
PROPIEDADES DE LA SUMATORIA

1. $\sum_{n=a}^b x[n] = \sum_{n=-b}^{-a} x[-n]$
2. $\sum_{n=a}^b [x_1[n] + x_2[n]] = \sum_{n=a}^b x_1[n] + \sum_{n=a}^b x_2[n]$
3. $\sum_{n=a}^b x[n] = \sum_{n=1}^b x[n] - \sum_{n=1}^{a-1} x[n]$
4. $\sum_{n=n_1}^N x[n] = \sum_{n=n_1}^k x[n] + \sum_{n=k+1}^N x[n]$
5. $\sum_{n=1}^N x[n] = \sum_{n=0}^{N-1} x[n+1]$
6. $\sum_{n=0}^N x[n] = x[0] + \sum_{n=1}^N x[n]$
7. $\sum_{n=0}^{N+1} x[n] = \sum_{n=0}^N x[n] + x[N+1]$
8. $\sum_{n=a}^b C x[n] = C \sum_{n=a}^b x[n]$
9. $\sum_{n=a}^b C = C[b-a+1]$

CASOS PARTICULARES

$$\sum_{n=n_1}^{n_2} a^n = \frac{a^{n_1} - a^{n_2+1}}{1-a} \quad ; \quad \sum_{n=n_1}^{n_2} a^{-n} = \frac{a^{-n_2} - a^{-n_1+1}}{1-a}$$

$$\sum_{n=n_1}^{\infty} a^n = \frac{a^{n_1}}{1-a} \quad ; \quad \sum_{n=0}^{\infty} a^n = \frac{1}{1-a} \quad ; \quad \sum_{n=1}^{\infty} a^n = \frac{a}{1-a}$$

$$\sum_{n=-\infty}^{n_2} a^{-n} = \frac{a^{-n_2}}{1-a} \quad ; \quad \sum_{n=-\infty}^0 a^{-n} = \frac{1}{1-a}$$