# Sinc function N1AL 6/8/2009

$$\text{sinc}(x) := \text{if}\left(x = 0, 1, \frac{\sin(\pi \cdot x)}{\pi \cdot x}\right)$$

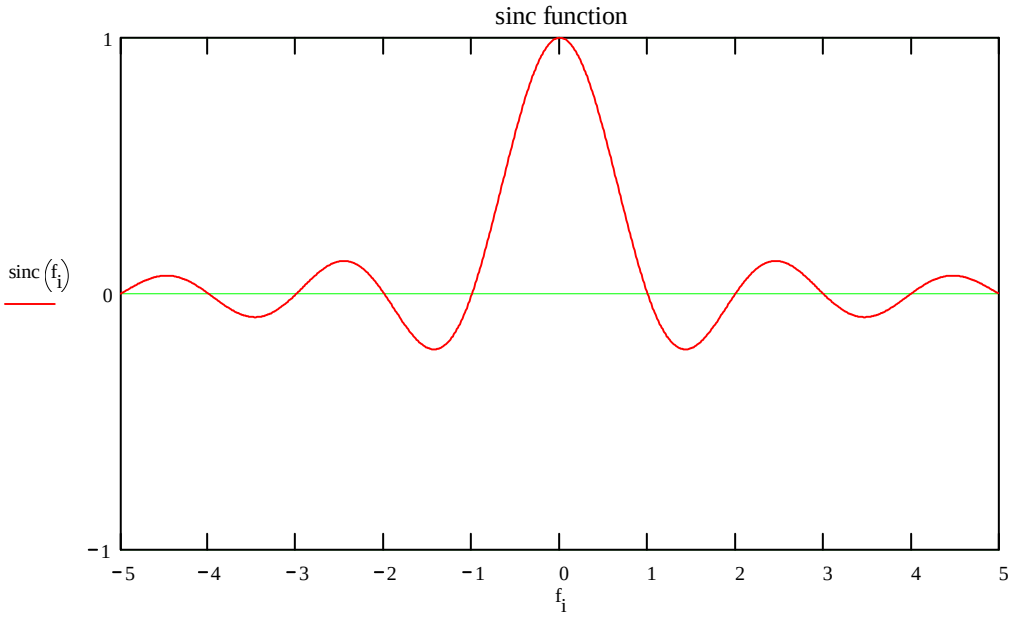
Define the sinc function.
(The "if" statement is required to avoid dividing by zero.)

$n := 1000 \quad i := 0 .. n - 1 \quad \text{len} := 10$

Set up constants for the graphics plot

$$f_i := \left(i - \frac{n}{2}\right) \cdot \frac{\text{len}}{n}$$

Offset the frequency to get f = 0 at the center
and scale the frequency to plot a length of (len).




$$\text{sinc\_dB}_i := 10 \cdot \log\left(\text{sinc}\left(f_i\right)^2 + 10^{-6}\right)$$

Convert to dB. (The $10^{-6}$ is to prevent taking the log of zero.)