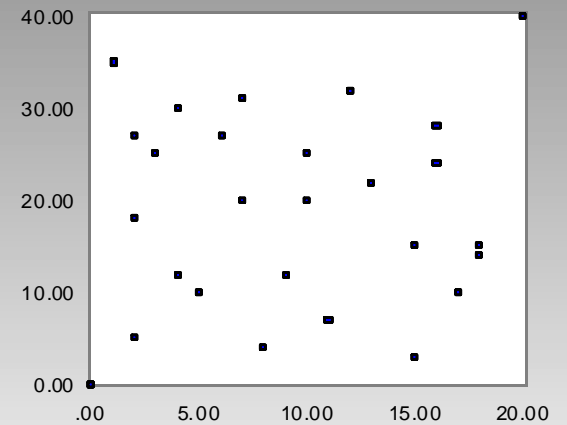
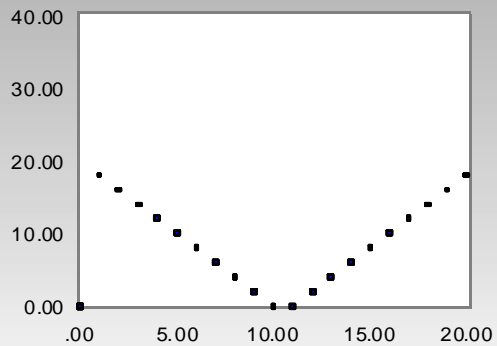


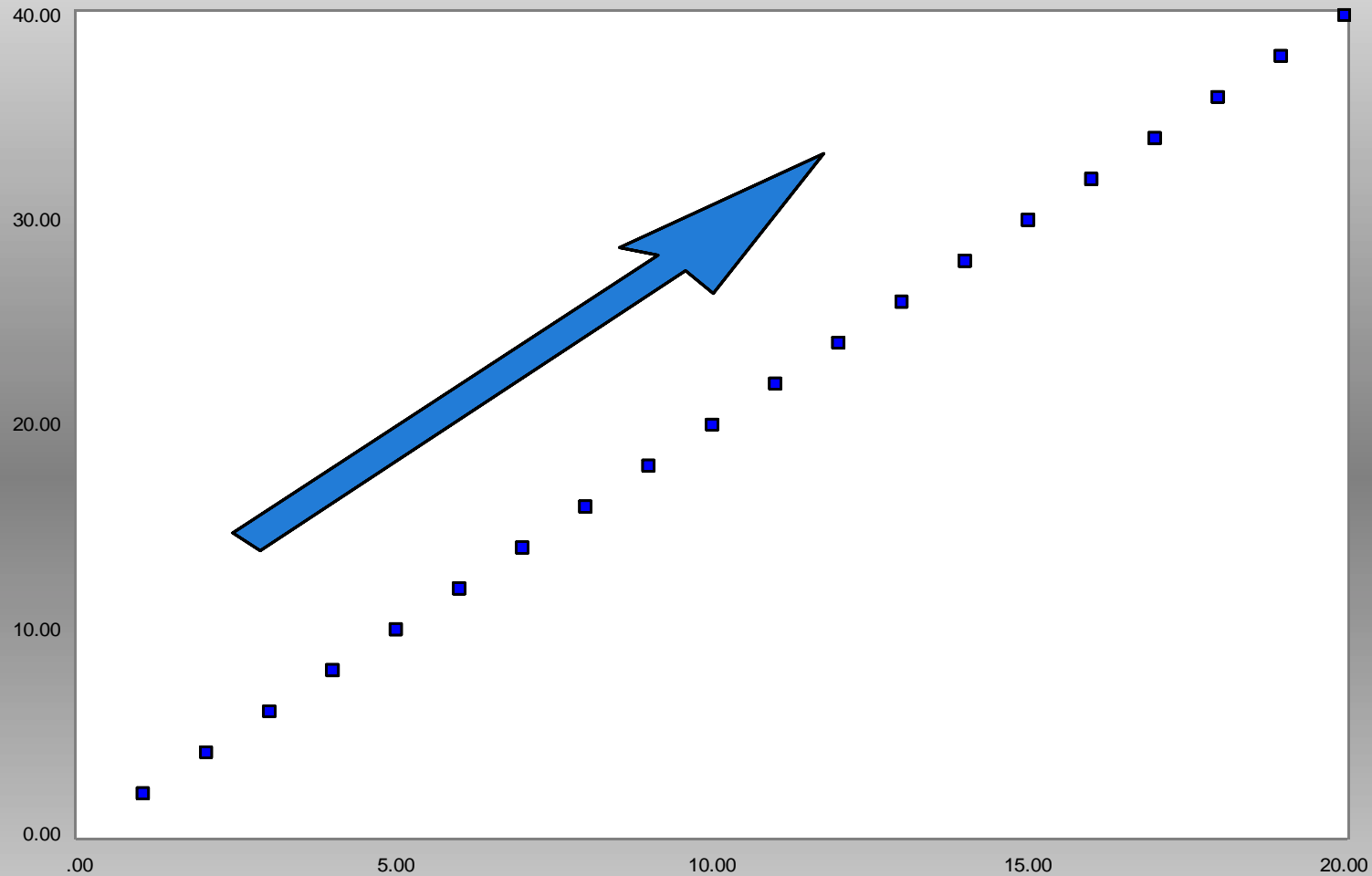
Correlation Coefficients



A self paced review

A Positive Correlation

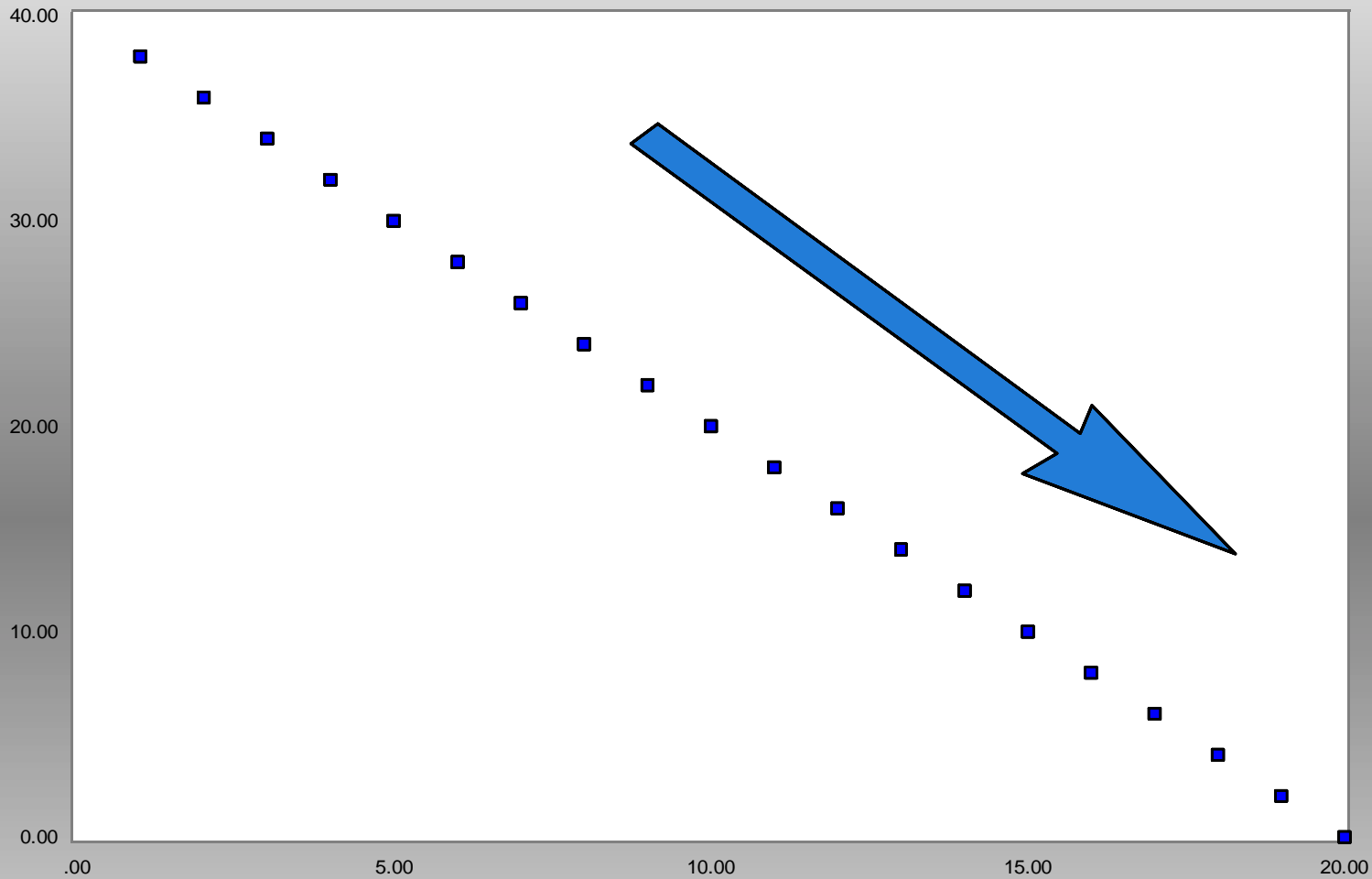
Correlation of 1.0



This correlation is positive, a perfect relationship. This means one could use values on one axis to predict values on the other. Notice that in a positive correlation as one axis' values increase so do the others. This relationship allows one variable to predict the other but cannot prove that one variable will cause the change or effect on the other.

A Negative Correlation

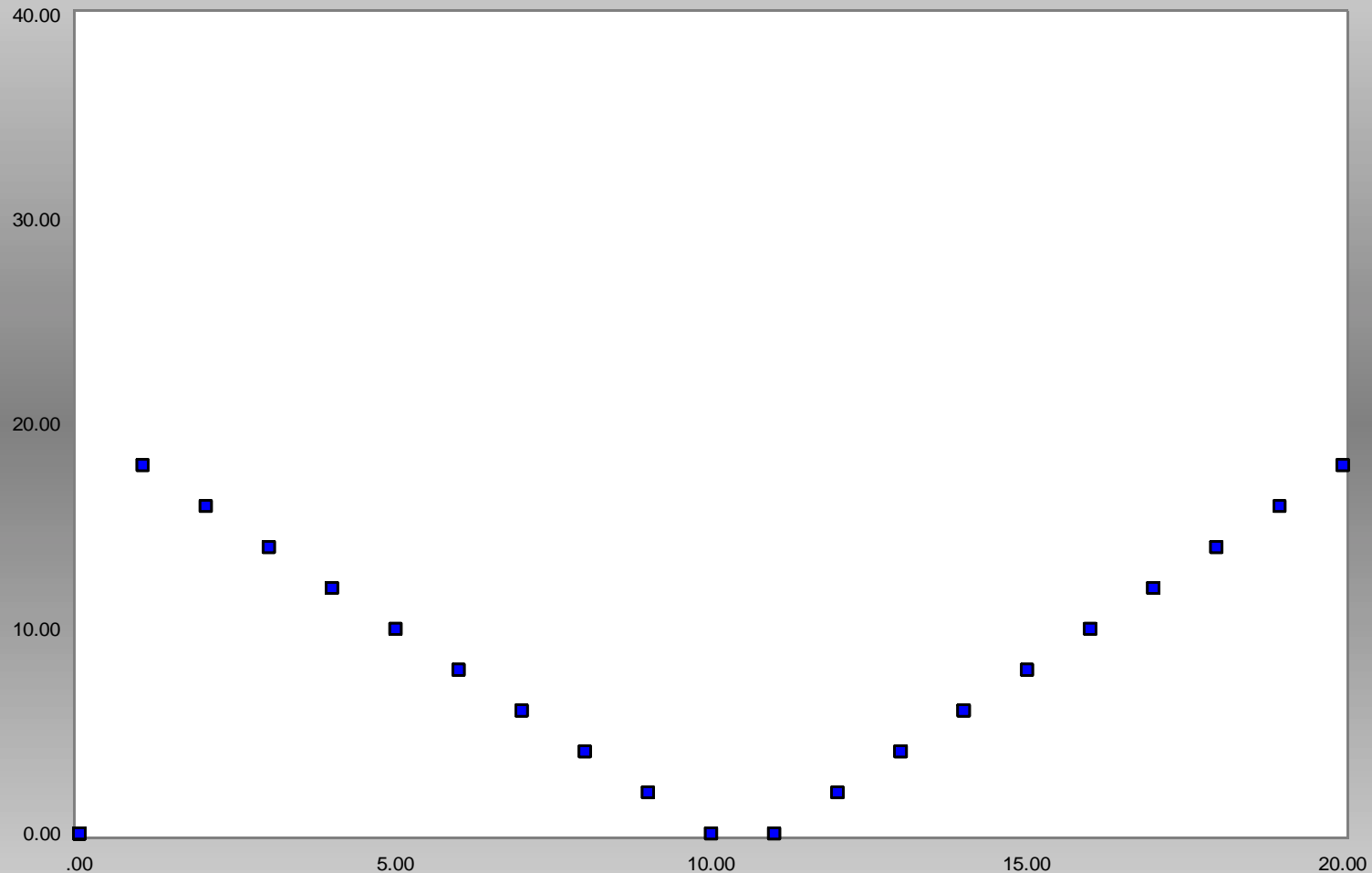
Correlation of -1.0



This correlation is a perfect negative relationship. Note the direction of the arrow as compared to the first slide. This means one could also use values on one axis to predict values on the other. Notice in a negative correlation as one axis' values increase the others do not, in fact they go in the opposite direction. A correlation predicts relationships but cannot prove that one variable causes an effect or change on the other.

Correlation Coefficient of 0
No Predictive Relationship

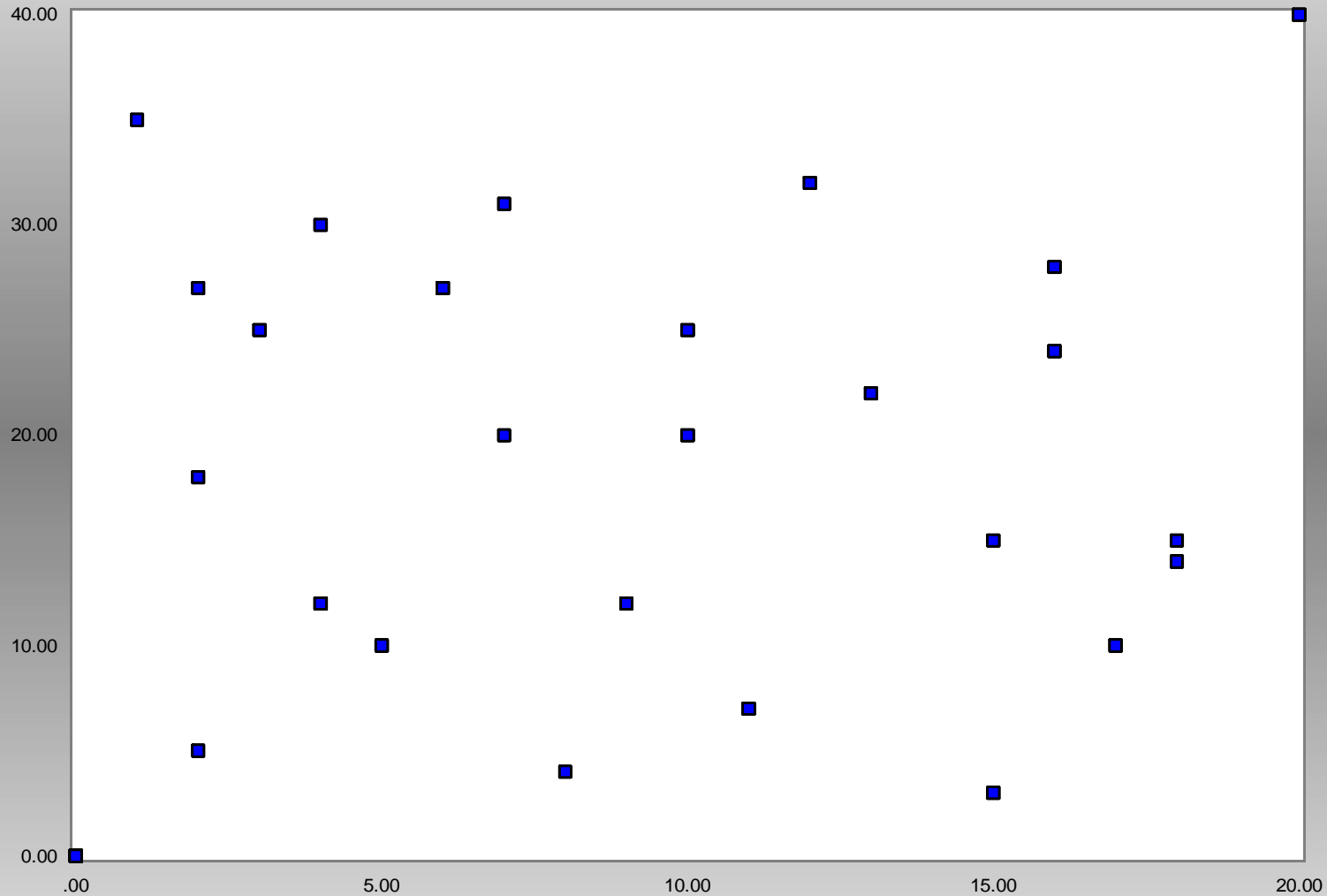
Correlation of 0



Although an interesting visual pattern is present one cannot use one variable to predict the value of another. This example shows a scatterplot with no relationship between variables.

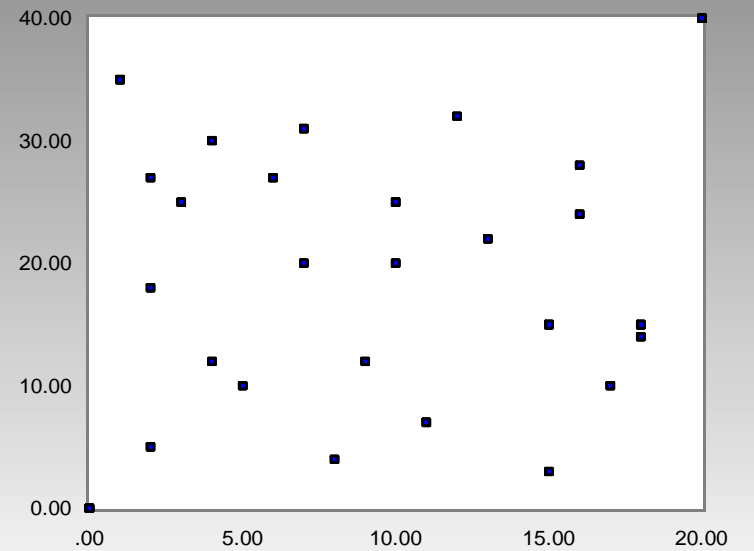
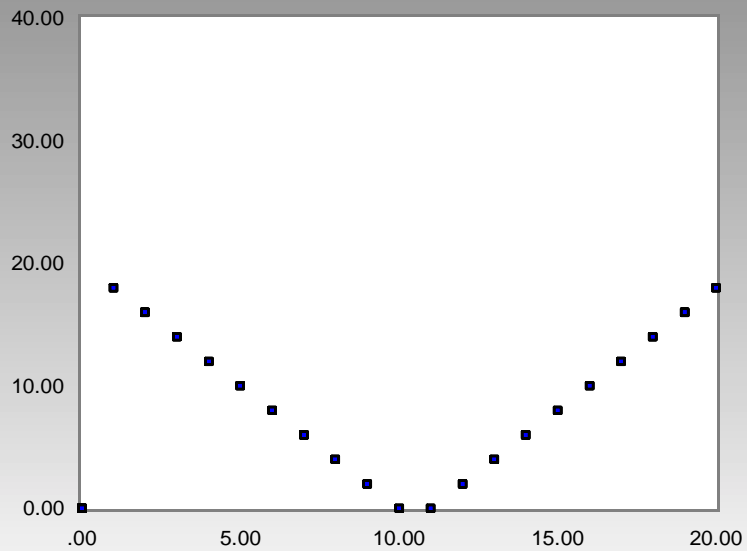
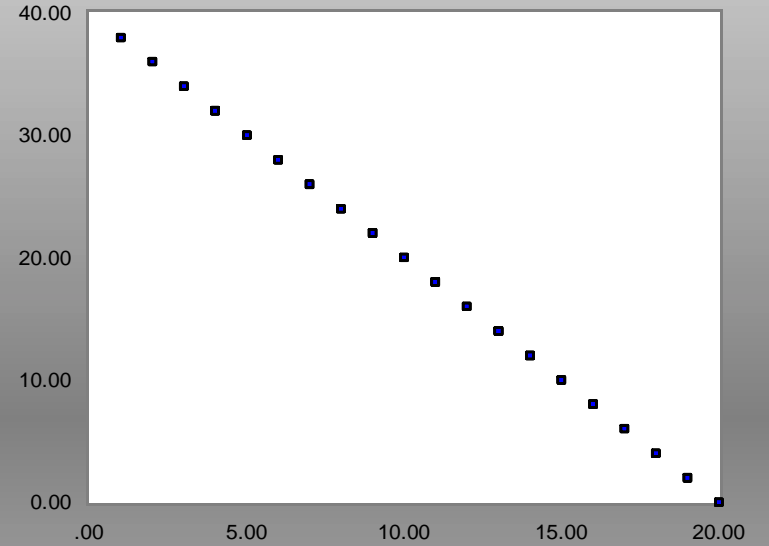
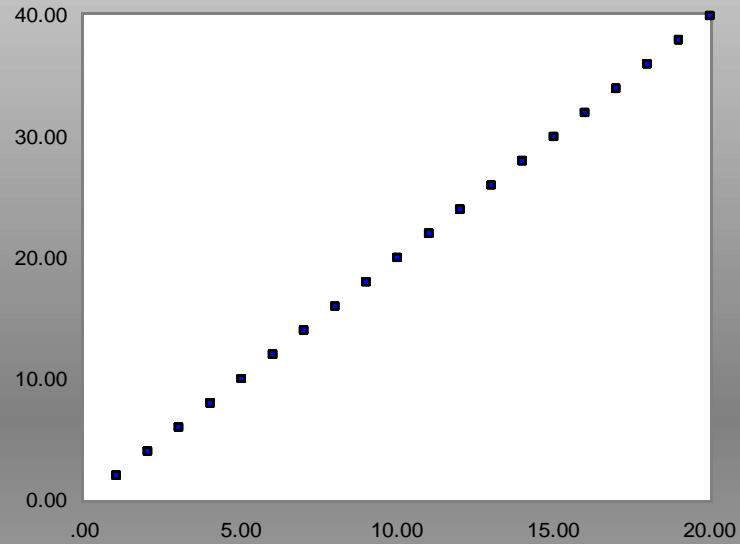
Correlation Coefficient of 0
No Predictive Relationship

Correlation of 0



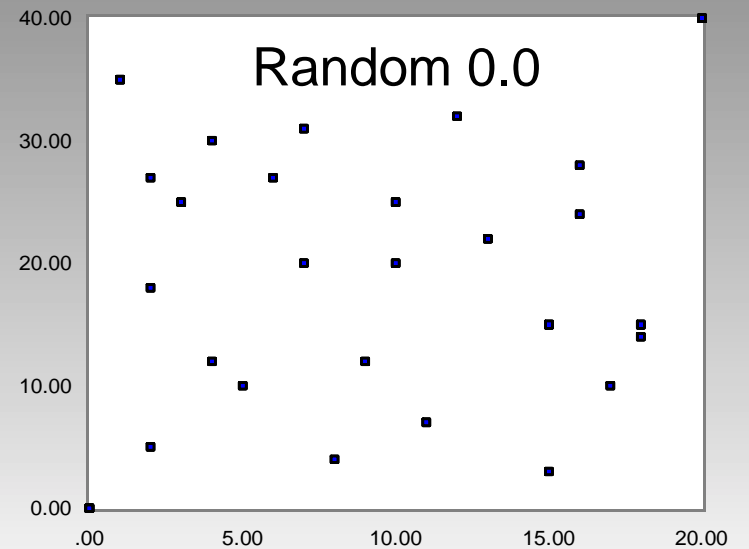
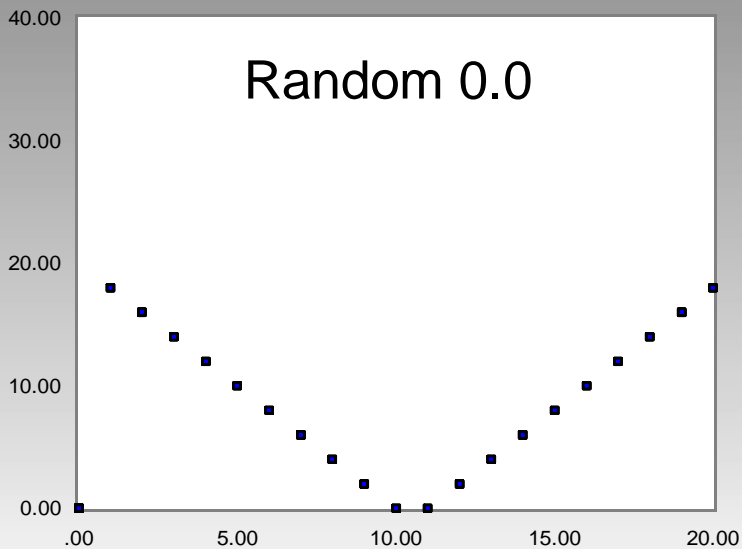
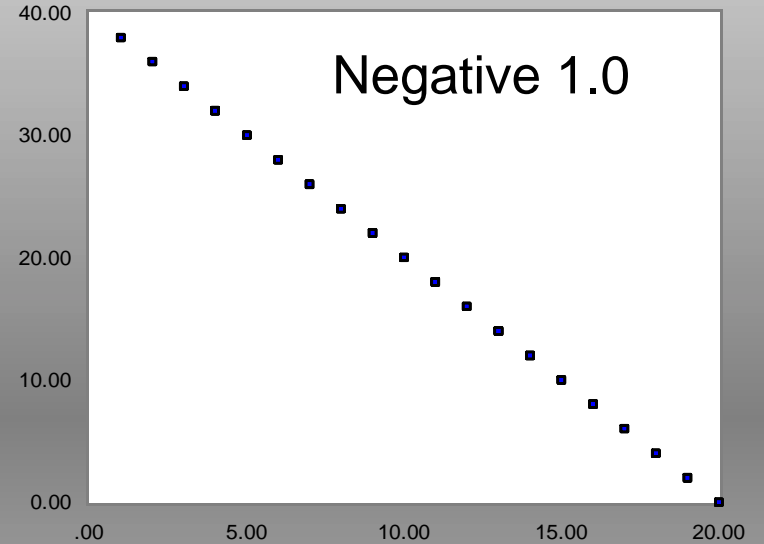
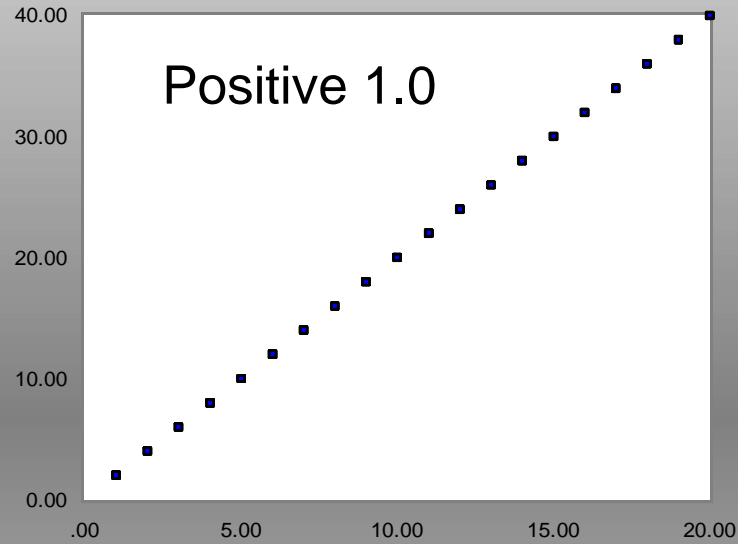
This scatterplot also shows a distribution without any relationship between the variables. This plot appears completely random in nature.

Can you guess these Correlation Coefficients?



How did you do?

Check your work with these answers



Review

- Correlations are predictive and show relationships between variables
- Correlations cannot prove cause and effect
- Correlations coefficients can only range from +1.0 to -1.0
- The stronger the relationship either (+) or (-) the better the predictive value of one variable to another
- A perfect relationship can be either a positive 1.0 or a negative 1.0, do not be misled by the sign