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Subj: - Applied Calculus.  
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## Application of Integration:-

Application of integration is the process of enabling independently designed applications to work together. Commonly required capabilities include:-

- (1) Area between curves.
- (2) Distance, velocity, acceleration
- (3) Volume
- (4) Average value of function
- (5) Work
- (6) Center of Mass
- (7) Kinetic energy, improper integrals
- (8) Probability
- (9) Arc length
- (10) Surface Area.

## Application of derivation:-

The derivation is defined as something which is based on some other thing. In Mathematics, Derivative is an expression that gives the rate of change of a function with respect to an independent variable. Derivation have various applications in Mathematics, science and Engineering.

- (1) Intervals of Increase and decrease
- (2) Critical Points
- (3) Relative Maxima and Minima.
- (4) The first derivation test for Relative Maximum and Minimum
- (5) Concavity and Inflection Points.
- (6) The Second Derivation Test for Relative Maximum and Minimum.
- (7) Curve Sketching with derivations.
- (8) Optimization Using the closed Interval Method.
- (9) Optimization Using the first Derivation Test.
- (10) Optimization Using the second Derivation Test.
- (11) Economic: Cost & Revenue
- (12) Economic: Marginal Cost & Revenue
- (13) Optimization Problems: Applications to Economic