Demonstration of <u>Reconstruction</u>
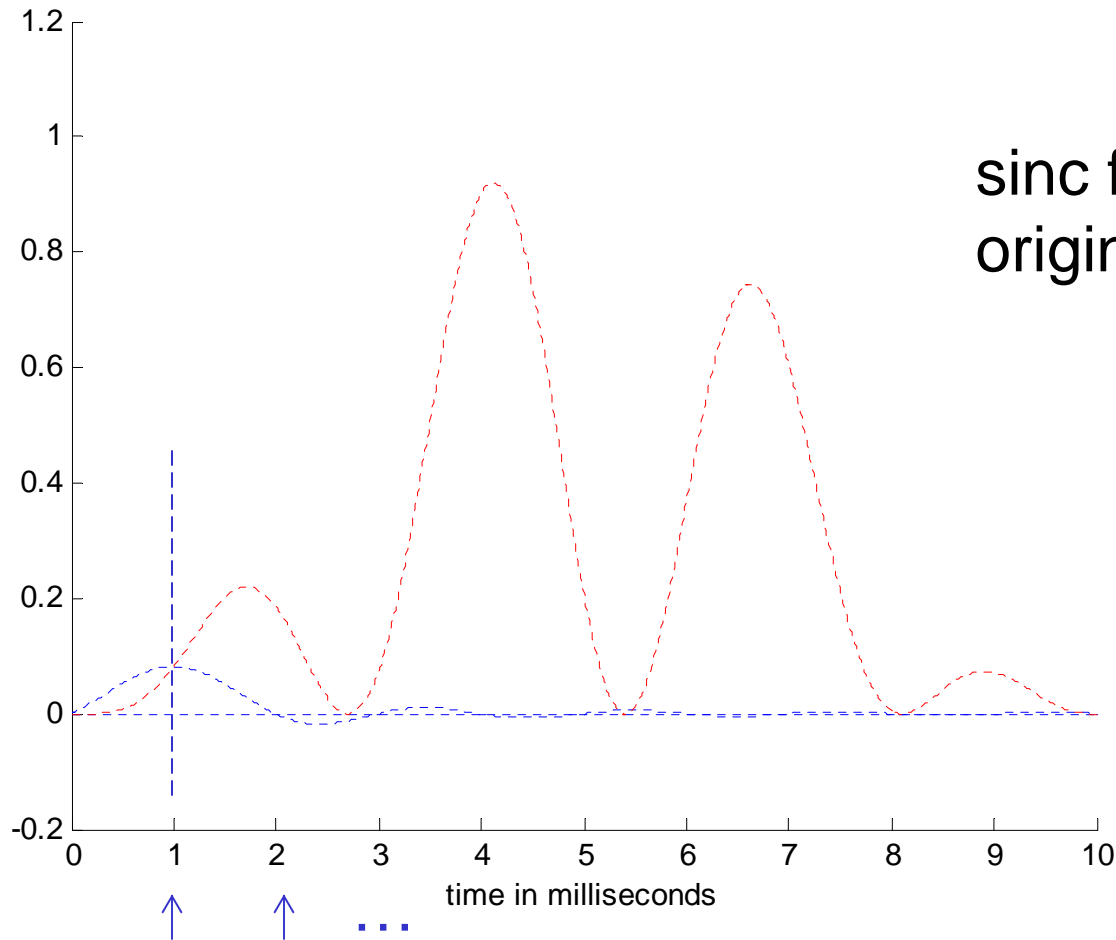## using sinc functions at n = 0 and 1
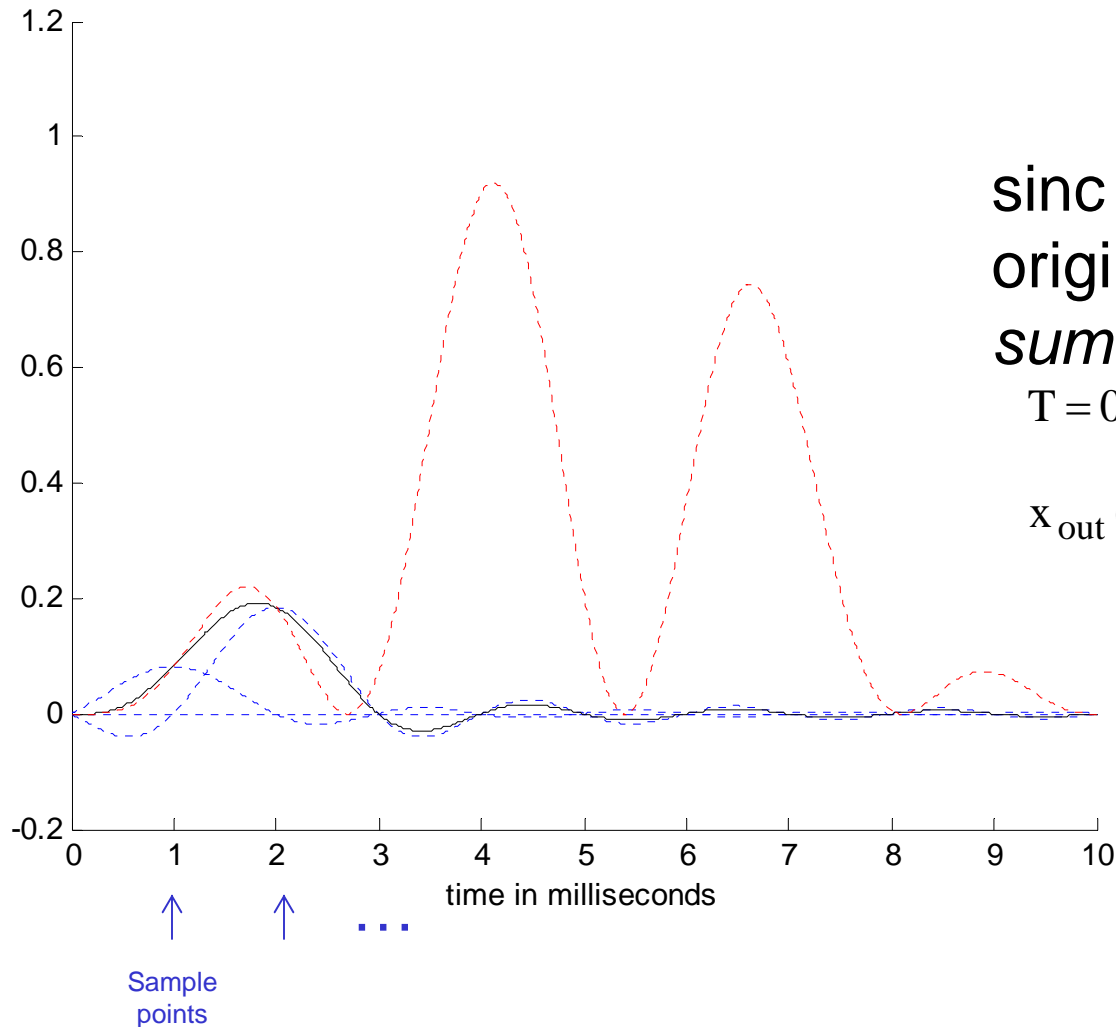

sinc functions in **blue**
original function in **red**

time in milliseconds

Sample
points

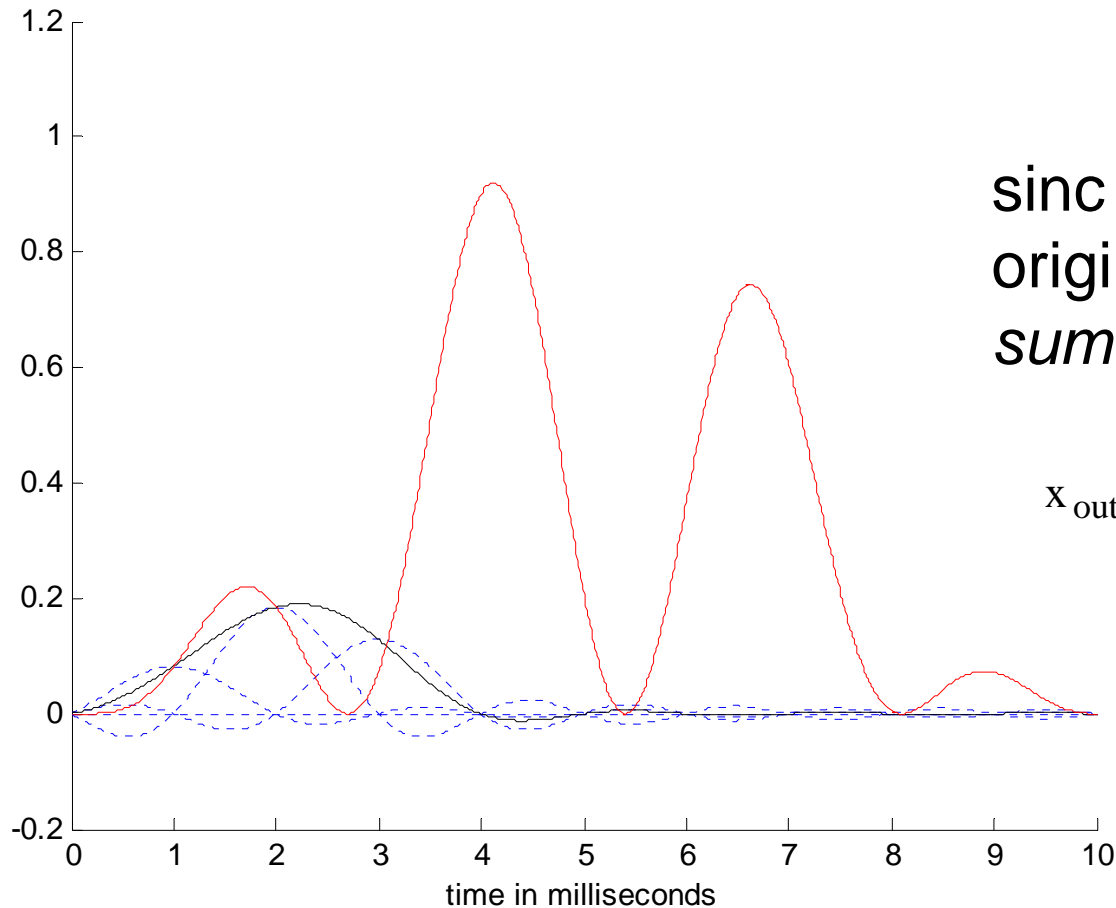# Demonstration of Reconstruction
using sinc functions at n = 0-2

sinc functions in blue
original function in red
sum in **black**

$$T = 0.001\,\sec$$

$$x_{out}(t) = \frac{1}{T} \sum_{n=0}^{2} x(nT) \sin c \frac{t - nT}{T}$$

time in milliseconds

↑   ↑   ...

Sample
points

Demonstration of Reconstruction
using sinc functions at n = 0-3

sinc functions in blue
original function in red
sum in black

$$x_{out}(t) = \frac{1}{T} \sum_{n=0}^{3} x(nT) \sin c \frac{t - nT}{T}$$

time in milliseconds

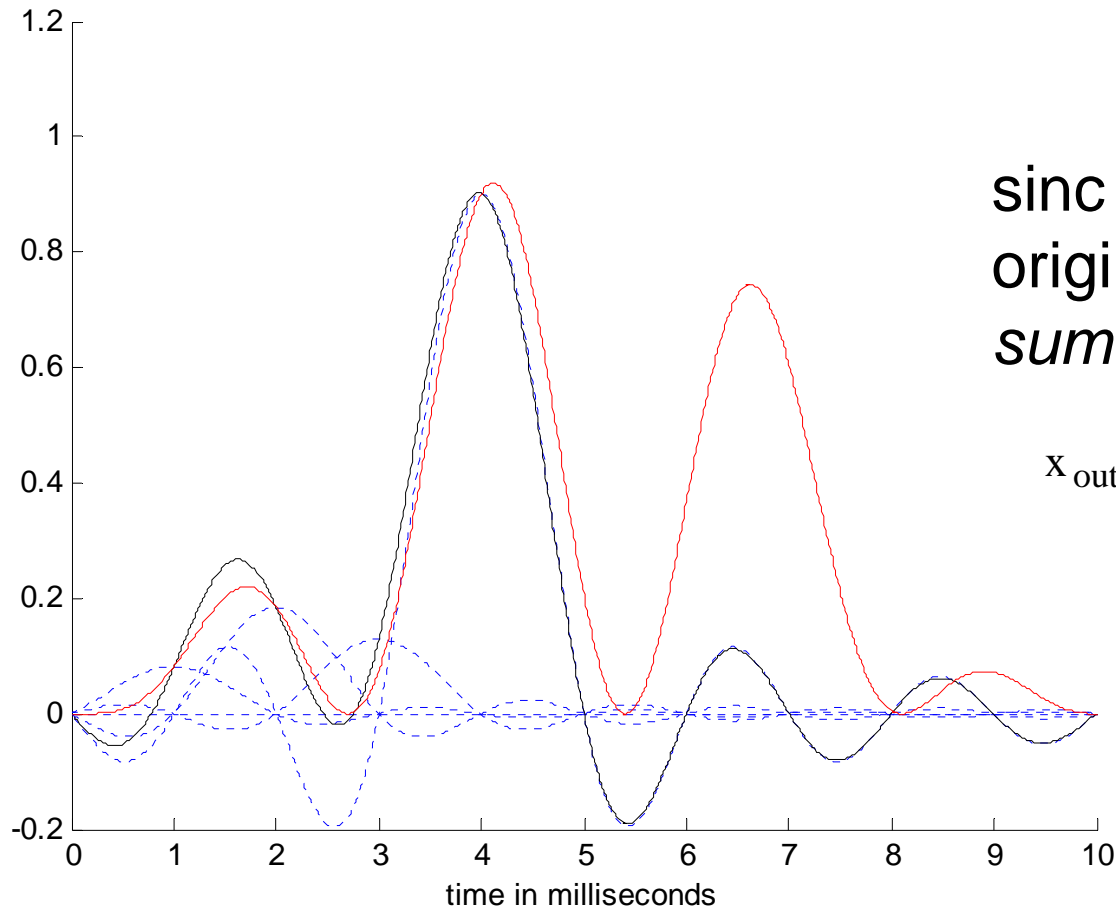# Demonstration of Reconstruction
using sinc functions at n = 0-4

sinc functions in blue
original function in red
sum in black

$$x_{out}(t) = \frac{1}{T} \sum_{n=0}^{4} x(nT) \sin c \frac{t - nT}{T}$$

time in milliseconds
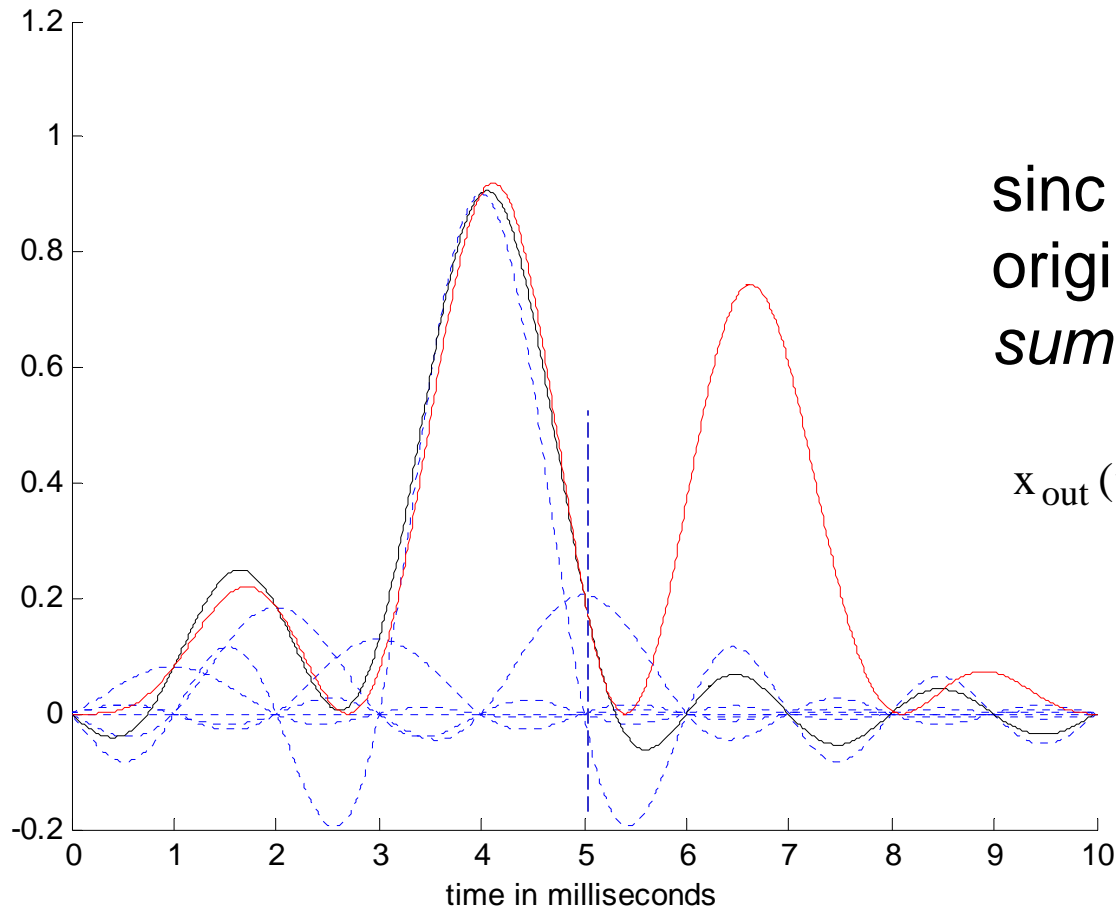
Demonstration of Reconstruction
using sinc functions at n = 0-5

sinc functions in blue
original function in red
sum in black

$$x_{out}(t) = \frac{1}{T} \sum_{n=0}^{5} x(nT) \sin c \frac{t - nT}{T}$$

time in milliseconds
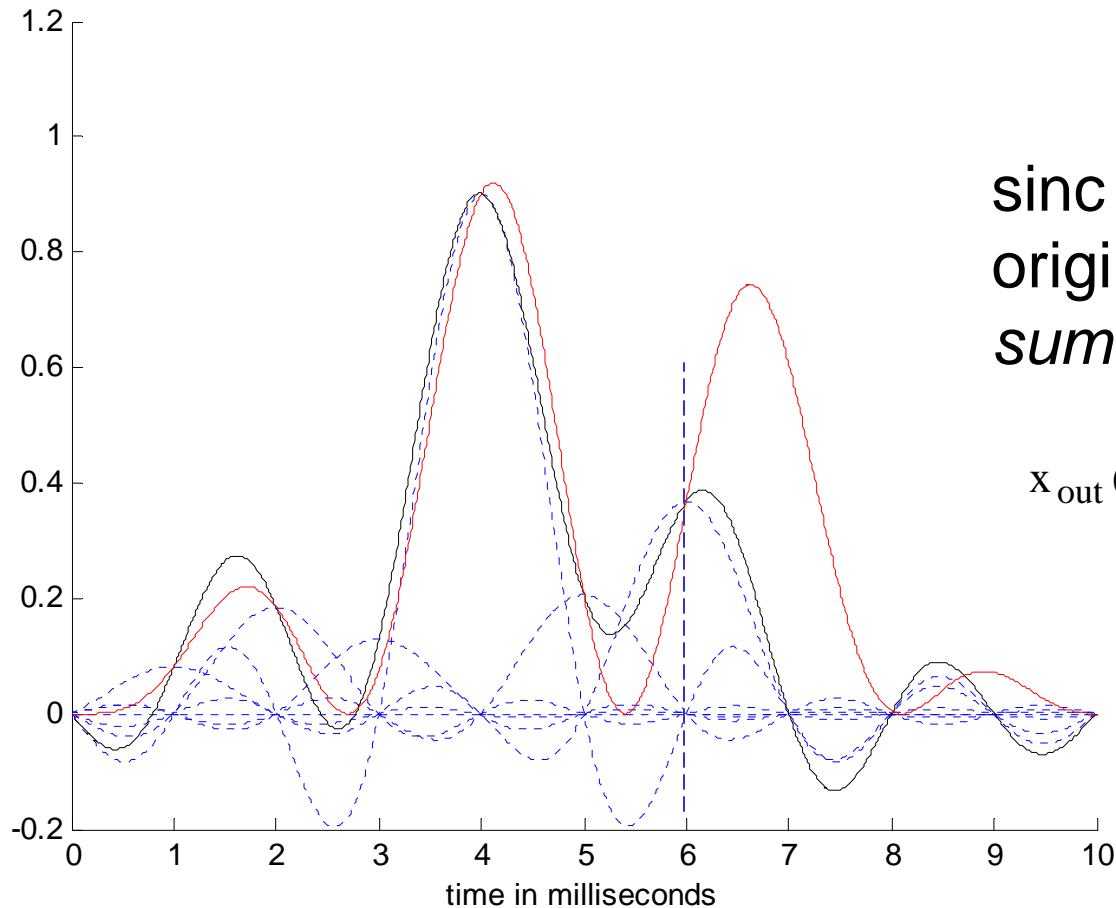
Demonstration of Reconstruction
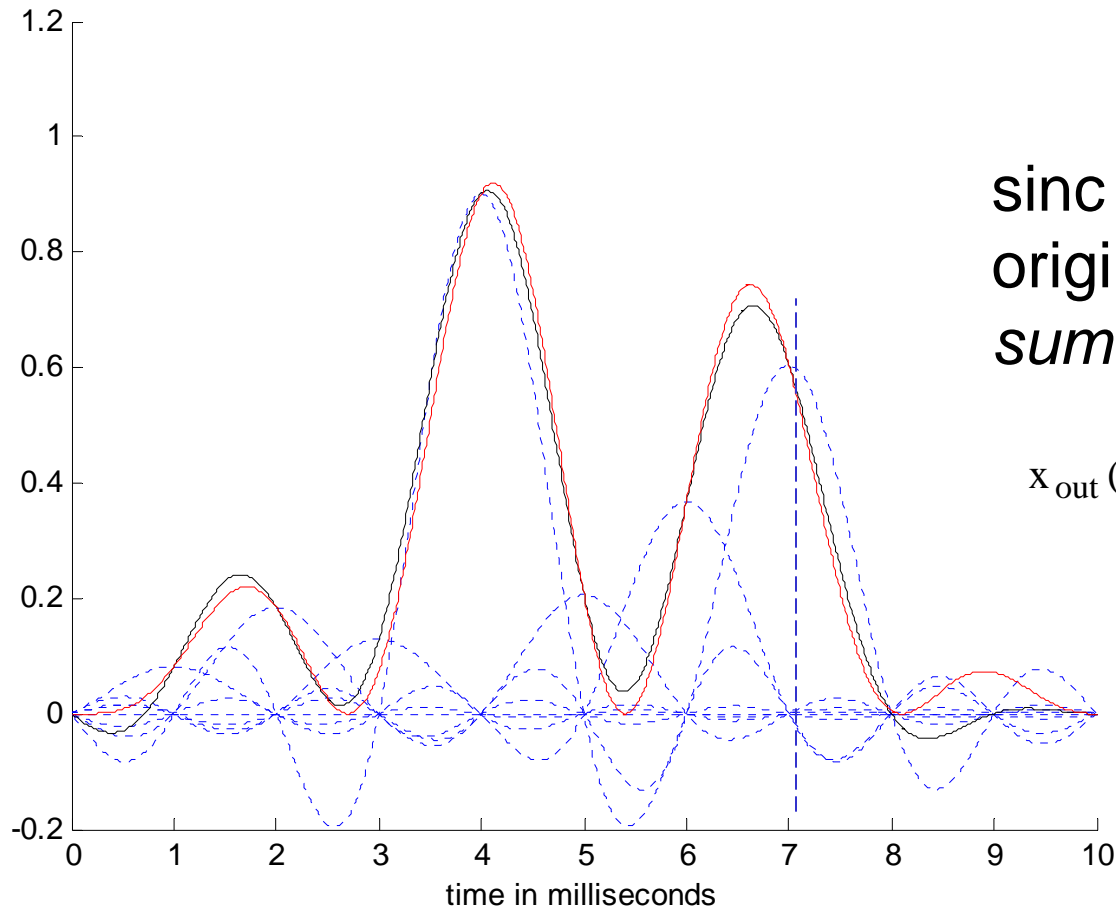## using sinc functions at n = 0-6

sinc functions in blue
original function in red
sum in black

$$x_{out}(t) = \frac{1}{T} \sum_{n=0}^{6} x(nT) \sin c \frac{t - nT}{T}$$

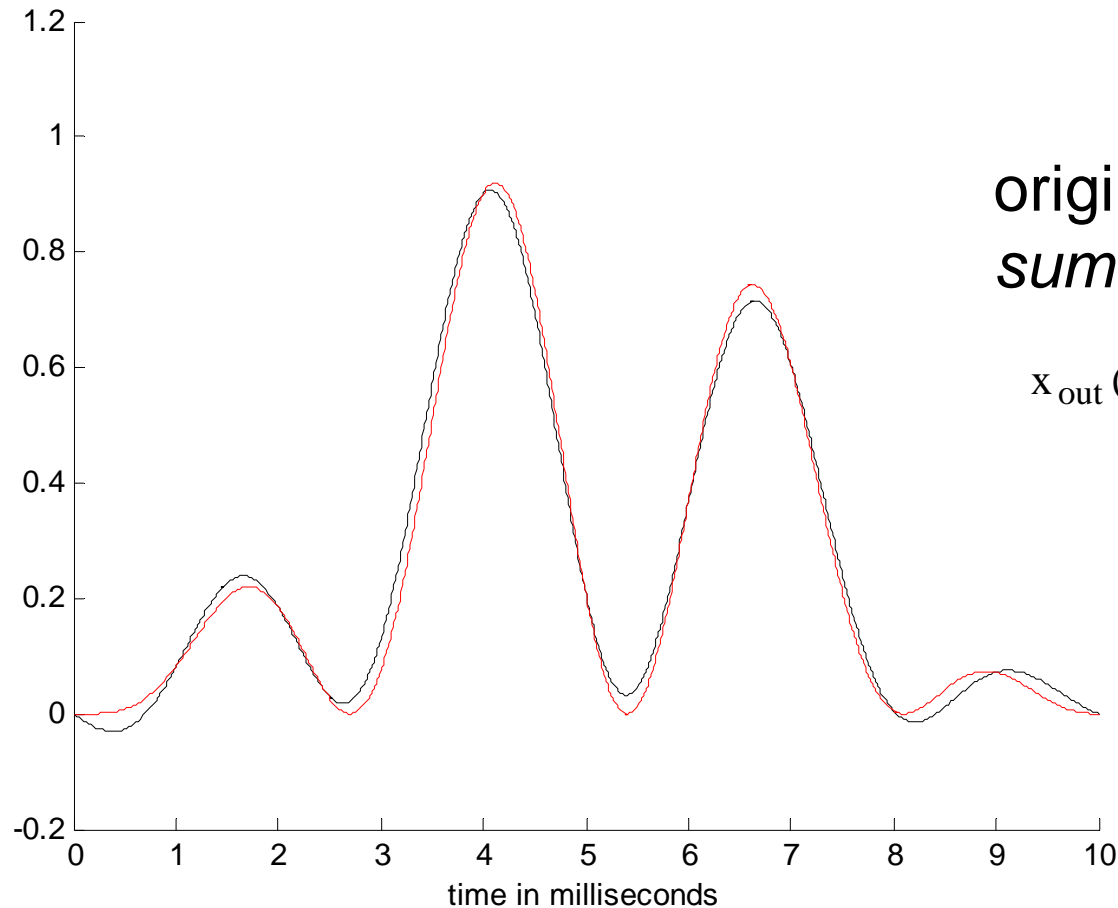# Demonstration of Reconstruction
using sinc functions at n = 0-7

sinc functions in blue
original function in red
sum in black

$$x_{out}(t) = \frac{1}{T} \sum_{n=0}^{7} x(nT) \sin c \frac{t - nT}{T}$$

time in milliseconds

Demonstration of Reconstruction
using sinc functions at n = 0-10

original function in red
sum in black

$$x_{out}(t) = \frac{1}{T} \sum_{n=0}^{10} x(nT) \sin c \frac{t - nT}{T}$$

time in milliseconds

Demonstration of <u>Reconstruction</u>

using sinc functions at n = 0-10

magnitude of Fourier transform
(magnitude spectrum)

half of sampling frequency

frequency in kHz

original function in red
sum in black

time in milliseconds