

Problem 1.5 Two waves, $y_1(t)$ and $y_2(t)$, have identical amplitudes and oscillate at the same frequency, but $y_2(t)$ leads $y_1(t)$ by a phase angle of 60° . If

$$y_1(t) = 4\cos(2\pi \times 10^3 t),$$

write the expression appropriate for $y_2(t)$ and plot both functions over the time span from 0 to 2 ms.

Solution:

$$y_2(t) = 4\cos(2\pi \times 10^3 t + 60^\circ).$$

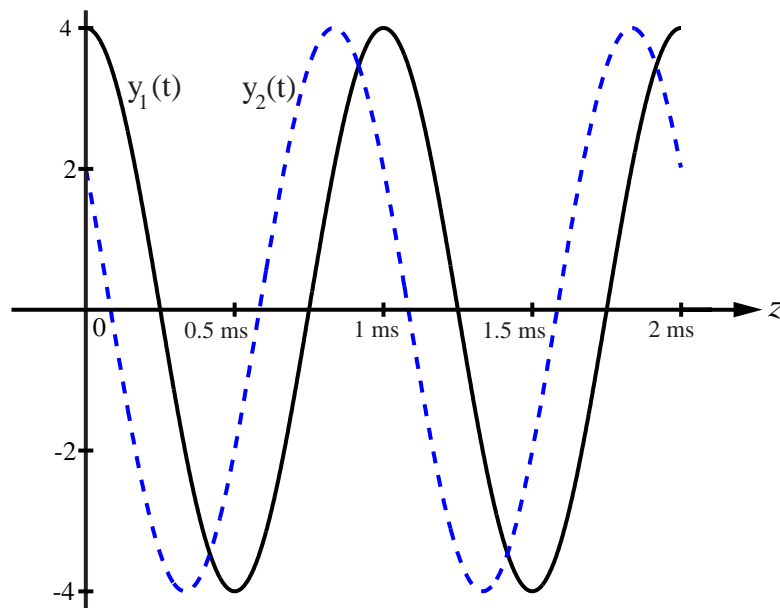


Figure P1.5: Plots of $y_1(t)$ and $y_2(t)$.