

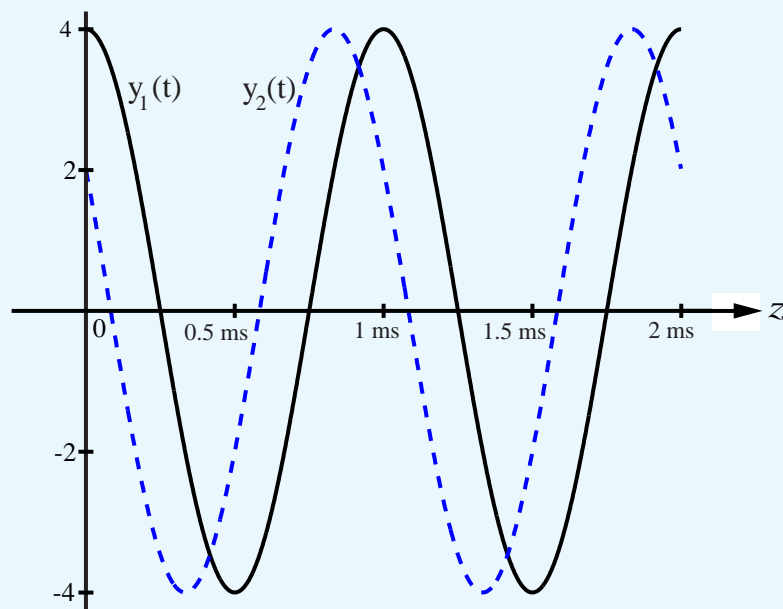
**1.5** Two waves,  $y_1(t)$  and  $y_2(t)$ , have identical amplitudes and oscillate at the same frequency, but  $y_2(t)$  leads  $y_1(t)$  by a phase angle of  $60^\circ$ . If

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

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  $y_2(t)$ .