PROBLEM:

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

$$x(t) = A\cos(\omega_\circ t + \phi) = A\cos(\omega_\circ(t - t_1)) \tag{1}$$

(a) When the period of the sinusoidal wave is $T = 0.5$ sec, and $t_1 = 0.1$ sec, determine the value of the phase ϕ.

(b) When $x(t) = \Re e\{e^{j6\pi(t + 0.2)}\}$ determine the value of t_1 that would be needed in the representation of equation (1).