Formulario

Igualdades

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^k\, b^{n-k}; \qquad \sum_{k=x}^{\infty} \phi^k = \frac{\phi^x}{1-\phi} \quad \text{si } |\phi| < 1;$$

$$\sum_{k=0}^{\infty} \frac{\lambda^k}{k!} = \exp(\lambda); \qquad \sum_{x=0}^{\infty} \binom{x+k-1}{k-1} \phi^x = \frac{1}{(1-\phi)^k} \quad \text{si } 0 < \phi < 1 \text{ y } k \in \mathbb{N}, \quad \int_{-\infty}^{\infty} e^{-x^2/2}\, dx = \sqrt{2\,\pi}$$

Propiedades función $\Gamma(\cdot)$ y $B(\cdot,\,\cdot)$

$$(1) \quad \Gamma(k) = \int_0^{\infty} u^{k-1}\, e^{-u}\, du = \texttt{gamma}(k); \quad (2) \quad \Gamma(a+1) = a\,\Gamma(a); \quad (3) \quad \Gamma(n+1) = n!, \quad \text{si } n \in \mathbb{N}_0;$$

$$(4) \quad \Gamma(1/2) = \sqrt{\pi}; \quad (5) \quad B(q,\,r) = \int_0^1 x^{q-1}\,(1-x)^{r-1}\, dx; \quad (6) \quad B(q,\,r) = \frac{\Gamma(q)\,\Gamma(r)}{\Gamma(q+r)} = \texttt{beta}(q,r)$$