\[ f_s(x) = f(x) \cdot S(x) \]

\[ F_s(\omega) = \frac{F(\omega) \ast S(\omega)}{?} \]

\[ \text{same frequency variable} \]
\[ F_s(w) = \text{Sum of above} \]
Assumption function $S(x)$ is band limited.

\[
S(x) \hspace{1cm} S(w)
\]

\[
F_S(w) \hspace{1cm} f_S(w) \ast B(w)
\]

\[
f(x) = F^{-1}(f_S(w) \ast B(w))
\]
Bandlimited functions
Sample at twice max freq. for perfect reconstruction.

Nyquist-Shannon / Sampling Theorem