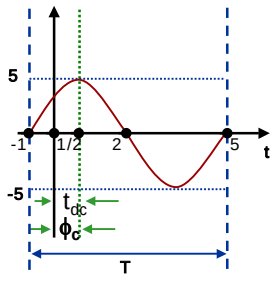
EE15
Comunicação de Dados

Aula 6-7

- Coseno:

$$h(t) = 5\cos\left(\frac{\pi}{3}t - \frac{\pi}{6}\right)$$

Representação pelo Coseno



- A=5, T=6seg, f=1/6 Hz
- t_{dc} = 1/2 seg.

$t_{dc} \rightarrow$

$$\left\{\begin{matrix} T \rightarrow 360° \\ t_{dc} \rightarrow \phi_C \end{matrix}\right\} \Rightarrow \phi_C = \frac{t_{dc}}{T} \cdot 360°$$

$$\phi_C = \frac{1/2}{6} \cdot 360° = 30°$$

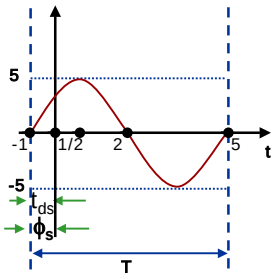
Coseno deslocado para direita, $\phi_C < 0$:

$\phi_C = -30^0$ ou $\phi_C = -\pi/6$ rad

- Seno:

$$h(t) = 5\,sen\left(\frac{\pi}{3}t + \frac{\pi}{3}\right)$$

Representação pelo Seno



- A=5, T=6seg, f=1/6 Hz
- t_{ds} = 1 seg.

$t_{ds} \rightarrow$

$$\left\{\begin{matrix} T \rightarrow 360° \\ t_{ds} \rightarrow \phi_S \end{matrix}\right\} \Rightarrow \phi_S = \frac{t_{ds}}{T} \cdot 360°$$

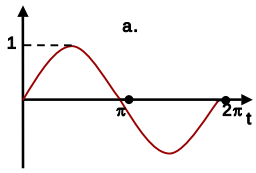
$$\phi_S = \frac{1}{6} \cdot 360° = 60°$$

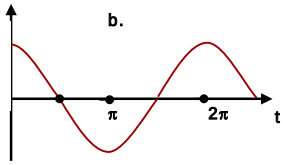
Seno deslocado para esquerda, $\phi_S > 0$:

$\phi_S = +60^0$ ou $\phi_S = +\pi/3$ rad

Exercícios

1. Extrair os parâmetros das seguintes sinusóides:



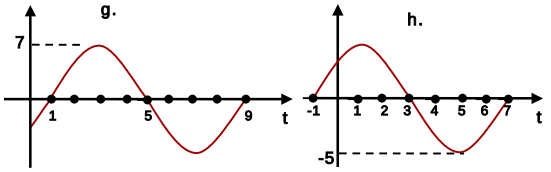


c. $g(t) = sen\,6t$

d. $h(t) = 15\sqrt{2}\cos(\sqrt{2}t + \frac{\pi}{2})$

e. $g(t) = sen(t - \pi)$

f. $h(t) = \frac{\cos(4t - \frac{\pi}{6})}{2}$



2. Esboçar as sinusoides:

a. $g(t) = 5\,sen\left(\frac{\pi}{2}t\right)$

b. $h(t) = 2\cos(2\pi \cdot t)$

c. $g(t) = sen\left(\pi \cdot t + \frac{\pi}{2}\right)$

d. $h(t) = \cos\left(4\pi \cdot t - \frac{\pi}{3}\right)$

e. $g(t) = 10\,sen\left(\pi \cdot t - \frac{\pi}{4}\right)$

f. $h(t) = \cos\left(\frac{\pi}{2}t\right)$