**Transformadas unilaterales para diferentes señales**

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| **Propiedad** | **Señal** | **Transformada Z unilateral** |
| Desplazamiento a la derecha |  $x\left[ n-1 \right]$ |  ${{z}^{-1}}X\left( z \right)+x\left[ -1 \right]$ |
|  $x\left[ n-2 \right]$ |  ${{z}^{-2}}X\left( z \right)+{{z}^{-1}}x\left[ -1 \right]+x\left[ -2 \right]$ |
|  $x\left[ n-N \right]$ |  ${{z}^{-2}}X\left( z \right)+{{z}^{-1}}x\left[ -1 \right]+x\left[ -2 \right]+\ldots x\left[ -N \right]$ |
| Desplazamiento a la izquierda |  $x\left[ n+1 \right]$ |  $zX\left( z \right)-zx\left[ 0 \right]$ |
|  $x\left[ n+2 \right]$ |  ${{z}^{2}}X\left( z \right)-{{z}^{2}}x\left[ 0 \right]-zx\left[ 1 \right]$ |
|  $x\left[ n+N \right]$ |  ${{z}^{N}}X\left( z \right)-{{z}^{N}}x\left[ 0 \right]-{{z}^{N-1}}x\left[ 1 \right]+\ldots zx\left[ N-1 \right]$ |
| Conmutación periódica |  ${{x}\_{p}}\left[ n \right]u\left[ n \right]$ |  $\frac{{{X}\_{1}}\left( z \right)}{1-{{z}^{-N}}}$ |
| Teorema del valor inicial |  $x\left[ o \right]=\underset{z\to \infty }{\mathop{\lim }}\,X\left( z \right)$ |
| Teorema del valor final |  $\underset{n\to \infty }{\mathop{\lim }}\,x\left[ n \right]=\underset{z\to 1}{\mathop{\lim }}\,\left( z-1 \right)X\left( z \right)$ |