

## PROBLEM:

Solve the following equation for  $M$  and  $\psi$ . Obtain *all* possible answers. Use the phasor method, and provide a geometrical diagram to explain the answer.

$$5 \cos(\omega_0 t) = M \cos(\omega_0 t - \pi/6) + 5 \cos(\omega_0 t + \psi)$$

HINT: describe the figure in the  $z$ -plane given by the set  $\{z : z = e^{j\psi} - 5\}$  where  $0 \leq \psi \leq 2\pi$ .