

## Tabla de series de Fourier

Descomposición en series de Fourier de algunas de las formas de onda más comunes que aparecen en la asignatura.

$f(x) = \begin{cases} 1 \rightarrow 0 < x < \pi \\ -1 \rightarrow -\pi < x < 0 \end{cases}$ $\frac{4}{\pi} \cdot \left( \frac{\text{sen}(x)}{1} + \frac{\text{sen}(3 \cdot x)}{3} + \frac{\text{sen}(5 \cdot x)}{5} + \dots \right)$	
$f(x) = \begin{cases} 0 \rightarrow 0 < x < \beta \\ 1 \rightarrow \beta < x < \pi - \beta \\ 0 \rightarrow \pi - \beta < x < \pi \end{cases}$ $\frac{4}{\pi} \cdot \left( \frac{\cos(\beta) \cdot \text{sen}(x)}{1} + \frac{\cos(3 \cdot \beta) \cdot \text{sen}(3 \cdot x)}{3} + \frac{\cos(5 \cdot \beta) \cdot \text{sen}(5 \cdot x)}{5} + \dots \right) =$ $\sum_{n=\text{impar}} \frac{4}{\pi} \cdot \frac{1}{n} \cos(n \cdot \beta) \cdot \text{sen}(n \cdot x)$	
$f_n = \frac{2}{3\pi} \cdot \frac{1}{n} \cdot \left( 2 + \cos\left(n \cdot \frac{\pi}{3}\right) - \cos\left(n \cdot \frac{2\pi}{3}\right) \right)$ $n = 1, 5, 7, 11, 13, \dots$	
$f(x) =  \text{sen}(x)  \rightarrow -\pi < x < \pi$ $\frac{2}{\pi} - \frac{4}{\pi} \cdot \left( \frac{\cos(2 \cdot x)}{1 \cdot 3} + \frac{\cos(4 \cdot x)}{3 \cdot 5} + \frac{\cos(6 \cdot x)}{5 \cdot 7} + \dots \right)$	