

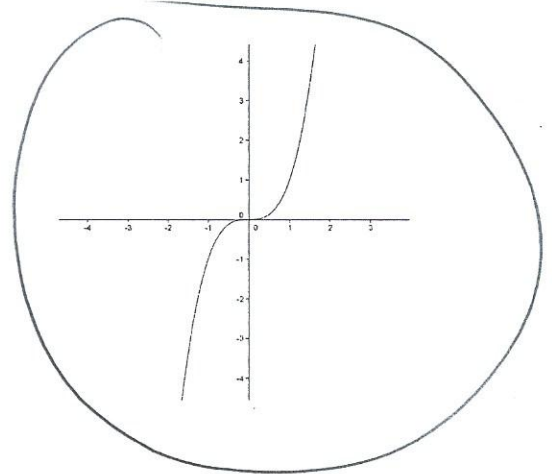
Chapter 2 practice Test – (Be sure and show all work)

Numbers 7 and 8 would be calculator problems

- 1) For the following parts, state which relations are functions and which are not. Be sure and explain your answer.

a.

b. x	y
3	4
4	7
5	10
10	25



c. (3, 2), (5, 6), (0,3), (3,2)

X

x	y
3	4
3	7
6	10
12	25

3 can not give two different outputs

- 2) State whether or not the following function is linear or not. Then evaluate  $f(3)$

a)  $f(x) = 3x - 7$

Yes

$$f(3) = 3 \cdot 3 - 7$$

$$= 21 - 7$$

$$= 14$$

b)  $f(x) = x^3 - x^2 + 2x + 4$

not linear

$$f(3) = (3)^3 - (3)^2 + 2(3) + 4$$

$$= 27 - 9 + 6 + 4 = 28$$

- 3) Find the equation of the line that goes through the points (-2, -6) and (6, 14)

$$\frac{14 - (-6)}{6 - (-2)} = \frac{20}{8} = \frac{5}{2}$$

$$y - 14 = \frac{5}{2}(x - 6)$$

$$y - 14 = \frac{5}{2}x - 15$$

- 4) Find the equation of the line that is perpendicular to your answer from question three and goes through the point (1, 1).

$$y = \frac{5}{2}x - 1$$

$$y - 1 = -\frac{2}{5}(x - 1)$$

$$y - 1 = -\frac{2}{5}x + \frac{2}{5}$$

$$y = -\frac{2}{5}x + \frac{7}{5}$$

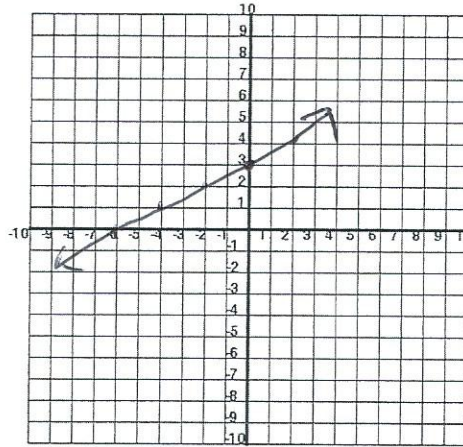
- 5) Find the equation of the line that is parallel to your answer from question three and goes through the point (1, 1).

$$y - 1 = \frac{5}{2}(x - 1)$$

$$y - 1 = \frac{5}{2}x - \frac{5}{2}$$

$$y = \frac{5}{2}x - \frac{3}{2}$$

- 6) Graph the equation  $y = \frac{1}{2}x + 3$ . Find the x and y intercepts and label them on the graph. Also state the slope and y-intercept.



x-int (-6, 0)

y-int (0, 3)

- 7) When I worked on the farm the amount of money I was paid was directly related to the amount of hours that I worked. One week I worked for 25 hours and I was paid \$206.25.

- a) Find the constant of variation and form an equation, relating money to hours worked.

$$p = ah$$

$$206.25 = a(25)$$

$$a = 8.25$$

\$8.25/hr

- b) If I worked for 34 hours the next week how much money did I get paid?

$$p = 8.25(34)$$

$$\$280.50$$

- 8) The following table gives my bowling scores y on the first 5 weeks x of my bowling league.

- a) Find the best-fitting line for the data.

$$y = 6x + 110.4$$

- b) Predict what I will bowl on the 21<sup>st</sup> week.

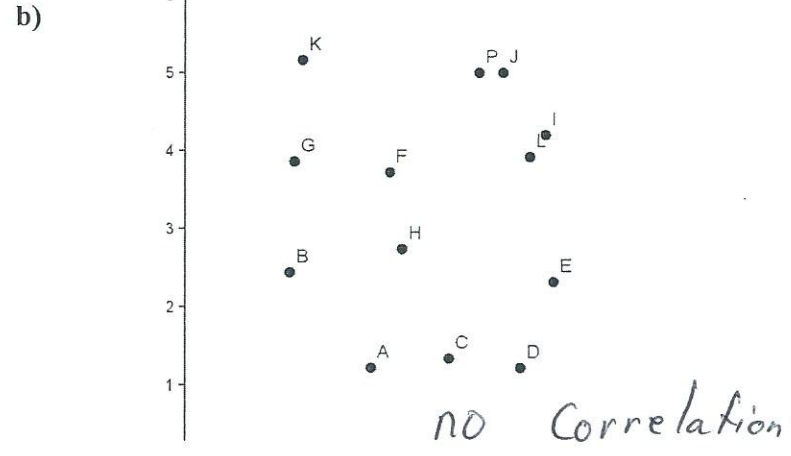
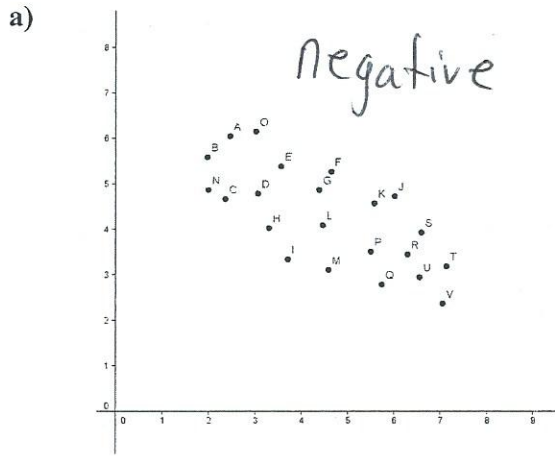
$$y = 6(21) + 110.4$$

$$y = 236.4$$

X (Week)	Y (Score)
1	120
2	115
3	132
4	135
5	140

Prediction of 236 pins since you can't have decimals

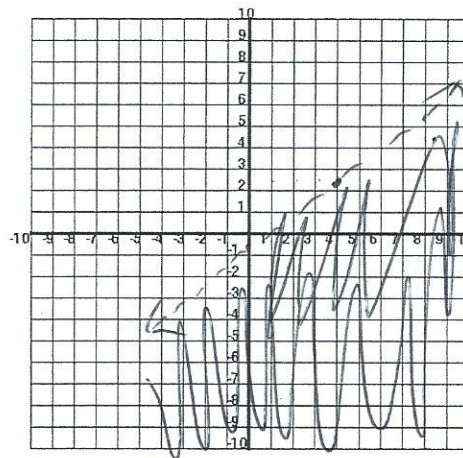
9) For each graph state whether the correlation appears to be negative, positive, or if there appears to be no correlations.



10) Graph the equation  $-4y + 3x > 2$  in the coordinate plane below.

$$-4y + 3x = 2$$

$$3x = 4y + 2$$



$$-4y + 3x = 2$$

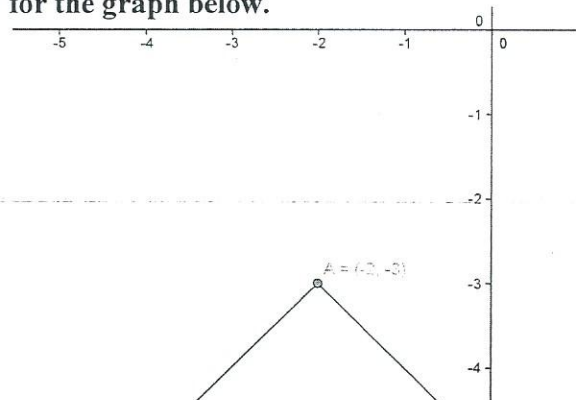
$$\frac{-4y}{-4} = \frac{-3x + 2}{-4}$$

$$y = \frac{3}{4}x - \frac{1}{2}$$

Test a point  
(0,0)

$$0 > 2 \quad \times$$

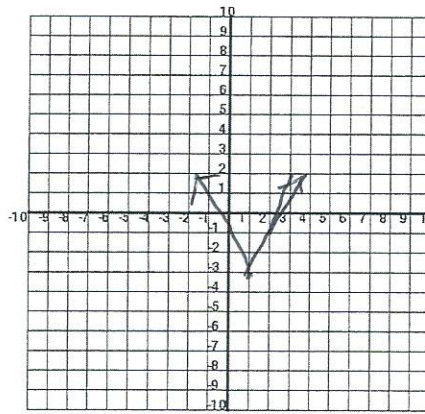
11) Write an equation for the graph below.



$$y = 1|x + 2| - 3$$

$$y = |x + 2| - 3$$

12) Graph the function  $f(x) = 2|x - 1| - 3$  below, and explain all of the changes that happen if the original graph is  $g(x) = |x|$ .



- 1.) Vertical stretch by a factor of 2.
- 2.) Horizontal shift right
- 3.) Vertical shift down 3

13) Graph the function  $f(x) = -\frac{3}{4}|x + 5| + 2$  below, and explain all of the changes that happen if the original graph is  $g(x) = |x|$ .

- 1.) reflection over the x-axis
- 2.) Vertical shrink
- 3.) horizontal shift left 5
- 4.) Vertical shift up 2

