Describing Correlation in Scatter Plot Graphs

When describing a relationship, you can assess the correlation (positive, negative, or no-relationship), the strength of the relationship (strong or weak) and whether or not the relationship appears to be linear (makes a straight line) or non-linear. From your course pack page 6, complete the following:

Positive correlation:

Negative correlation:

No correlation:

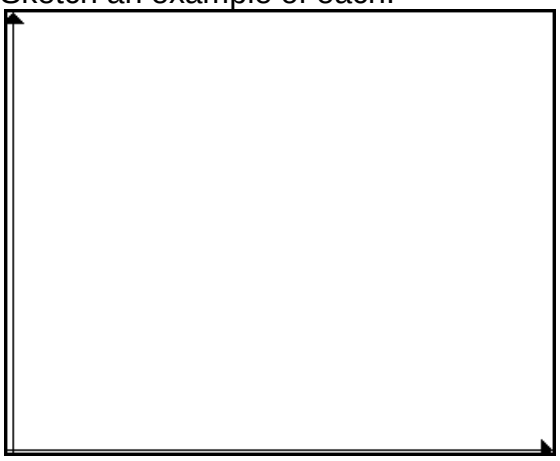
Correlations are strong if:

Correlations are weak if:

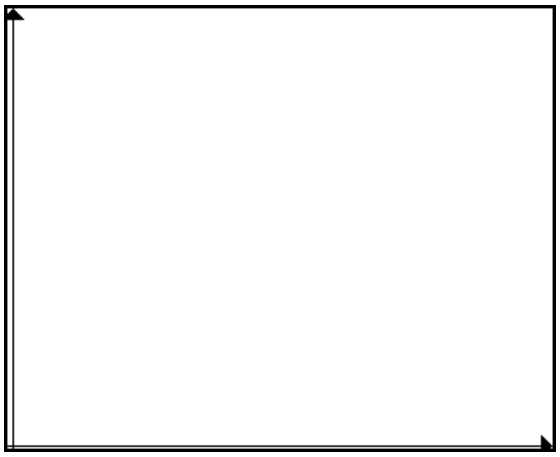
A correlation is linear if:

A correlation is non-linear if:

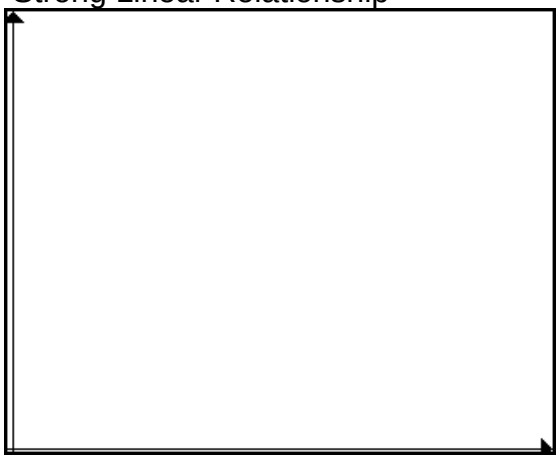
Sketch an example of each:



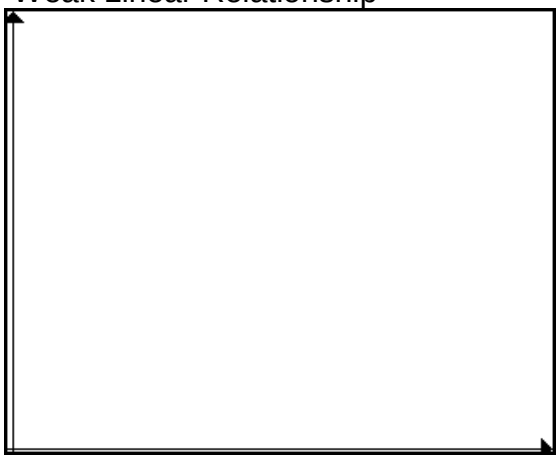
*Strong Linear Relationship



*Weak Linear Relationship



*No relationship



*Non-Linear Relationship

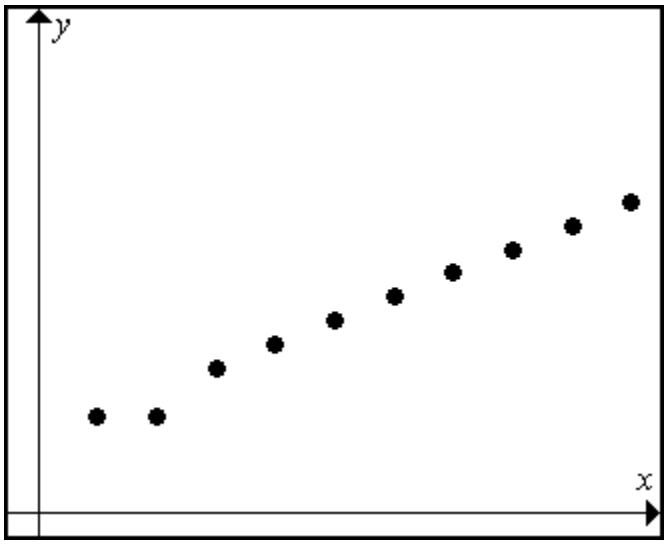
Describing Correlation in Scatter Plot Graphs

Example # 1
This scatter plot shows the height of a tree over several years.

a) Label the axes.

b) Complete the following sentence: As the number of years _____, the height of the tree increases.

c) Describe the correlation.

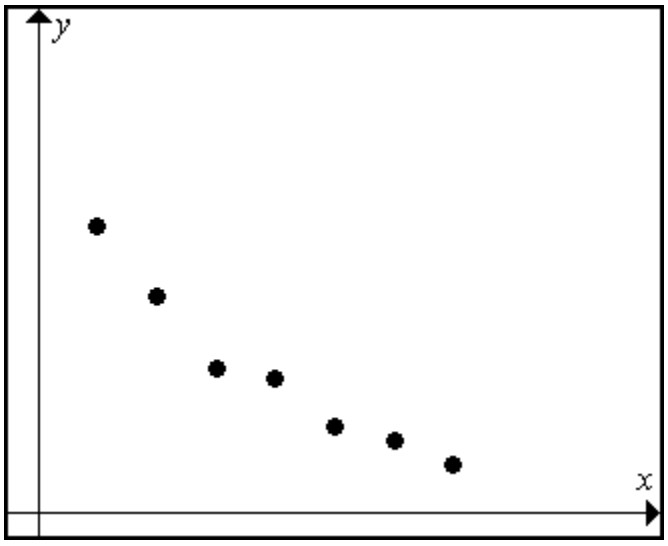


Example #2
This scatter plot shows the number of trees left in a forest as several loggers are cutting them down over a week.

a) Label the axes.

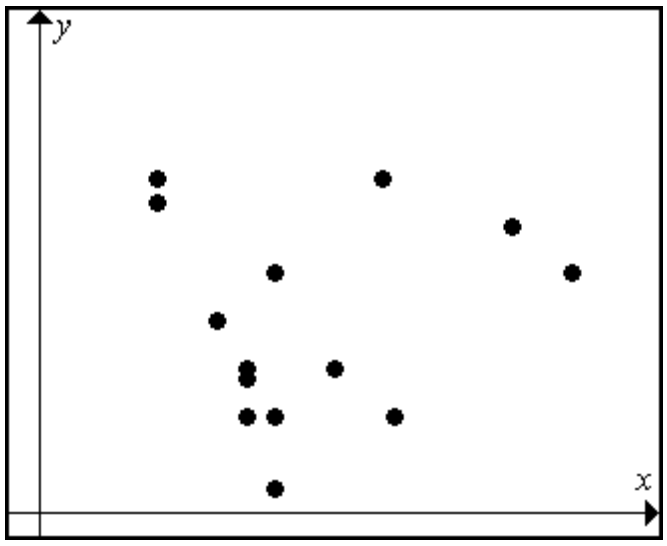
b) Complete the following sentence: As the number of days increase, the number of trees left _____.

c) Describe the correlation.



Example 3
This scatter plot shows the number of questions students did for math homework compared to the length of their shoelaces.

a) Describe the correlation.



Correlation

Will each of the following sets of data show a positive correlation, a negative correlation, or no correlation? Give reasons for you answer.

a) the number of pages left to be typed in your essay and the number of pages already typed?

b) the size of a student's hand and the number of rings the student owns

c) the outside summer temperature and the number of people swimming

d) the depth of Lake Ontario and the amount of rainfall and snowfall for that year

e) the outside winter temperature and the number of centimeters of ice on Island Lake

f) the energy left in your personal radio batteries and the number of hours you have listened to this radio

g) your take-home pay and the number of hours you work

h) your math mark and the number of hours of studying you do.