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0.1 Beta function

The beta function expand the binomial coefficient formula to the real (and complex) numbers.

We want to expand the binomial coefficient function.

$$\binom{n}{k} = \frac{n!}{k!(n-k)!}$$

We do this as:

$$B(x, y) = \frac{\Gamma(x)\Gamma(y)}{\Gamma(x+y)}$$