

## PROBLEM:

Solve the following simultaneous equations via the phasor method. Is the answer for  $A_1$ ,  $A_2$ ,  $\phi_1$ ,  $\phi_2$  unique? Provide a geometric (phasor) diagram to explain the answer.

$$\cos(\omega_0 t - 2\pi/3) = 5A_1 \cos(\omega_0 t + \phi_1) - 6A_2 \cos(\omega_0 t + \phi_2)$$

$$2 \cos(\omega_0 t) = -4A_1 \cos(\omega_0 t + \phi_1) + 5A_2 \cos(\omega_0 t + \phi_2)$$