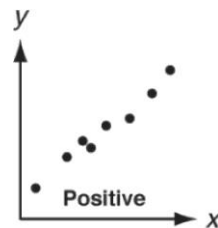# Scatter Plots and Trend Lines Notes

Correlation is one way to describe the relationship between two sets of data.

      Positive Correlation

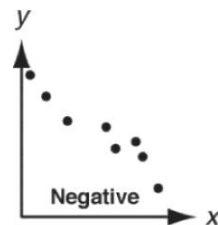   Data: As one set **increases,** the other set **increases.**

            Graph: The graph **goes up** from left to right.

      Negative Correlation

            Data: As one set **increases,** the other set **decreases.**
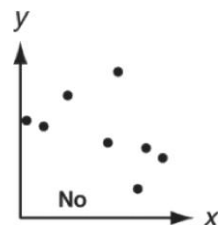
            Graph: The graph **goes down** from left to right.
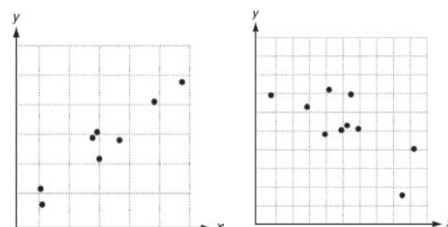
      No Correlation

   Data: There is **no relationship** between the sets.
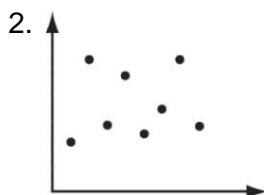
            Graph: The graph has **no pattern.**

Example	Correlation	Correlation Coefficient (*estimated*)
1st graph *above*	strong positive	+1
2nd graph *above*	strong negative	−1
3rd graph *above*	no correlation	0
4th graph *beside*	weak positive	+0.5
5th graph *beside*	weak negative	−0.5

Estimate the correlation coefficient for each scatter plot as −1, −0.5, 0, 0.5, or 1.
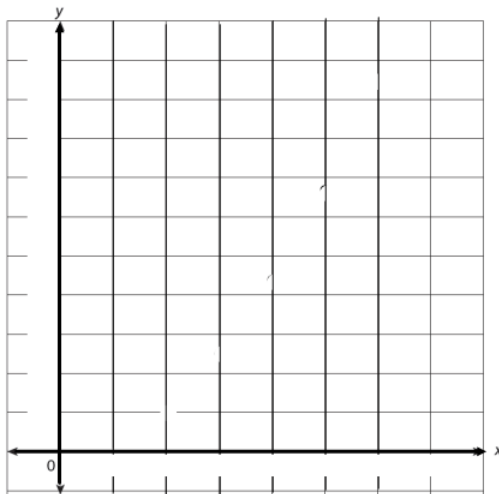
1.

2.

3.

_____
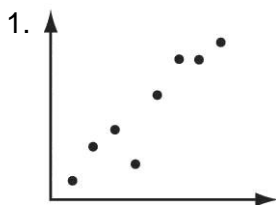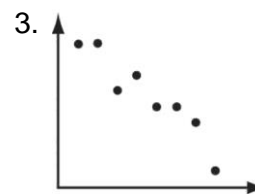
Fitting a Linear Model to Data Notes

The table shows the relationship between two variables. Identify the correlation, sketch a line of fit, and find its equation.

x	1	2	3	4	5	6	7	8
y	16	14	11	10	5	2	3	2

Step 1   Make a scatter plot of the data.

Step 2 Use a straightedge to draw a line.
        There will be some points above and some below the line.

Step 3 Choose two points on the line to find the equation:

Step 4 Use the points to find the slope:

Step 5 Find the y-intercept:

Step 6 Write the equation: