

Explain and Write down what are the Similarities between Correlation and Regression.

Similarities between Correlation and Regression

1. Both involve relationships between a pair of numerical variables.
2. Both: "predictability", "reduction in uncertainty"; "explanation".
3. Both involve straight line relationships [can get fancier too].

Distinguish, differentiate, compare and explain what is the difference between Correlation and Regression. Comparison and Differences.

Difference between Correlation and Regression

1. Correlation is Symmetric whereas Regression is Directional.
2. In Correlation, it doesn't matter which is on Y, which on X-axis. We can choose n objects; measure (X, Y) on each. In Regression, it matters which is on Y, which on X-axis. (We have to first choose n objects on basis of their X values; measure their Y ; or choose objects, (as with correlation); measure (X, Y) . Regard X value as fixed. Can be extended to non-straight line relationships. Can relate Y to multiple X variables.
3. Correlation is dimensionless i.e. it has no units and range between -1 to $+1$. Regression is DY/DX units e.g., Kg/cm .