SERIES DE FOURIER DE SEÑALES DISCRETAS (DTFS)

DOMINIO DEL TIEMPO	DOMINIO DE LA FRECUENCIA
$\boldsymbol{x[n] = \sum_{k=\langle N\rangle} X[k]e^{jk\Omega_0 n}}$ $\boldsymbol{x[n]\ periódica\ de\ periodo\ N}$	$\boldsymbol{X[k] = \frac{1}{N}\sum_{n=\langle N\rangle} x[n]e^{-jk\Omega_0 n}}$ $\boldsymbol{X[k]\ periodico\ N}$
$x[n] = \begin{cases} 1, & \lvert n\rvert \le M \\ 0, & M < \lvert n\rvert \le N/2 \end{cases};\quad x[n] = x[n+N]$	$X[k] = \dfrac{\sin\left(k\frac{\Omega_0}{2}(2M+1)\right)}{N\sin\left(k\frac{\Omega_0}{2}\right)}$
$x[n] = e^{jm\Omega_0 n}$	$X[k] = \begin{cases} 1, & K = m, m\pm N, m\pm 2N, \ldots \\ 0, & otro\ caso \end{cases}$
$x[n] = \cos(\mathrm{m}\Omega_0 n)$	$X[k] = \begin{cases} \frac{1}{2}, & K = \pm m, \pm m\pm N, \pm m\pm 2N, \ldots \\ 0, & otro\ caso \end{cases}$
$x[n] = \sin(\mathrm{m}\Omega_0 n)$	$X[k] = \begin{cases} \frac{1}{2j}, & K = m, m\pm N, m\pm 2N, \ldots. \\ -\frac{1}{2j}, & K = -m, -m\pm N, -m\pm 2N, \\ 0, & otro\ caso \end{cases}$
$x[n] = 1$	$X[k] = \begin{cases} 1, & K = 0, \pm N, \pm 2N, \ldots \\ 0, & otro\ caso \end{cases}$
$x[n] = \sum_{m=-\infty}^{\infty} \delta[n - mN]$	$X[k] = \frac{1}{N}$

SERIES DE FOURIER DE SEÑALES CONTINUAS (FS)

DOMINIO DEL TIEMPO	DOMINIO DE LA FRECUENCIA
$\boldsymbol{x(t) = \sum_{k=-\infty}^{\infty} X[k]e^{jk\omega_0 t}}$ $\boldsymbol{x(t)\ periódica\ de\ periodo\ T}$	$\boldsymbol{X[k] = \frac{1}{T}\int_{\langle T\rangle} x(t)e^{-jk\omega_0 t}\,dt}$ $\boldsymbol{\omega_0 = \frac{2\pi}{T}}$
$x(t) = \begin{cases} 1, & \lvert t\rvert \le T_s \\ 0, & T_s < \lvert t\rvert \le T/2 \end{cases}$	$X[k] = \dfrac{\sin(k\omega_0 T_s)}{k\pi}$
$x(t) = e^{jm\omega_0 t}$	$X[k] = \delta[k-m]$
$x(t) = \cos(\mathrm{m}\omega_0 t)$	$X[k] = \frac{1}{2}\delta[k-m] + \frac{1}{2}\delta[k+m]$
$x(t) = \sin(\mathrm{m}\omega_0 t)$	$X[k] = \frac{1}{2j}\delta[k-m] - \frac{1}{2j}\delta[k+m]$
$x(t) = \sum_{m=-\infty}^{\infty} \delta(t - mT)$	$X[k] = \frac{1}{T}$