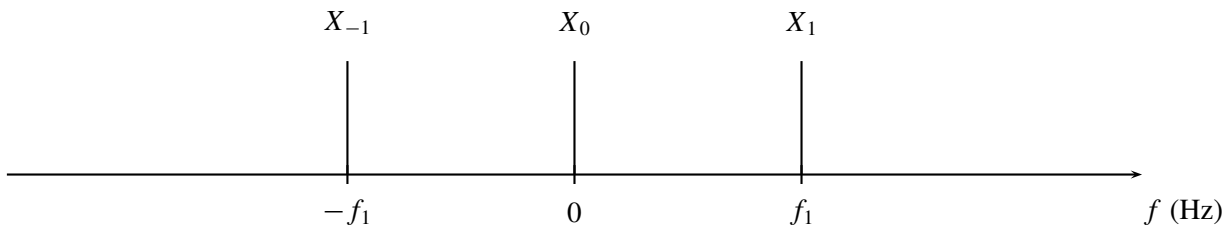


PROBLEM:

In each of the following parts, two different representations for a signal are given. Find the values of the parameters in the second representation so that the two representations are equivalent.

- (a) A signal $x(t)$ is given by $x(t) = 3 \cos(400\pi t + 3\pi/16)$, and its spectrum has the form



Determine the values for f_1 , X_0 , X_1 , and X_{-1} . Note that the frequencies f are given in Hertz.

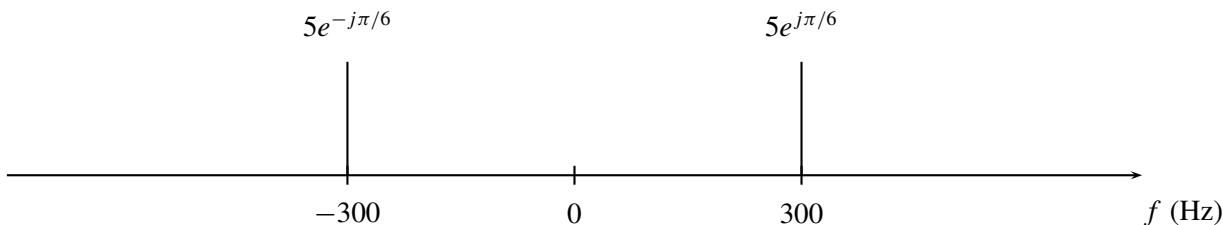
$$f_1 =$$

$$X_0 =$$

$$X_1 =$$

$$X_{-1} =$$

- (b) The spectrum of a signal $x(t)$ has the form



Therefore, the signal has the form

$$x(t) = A \cos(2\pi f_0(t - t_0))$$

Determine the values for A , f_0 , and t_0 ,

$$A =$$

$$f_0 =$$

$$t_0 =$$