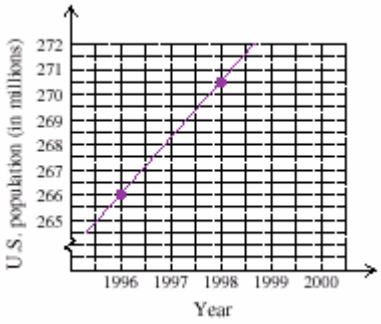
Worksheet Chapter 3 Name _____

Direction: Write neatly; show your work in an organized fashion.

1. Find the slope of the line containing the points (6, 8) and (-2, -4).

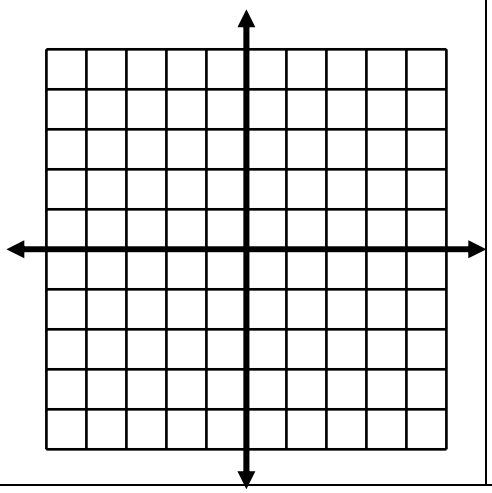
2. The following graph shows data for the size of the U.S. population. At what rate has the population been growing?
The points are (1996, 266) and (1998, 270.5)



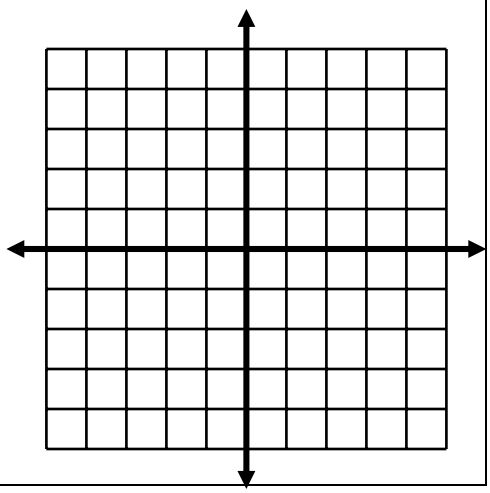
3. Write the point-slope equation of the line with a slope of -1/2 through the point (3, 6). Then simplify it into the slope-intercept form.

4. Find the slope and the y-intercept point of the line given by the equation 2x + 4y = 20

5. Graph 5x – 2y = 10



6. Graph y = -4

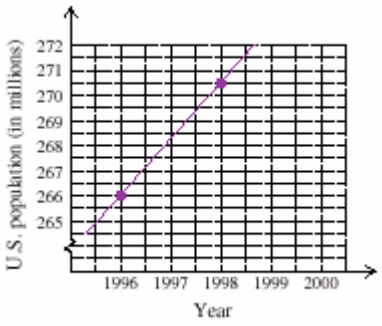


Worksheet 3 **SOLUTIONS**

1. Find the slope of the line containing the points (6, 8)=(x_1 y_1) and (-2, -4)=(x_2 y_2).

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$
$$= \frac{-4-8}{-2-6}$$
$$= \frac{-12}{-8}$$
$$= \frac{3}{2}$$

2. The following graph shows data for the size of the U.S. population. At what rate has the population been growing?



$$m = \frac{y_2 - y_1}{x_2 - x_1}$$
$$= \frac{270.5 - 266}{1998 - 1996}$$
$$= \frac{4.5}{2}$$
$$= 2.25 \text{ mill. per year}$$

3. Write the point-slope equation of the line with a slope of -1/2 through the point (3, 6). Then simplify it into the slope-intercept form.

m = -½, x_1 = 3 and y_1 = 6.
$y - y_1 = m(x - x_1)$ so
y – 6 = -½ (x – 3) is the point-slope equation.
Now, simplify by multiplying both sides by 2.
(2)(y – 6) = (2)(-½)(x – 3)
(2)(y – 6) = (-1)(x – 3), the 2 and the ½ cancel.
2y – 12 = -x + 3
+ 12 +12 add 12 to both sides
2y = -x + 15
2 2 div 2 on both sides

$$y = \frac{-x+15}{2} = -\tfrac{1}{2}x + \tfrac{15}{2}$$

4. Find the slope and the y-intercept point of the line given by the equation 2x + 4y = 20.

Get y by itself and you have the slope-intercept equation which tells you m and b.
2x + 4y = 20
-2x -2x subt 2x on both sides
4y = -2x + 20
4 4 div 4 on both sides

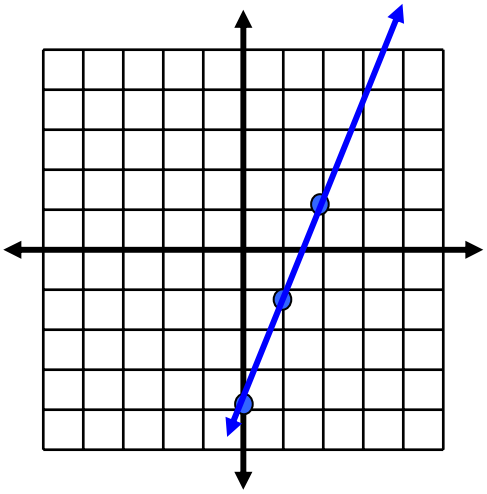
y = -½ x + 5

so the slope, m = -½
and the y-intercept point is (0, 5)

5. Graph 5x – 2y = 10

Make a table of 3 points.
You may have different points, but it should be the same line.

X	Y
0	-5
2	0
1	-2.5



6. Graph y = -4

All equations where y = a number from a horizontal line. So if you recognize the equation type, then the graph is easy.