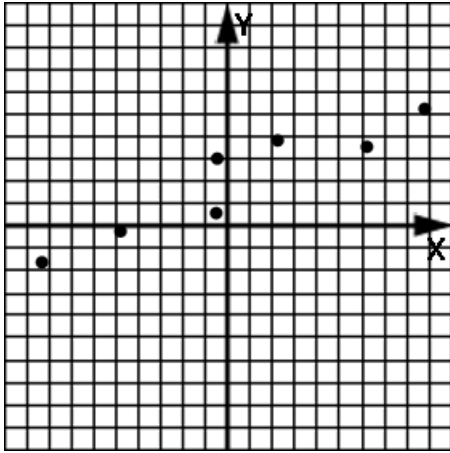


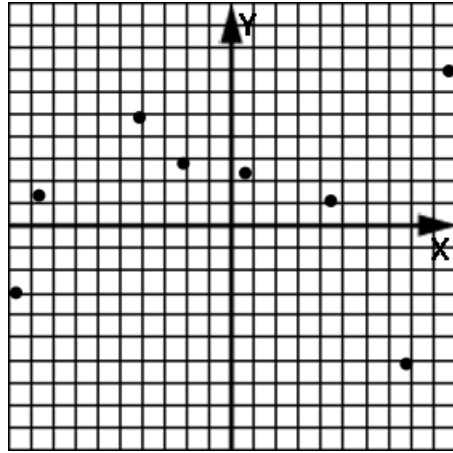

**Unit 8:  
Review**

In problems 1-4, draw a line of best-fit (if possible) and state the type of correlation exhibited by the data (positive, negative, or none).

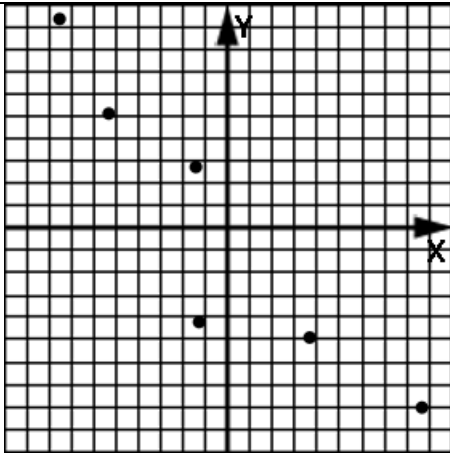
1.



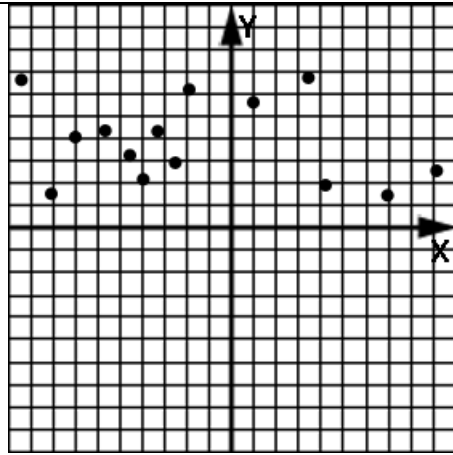
2.



3.



4.



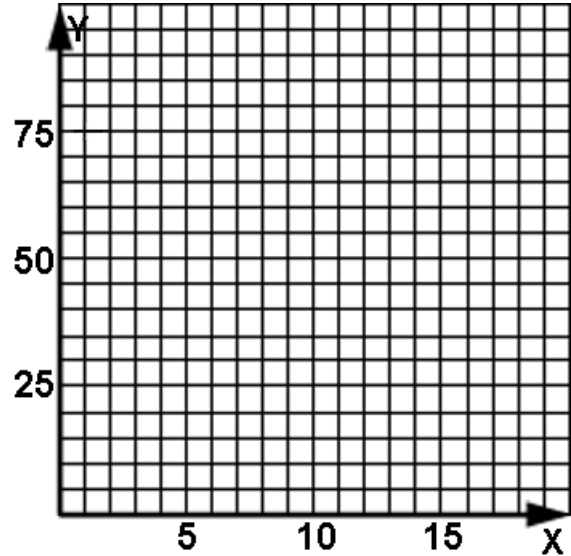
5. What is the meaning of positively correlated data?

What is the meaning of negatively correlated data?

6. Plot the data from the following table of randomly selected test grades. The  $x$  column is for the test number and the  $y$  column is the grade made on that test.

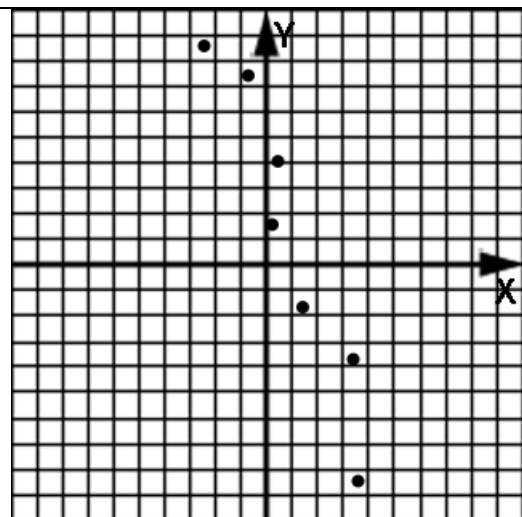
Comment on any trend or pattern you see in the data. If a trend is observed, draw a line of "best-fit" and then find its equation.

$x$ , Test #	$y$ , grade
1	50
3	50
6	65
10	65
13	70
14	80
18	80



7. Draw a line of best-fit for this scatter plot and then find the equation of the line.

What is the correlation of this scatterplot?



8. Use a graphing calculator to make a scatter plot of the data in this table. Use linear regression to produce a line of best-fit. Sketch the calculator display.

<b>x</b>	<b>y</b>
-8	120
-4	82
-1	67
2	36
6	15
8	-5

Problems 9-13 refer to the data and the line of best-fit in problem 8.

9. What type of correlation does the data of problem 8 exhibit?

10. What is the slope (to two decimal places) of the line of best-fit?

11. What is the y-intercept (to two decimal places) of the line of best-fit?

12. What is the equation of the line of best-fit in slope-intercept form?

13. Using the line of best-fit, algebraically determine the function value at  $x = 22$ .

14. The table shown here gives the depth,  $y$ , of a submarine below the surface in feet. Its depth at various times,  $x$ , in minutes is shown.

**Without plotting** the data either manually or with a calculator, what is the correlation of the data? Justify your answer.

<b>x (time, min.)</b>	<b>y (feet below surface)</b>
0	-100
5	-200
10	-282
22	-350
36	-448
47	-560

Problems 15-17 refer back to the data of problem 14.

15. What is the dependent variable and what are its units?

16. What is the independent variable and what are its units?

17. What are the units of the slope of the line of best-fit?