

## PROBLEM:

The phase of a sinusoid can be related to time shift:

$$x(t) = A \cos(2\pi f_o t + \phi) = A \cos(2\pi f_o(t - t_1))$$

In the following parts, assume that the frequency of the sinusoidal wave is  $f = 100$  Hz. Determine whether each of the following is TRUE or FALSE, and explain.

- (a) “When  $t_1 = -1/500$  sec, a correct value for the phase is  $\phi = 2\pi/5$ .”
- (b) “When  $t_1 = 1/500$  sec, a correct value for the phase is  $\phi = -\pi/5$ .”
- (c) “When  $t_1 = 0.002$  sec, a correct value for the phase is  $\phi = 1.6\pi$ .”