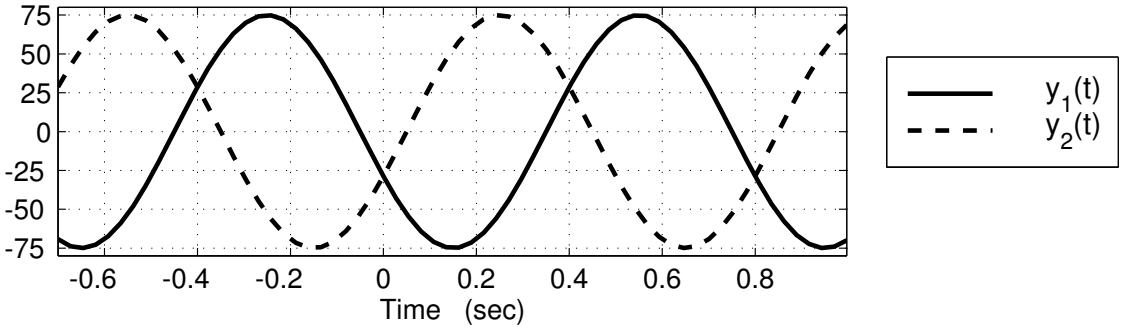
**PROBLEM:**

For the following short answer questions, write your answers in the space provided or circle the correct answer:

(a) In the figure below two sinusoidal signals are shown. Which one has a phase of $+5\pi/8$?
Circle the correct answer: $\mathbf{y_1(t)}$ or $\mathbf{y_2(t)}$.




(b) In the figure above both sinusoidal signals have the same frequency. What is the frequency ($\omega_0$) in radians/sec ? Circle the correct answer.
**(A)** $5\pi/8$ **(B)** $1.6\pi$ **(C)** $2.5\pi$ **(D)** $1.25\pi$ **(E)** $0.8$

(c) **TRUE** or **FALSE**: "If the signal $x(t)$ is a sinusoid and its spectrum has frequency components at $f = \pm 2$ Hz, then a new signal defined by $y(t) = x(t)\cos(200\pi t)$ has frequency components at $f = \pm 102$ Hz and $f = \pm 98$ Hz."

(d) The signal $x(t)$ has a spectrum containing frequency components at $f = 0, \pm 0.6$, and $\pm 2$ Hz. Determine the *fundamental period,* i.e., the shortest possible period.

(e) Circle the correct answer: When you add $4\cos(16\pi t + 3\pi/4) + 4\cos(16\pi t - \pi/4)$ the maximum value of the resulting signal is:
**(A) equal to 0, (B) equal to 8, (C) greater than 8, (D) less than 8, but not 0.**