## **DAILY ASSESSMENT FORMAT**

Date:	18-06-2020	Name:	Abhishek
Course:	Statistical Learning	USN:	4al17ec001
Topic:	All topics	Semester & Section:	6 & 'A'
Github Repository:	Abhishek-online-courses		

FORENOON SESSION DETAILS	
Image of session	
= greatlearning  Learning for Life	9
← Go Back to Statistical Learning	
:≡ Course Content	
Rules for Probabilty calculat	ion
Multiplication Rule	greatlearning
Independent Events	
$P(A \cap B) = P(A).P(B)$	
This rule says when the two events A and B are independent, the probability of the simultaneous occurrence of A and B (also known as probability of intersection of A and B) equals the product of the probability of A and the probability of B. Of course this rule can be extended to more than two events.	
Report –	
Introduction to Probability:	

- · Probability means possibility.
- It is a branch of mathematics that deals with the occurrence of a random event.
- The value is expressed between zero and one.
- Probability has been introduced in Maths to predict how likely events are to happen.

### **Rules for Probability Calculation**

 Rule of Subtraction - The probability that event A will occur is equal to 1 minus the probability that event A will not occur.

$$P(A) = 1 - P(A')$$

Rule of Multiplication - The probability that Events A and B both occur is equal to the
probability that Event A occurs times the probability that Event B occurs, given that A
has occurred.

$$P(A \cap B) = P(A) P(B|A)$$

• Rule of Addition - The probability that Event A or Event B occurs is equal to the probability that Event A occurs plus the probability that Event B occurs minus the probability that both Events A and B occur.

$$P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

#### Bayes theorem:

- Bayes' Theorem is a way of finding a probability when we know certain other probabilities.
- The formula is:

$$P(A|B) = P(A) P(B|A) / P(B)$$

Which tells us:

how often A happens given that B happens, written P(A|B),

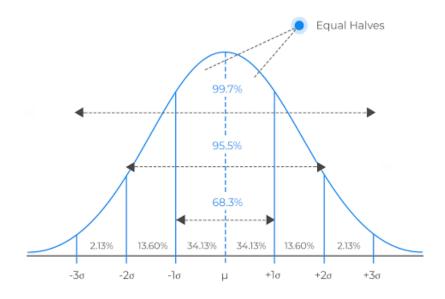
When we know:

how often B happens given that A happens, written P(B|A) and how likely A is on its own, written P(A) and how likely B is on its own, written P(B)

#### **Normal distribution:**

Normal distribution, also known as the Gaussian distribution, is a probability
distribution that is symmetric about the mean, showing that data near the mean are
more frequent in occurrence than data far from the mean.

# Shape of the normal distribution



No. of standard deviations from the mean