercept? (0 , 6)

Problems 25-27 (1 pt each)

Given the following equation of a line:

$$Y = 4/5\,X - 8 \qquad Y = mX + b$$

25) What is the slope? m = 4/5 or .8

26) What is the Y-intercept? b = -8

27) What are the coordinates of the X-intercept? (10 , 0)

$Y = 4/5X - 8$

$0 = \frac{4}{5}X - 8 \rightarrow 0 = .8X - 8$

$+8 \qquad +8$

$\frac{8}{.8} = \frac{.8x}{.8}$

$x = 10$ ←

Problem 28 (8 points)

Graph the following two equations (A) and (B) on the same set of axes using the grid on the next page. Label your lines with each equation.

(A) $Y = 4x - 2$

(B) $Y = 2x + 2$

Use the charts below to document your points (you only need two points per line but you can have more):

X	Y
-1	-6
0	-2
1	2

$-6 = 4(-1) - 2$

$-2 = 4(0) - 2$

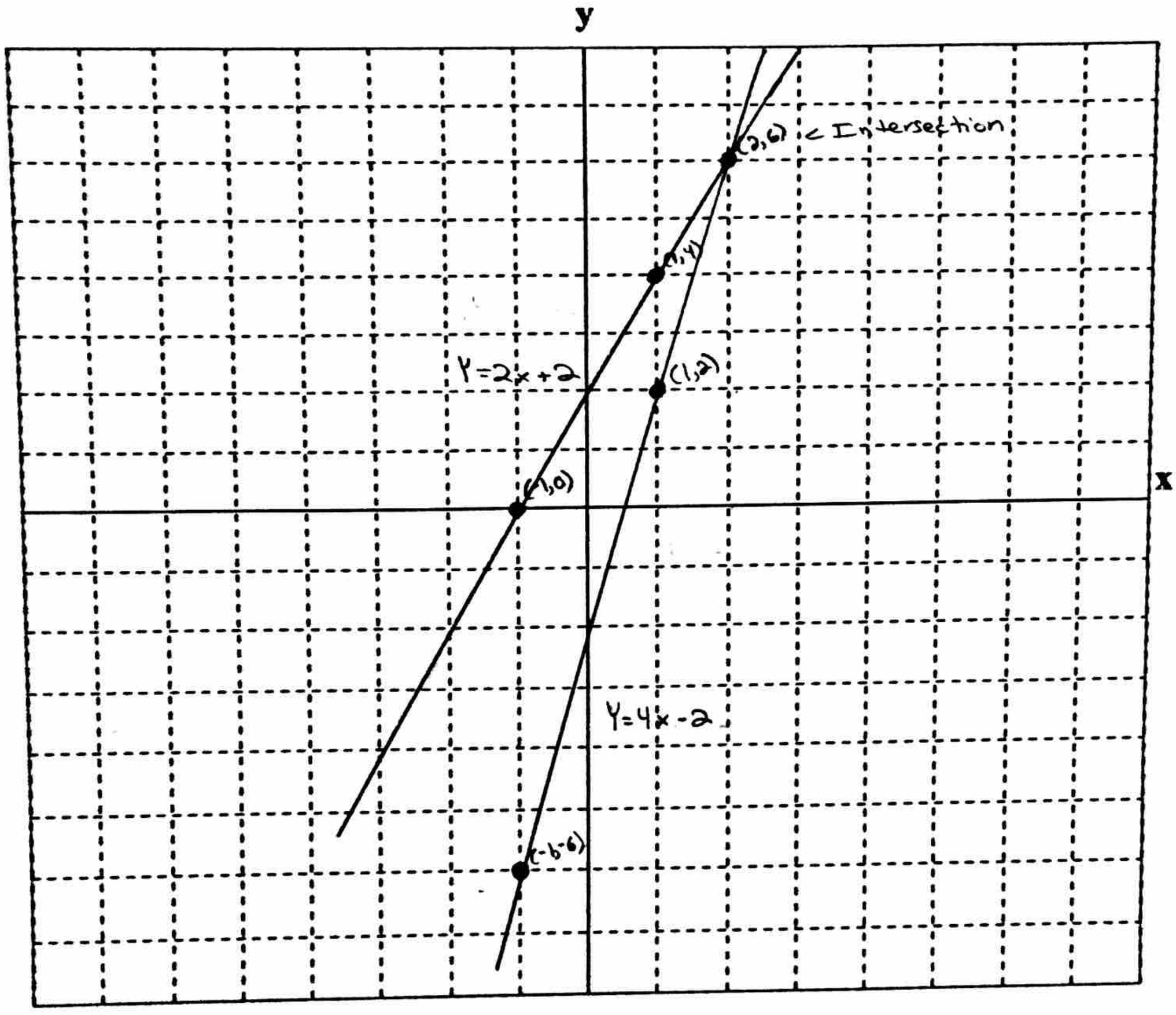
$2 = 4(1) - 2$

X	Y
-1	0
0	2
1	4

$0 = 2(-1) + 2$

$2 = 2(0) + 2$

$4 = 2(1) + 2$


y
x
(2,6) < Intersection
(1,4)
(1,2)
Y=2x+2
(1,0)
(-6,-6)
Y=4x-2

Problem 29 (2 pts)

Guess the coordinates of the point of where the two lines intersect from the graph you drew above, or you can solve algebraically if you know how. Write the coordinates below and on your graph.

Solve for the intersection (calculating this algebraically is optional as you can use your graph to guess).

Solve for x first

$4x - 2 = 2x + 2$

$+2 \qquad +2$

$4x = 2x + 4$

$-2x \quad -2x$

$\frac{2x}{2} = \frac{4}{2} \quad x = 2$

Plug in x (we only need one)

$Y = 4(2) - 2$

$8 - 2$

$Y = 6$

$Y = 2(2) + 2$

$4 + 2$

$Y = 6$

Intersection:

(2 , 6)