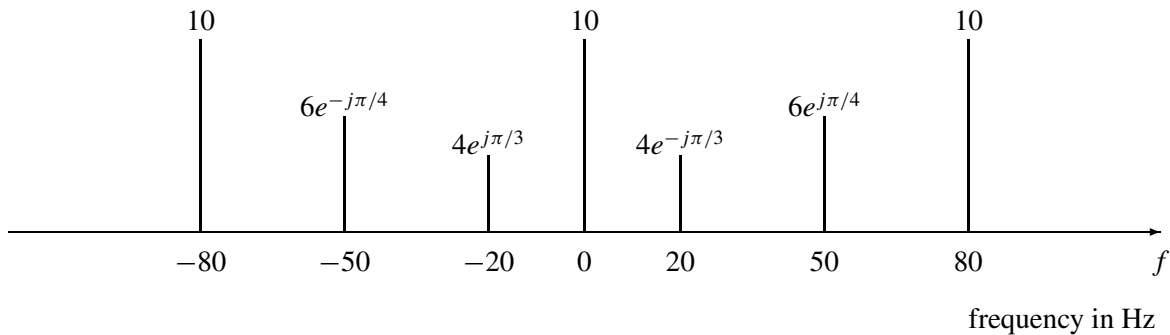


PROBLEM:

A real signal

$$x(t) = A \cos(40\pi t + \phi) + B \cos(\omega_1(t - \tau)) + C \cos(\omega_2 t) + D$$

has the following two-sided spectrum:



(a) Determine A , B , C , D , ω_1 , ω_2 , ϕ , and τ the signal $x(t)$ with the above spectrum.

$$A = \text{-----}$$

$$B = \text{-----}$$

$$C = \text{-----}$$

$$D = \text{-----}$$

$$\phi = \text{-----}$$

$$\omega_1 = \text{-----}$$

$$\omega_2 = \text{-----}$$

$$\tau = \text{-----}$$

(b) The signal $x(t)$ is periodic. Determine the fundamental frequency f_0 , of the signal $x(t)$.

$$f_0 = \text{-----}$$