

PROBLEM:

The phase of a sinusoid $x(t) = A \cos(2\pi f_o t + \phi)$ can be related to the time shift of a positive peak.

- When the frequency is $f_o = 10$ Hz and the time of a positive maximum is $t_m = -0.04$ sec, determine the value for the phase ϕ (in radians).
- Now assume that the frequency f_o is unknown. If the phase is $\phi = +\pi/2$ radians and $x(t)$ has one of its positive peaks at $t_m = 3$ sec, determine the *smallest value* for the frequency f_o (in Hz). Make sure that your answer for f_o is positive.
- The answer in part (b) was the smallest one, but there are many other solutions that also have $\phi = +\pi/2$ rads. and $t_m = 3$ sec. Give a general formula for all possible frequencies.