PROBLEM:

Solve for the unknown sinusoid in the following equation:

$$\cos(1.5\pi t - 5\pi/4) + A\cos(\omega_0 t + \phi) = 2\cos(1.5\pi(t+5)) + 3\cos(1.5\pi(t-6))$$

(a) Express your answer in the form $x(t) = A\cos(\omega_0 t + \phi)$ by finding the numerical values of A and ϕ, as well as ω_0 (give the correct units).

(b) Make **TWO** complex plane plots to illustrate how complex amplitudes (phasors) are combined cia vector addition to solve part (a).On the first plot, show a "head-to-tail" vector plot of the two complex amplitudes whose values are given by the sinusoids on the **left** side of the equal sign; on the second plot, show a "head-to-tail" vector plot of the two complex amplitudes for the sinusoids on the **right** side of the equal sign.