**Problem-1:**

**TOPIC: B(X,Y):**

B(x,y) denotes the beta function also known as the Euler’s beta function.

Beta function is a function which is defined for the values defined in a certain specific limits of a function.

The formula of B(x,y) is:



**Properties of Beta function:**

1. Beta function is symmetric.

B(x,y) = B(y,x).

1. Beta function can be represented in terms of Gamma functions as:

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1. When x and y are postitive then it follows the form of gamma function.
2. There can me multiple parameters in the beta function (i.e. not necessarily x and y).

**Domain:**

The domain of the Beta function depends on the limits of the integral function, having a higher limit as well as a lower limit during which the required output of a given function can be obtained.

**Co-Domain:**

The co-domain of a function depends on the domains. Here we have to manipulate the co-domains in the predefined form by solving the given problem and converting it into a beta function which can be executed only in some particular domain. Various examples of co-domains are:





**References:**

1. <https://en.wikipedia.org/wiki/Bounded_operator>