

PROBLEM:

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

$$x(t) = A \cos(2\pi f_o t + \phi) = A \cos(2\pi f_o(t - t_1)) \quad (1)$$

In the following parts, assume that the frequency of the sinusoidal wave is $f = 60$ Hz.

(a) “When $t_1 = -1/300$ sec, the value of the phase is $\phi = \pi/5$.”

Explain whether this is TRUE or FALSE.

(b) “When $t_1 = 1/300$ sec, the value of the phase is $\phi = -2\pi/5$.”

Explain whether this is TRUE or FALSE.

(c) “When $t_1 = 1/50$ sec, the value of the phase is $\phi = -2\pi/5$.”

Explain whether this is TRUE or FALSE.