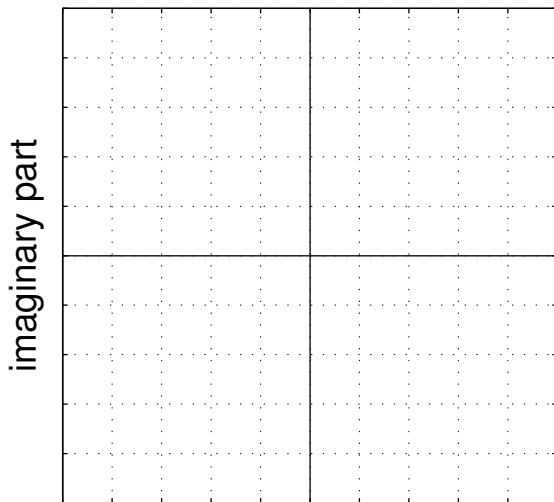


**PROBLEM:**Define  $x(t)$  as

$$x(t) = 4 \cos(20\pi(t + .075)) + 4\sqrt{3} \cos(20\pi t + 2\pi/3)$$

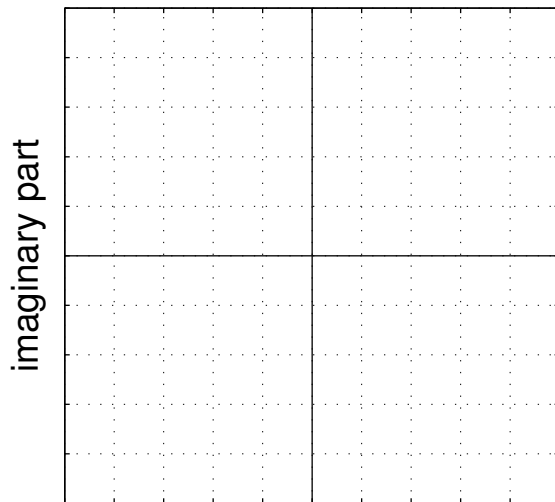
- (a) Use phasor addition to express  $x(t)$  in the form  $x(t) = A \cos(\omega_0 t + \phi)$  by finding the numerical values of  $A$  and  $\phi$ , as well as  $\omega_0$ .
- (b) Make two complex plane plots to illustrate how complex amplitudes (phasors) were used to solve part (a). On the first plot, show the two complex amplitudes being added; on the second plot, show your solution as a vector and the addition of the two complex amplitudes as vectors (head-to-tail).

Two vectors here.



real part

Head-to-tail plot here.



real part