Name: _____
Date: _____ Block: _____

Linear Relations Worksheet #1

Mrs. van der Vossen Math 9

1. In the expression $\frac{3}{1}x + 5$
   what is the variable _____, the coefficient_____, the constant _____?

2. In the equation $y = \frac{4}{1}x - 2$

   what is the slope _____ and the y-intercept _____?

3. In the equation $y = \frac{-1}{1}x + 3$

   what is the slope _____ and the y-intercept _____?
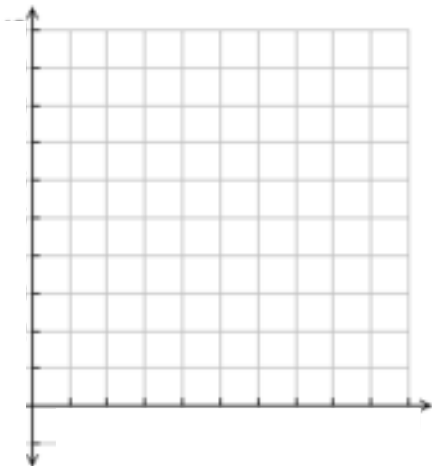
4. How can you tell if a graph is linear or non-linear if:
   a. You are shown the graph only?

   b. You are shown the table of values only?

5. Graph the following tables of values on the graphs below.
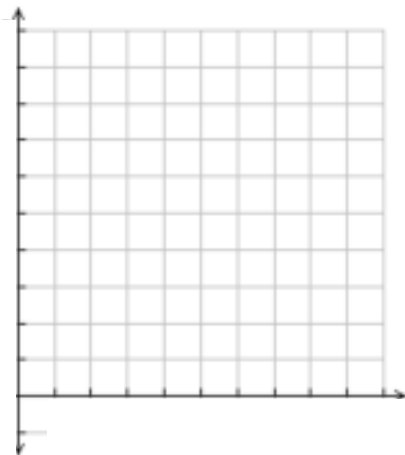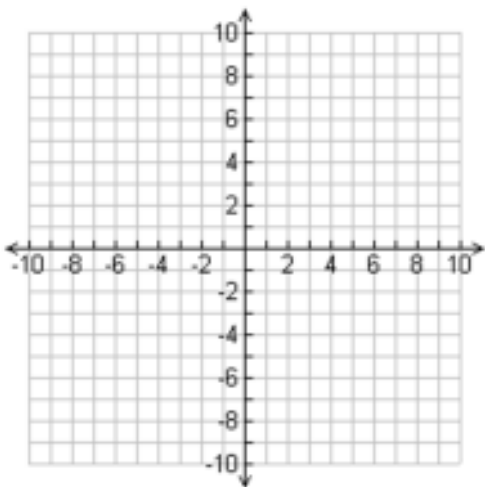   Label the x and y axis.

a.

x	y
1	5
2	10
3	15
4	20

b.

x	2	4	6	8
y	5	7	9	11

c.

x	y
−1	−2
−2	0
−3	2
−4	4

d.

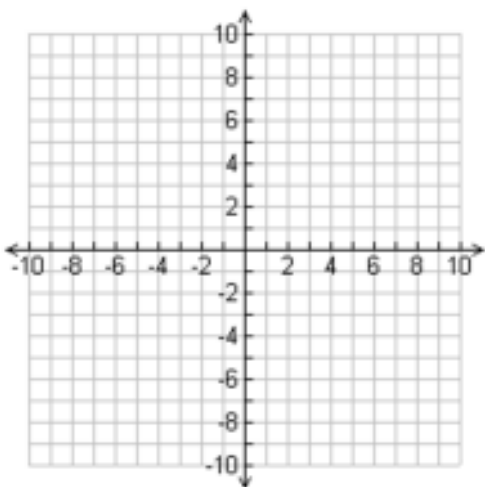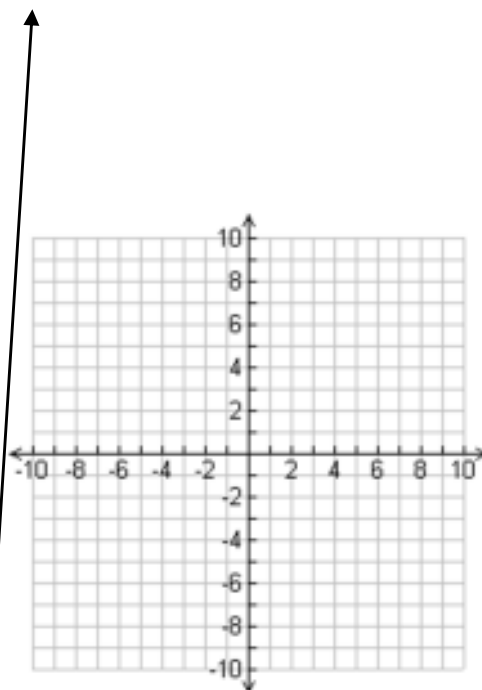| x	1	3	5	7
y	−3	−4	−5	−7
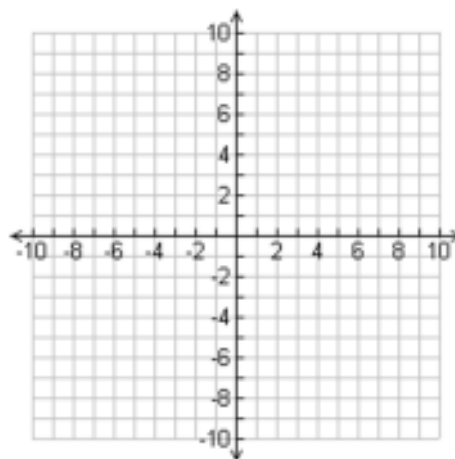
6. Graph the following using the given equations.
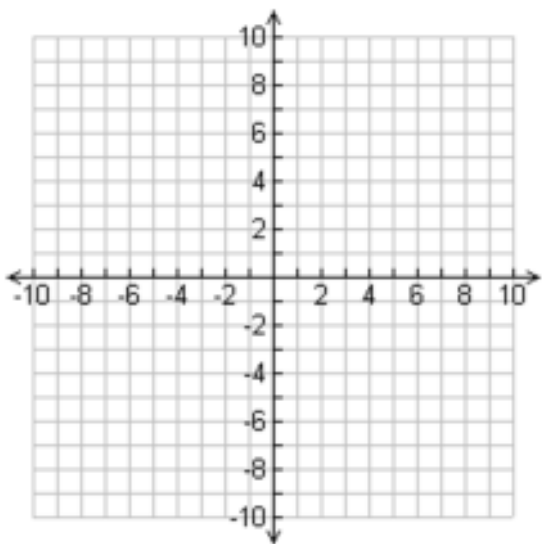
a. $y = \frac{2}{1}x + 3$

b. $y = 4x - 2$

Did you know that $y = \frac{4}{1}x - 2$ means
the same as this?

Did you know that $y = -\frac{1}{1}x + 2$
means the same as this?

c. $y = -x + 2$

d. $y = \frac{1}{2}x + 4$
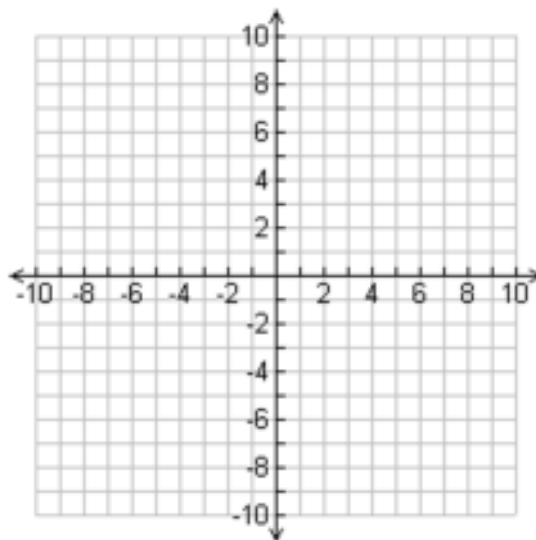
7. Describe the pattern in the following tables. Are they linear? Why or why not?
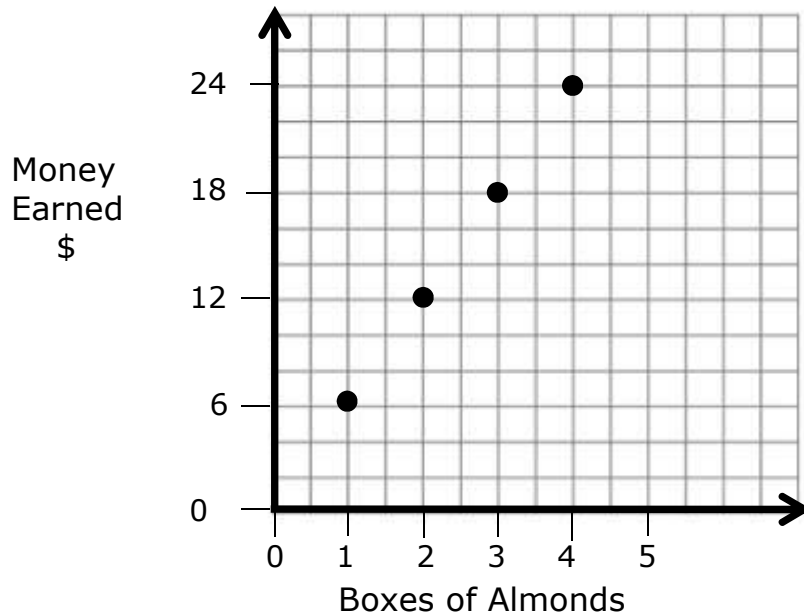
a.

x	y
−1	−2
−2	0
−3	2
−4	4
−5	6
−6	8

b.

x	y
0	0
1	1
2	4
3	9
4	16
5	25

8. Use the graph to answer the following questions.

Boxes of Almonds

a. What pattern is shown on the graph. Be Specific!!

b. Make a table of values for the ordered pairs on the graph above.

c. Write an equation relating the amount of money you earn to the number of boxes of almonds you sell.

d. What is the value of your profit if you sell 16 boxes of almonds?

e. How many boxes of almonds did you sell if you made a profit of $120?

9. You can rent a scooter for $10 per hour plus $15 flat fee for insurance. This can be put into the formula $C = \frac{10}{1}h + 15$ where C is the cost in dollars to rent the scooter and H is the number of hours you get to use the scooter for.

    a. Make a table of values and start with $H = 0$.

    b. Graph it. Label axis.

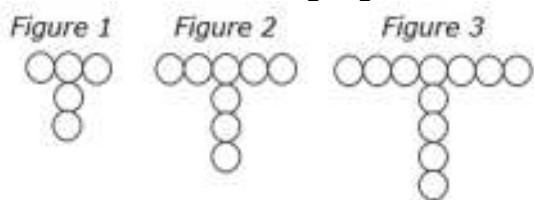|	

    c. Is the relation linear? Why or why not?

    d. Are there other points possible between the points on the graph? Why or why not?

    e. If you rent the scooter for $8 hours$, how much will it cost?

10. Use the following figures to answer the questions below.

Figure 1   Figure 2   Figure 3

a. Complete the table of values to show the number of circles in relation to the figure number.

b. Develop an equation that can be used to determine the number of circles in each figure.

c. How many circles would be found in figure 33?

d. Which figure would have 113 circles?

Linear Relations Worksheet 1 and 6.1 p217#4,5,6,7,9,12

1. What linear relation (equation) shows the relationships between the numbers on the tables below?

X	Y
2	6
3	9
4	12

X	Y
5	4
6	3
7	2

M	N
0	-2
2	1
4	4

G	H
-4	9
-1	3
2	-3

X	Y
12	1
10	2
8	3

A	B
-5	5
0	13
5	21

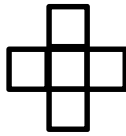2.   Figure 1   Figure 2   Figure 3
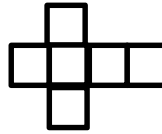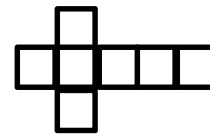
a. Complete the table of values to
show the figure number in relation
to the number of squares.

c. Develop an equation that can be used to determine the number of circles
in each figure.

d. How many squares would be found in figure 38?

e. What figure has 38 squares?

Complete page 217 #4,5,6,7,9,12 and staple them to this worksheet