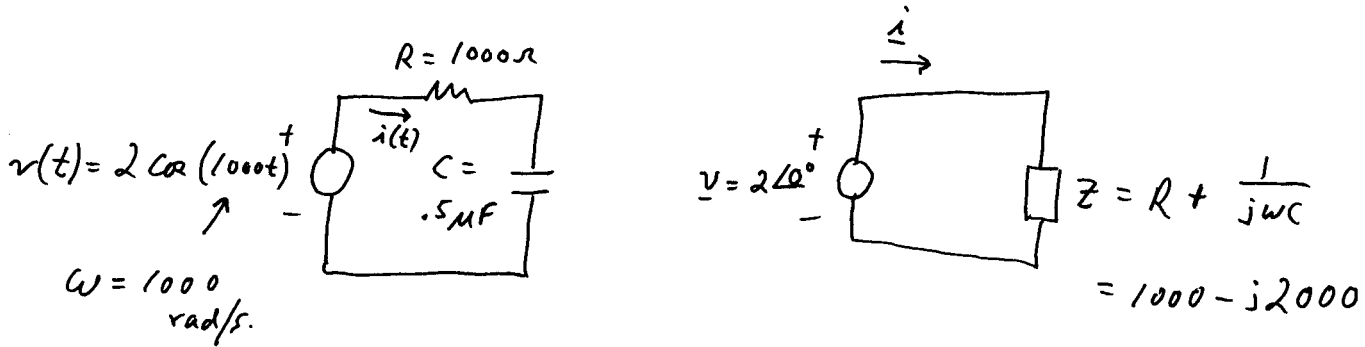


ELEC 105: Homework 9

Please submit solutions to the following problems on Wednesday, April 7, 2004.

1. A circuit and its phasor/impedance equivalent are shown below. Determine the current $i(t)$, and sketch $i(t)$ versus t . Indicate the sine wave amplitude, frequency, and phase in the sketch. Note that $\frac{1}{j} = \frac{1\angle 0^\circ}{1\angle 90^\circ} = 1\angle -90^\circ = -j$.



2. Classify each circuit below as one of the following types of filter: low-pass, high-pass, or band-pass. You can do this either by thinking about how each circuit operates as $\omega \rightarrow 0$ and $\omega \rightarrow \infty$, or you can analyze the circuits as voltage dividers with impedances and study the resulting equations.

