Beta function

Defn

$$B(a,b) = \int_0^1 t^{a-1} (1-t)^{b-1} \, dt$$

$a > 0$

$b > 0$

Property

(i) $$B(a,b) = \frac{\Gamma(a)\,\Gamma(b)}{\Gamma(a+b)}$$

(ii) $$B(m,n) = \frac{\Gamma(m)\,\Gamma(n)}{\Gamma(m+n)} = \frac{(m-1)!\,(n-1)}{(m+n-1)!}$$

where m & n are positive integers.