\[-L \leq x \leq L\]

$f$ piecewise smooth  \hspace{1cm} \text{May have jumps}

\[\text{Then}\quad \text{Fourier Series} \quad F(x) = \hat{f}(x) \quad \text{on} \quad |x| \leq L \quad \Leftrightarrow \quad f(x) \text{ is continuous (no jumps)} \quad \text{with} \quad F \text{ continuous (no jumps)} \quad \text{and} \quad \hat{f}(-L) = \hat{f}(L)\]