PROBLEM:

Given the sinusoidal signal

$$x(t) = -4\sin(400\pi t - \pi/4)$$

(a) Express $x(t)$ as the sum of two complex rotating phasors, one rotating in the clockwise direction and the other rotating in the counter-clockwise direction.

(b) Determine the complex phasor Z and frequency ω such that $x(t) = \Re e\{Ze^{j\omega t}\}$.