**Linear Equation:**

A linear equation is an [algebraic equation](https://www.cuemath.com/algebra/algebraic-equations/) where each term has an [exponent](https://www.cuemath.com/algebra/exponents/) of 1 and when this equation is graphed, it always results in a straight line. This is the reason why it is named as a 'linear' equation.

A *vector* is a geometric object which has both *magnitude* (size) and *direction*.

Vector equations are used to represent the equation of a line or a plane with the help of the variables x, y, z.

**Correlation material Link:**

https://discovery.cs.illinois.edu/guides/Statistics-Formulas/correlated-independent-variables/

Covariance is a statistical term that refers to a systematic relationship between two random variables in which a change in the other reflects a change in one variable.

a measure of the relationship between two random variable the variable change together

**Correlation:**

Correlation is a statistical measure that expresses the extent to which two variables are linearly related (meaning they change together at a constant rate**.**

In summary, the main difference lies in the modelling assumptions and complexity:

* Naive Bayes is simple and assumes feature independence, making it suitable for basic classification tasks with modest-sized datasets.
* Full Bayesian Networks are more complex, allowing for flexible modelling of dependencies among variables. They are used in situations where variables interact in intricate and conditional ways

Hypothesis testing is used to assess the plausibility of a hypothesis by using sample data. Such data may come from a larger population or a data-generating proces