

PROBLEM:

Define $x(t)$ as

$$x(t) = 5 \cos(\omega_0 t + 90^\circ) + 7 \cos(\omega_0 t + 225^\circ) + 7 \cos(\omega_0 t - 45^\circ)$$

Simplify $x(t)$ into the standard form: $x(t) = A \cos(\omega_0 t + \phi)$. Use phasors to do the algebra, but also provide a plot of the vectors represented by each of the three phasors.