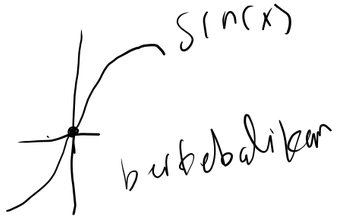
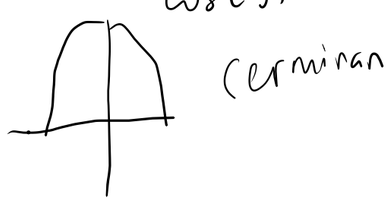
PEMSIN #1

Sinyal Ganjil

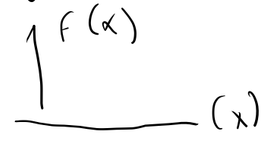


Sinyal Genap

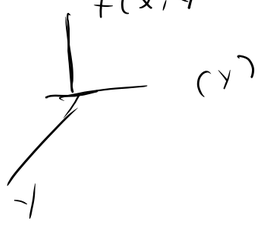


Sinyal 1 dimensi

sinyal 2 dimensi



Sinyal 3 dimensi



Konsep frekuensi

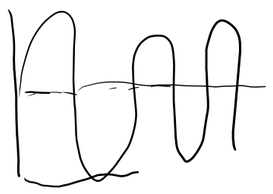
- Sinusiodal waktu kontinu

$$x(t) = A \sin(\Omega t + \theta) \quad (\Omega = 2\pi f t)$$

A = Amplitude, Ω = frekuensi sudut, θ = fasa

rad/s

ex:



1 periode

$F = \frac{1}{T}$ $f = 2$ Hz

$T = \frac{1}{F}$ Freq Angular (Ω) $= 2\pi . f = 4\pi$ rad/s

Amplitud = 5

- Sinusiodal waktu diskrit

$x(n) = A \sin(\omega n + \theta)$ rad/sample

$\omega = 2\pi f$

$f = \frac{F}{fs}$ $T_s = \frac{1}{fs}$ $fs = \frac{1}{T_s}$

frekuensi digital

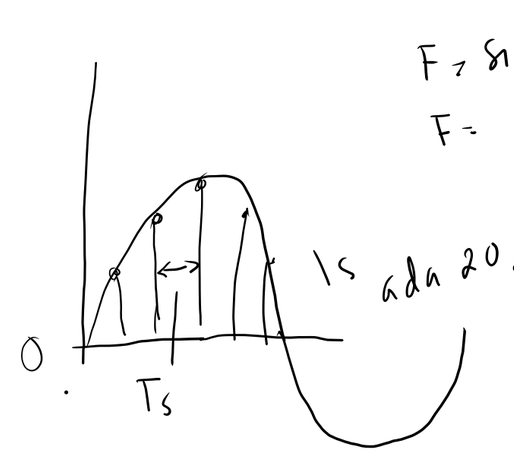
$x(n) = A \sin(2\pi f n + \theta)$

$F = f . fs$ → frekuensi informasi

$f = \frac{F}{fs} = \frac{\frac{1}{T}}{\frac{1}{T_s}} = \frac{T_s}{T} = 1$

F = sinyal informasi

$F = \frac{1}{T}$



$T_s = \frac{1}{20} = 0{,}05$ sec

$F_s = \frac{1}{0{,}05} = 20$ Hz

$X(n) = A \sin(\omega n + \theta)$

$\omega = 2\pi f \quad f = \frac{1}{20}$

$= 2\pi\, 0{,}05$

$= 0{,}1\pi$

$X(n) = A \sin(0{,}1\pi n)$