| **Time Domain** | **Frequency Domain** | **Other** |

1 Definition

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$$\lambda = \text{wavelength}$$
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2 Wavelength λ

$$\lambda = \frac{c}{f}$$

3 Period T

$$T = 1\,ms = 1000\,Hz$$

4 Angular Frequency ω

$$\omega = 2\pi f$$
$$= \frac{2\pi}{T}$$

$$\omega_0 = 2\pi T$$
$$= \pi \frac{f_0}{fs}$$

5 Unit Pulse & Unit Step

unit pulse:

$$\delta(n) = \begin{cases} 1, & \text{if } n = 0 \\ 0 & \text{otherwise} \end{cases}$$

unit step:

$$u(n) = \begin{cases} 1, & \text{if } n \geq 0 \\ 0 & \text{otherwise} \end{cases}$$

6 Harmonic Signals

$$n = [1 : t \cdot f_s]$$

$$x[n] = sin(\omega_0 n + \varphi)$$
$$= sin(2\pi f_0 T + \varphi)$$
$$= sin(2\pi \frac{f_0}{fs} n + \varphi)$$