Homework Set #2

Due Wednesday, January 23, 2008 (In class)

ECE 202 – Circuits and Systems II
Spring 2008

Michigan State University
Department of Electrical and Computer Engineering

Please remember to follow the rules and policies outlined in the ECE 202 Homework section of the class webpage: http://www.egr.msu.edu/classes/ece202/radha

**Sinusoidal Signals and Phasors**

[1] Convert the following sinusoidal functions into phasors:

(a) \( v(t) = 25 \cos \left( 100\pi t + \frac{\pi}{6} \right) \text{ V} \).

(b) \( i(t) = 10 \sin \left( \omega t + \left( \frac{\pi}{3} \right) \right) \text{ A} \).

[2] Convert the following phasors to sinusoidal functions:

(a) \( \tilde{V} = 5e^{j(\pi/4)} \text{ V} \); \( f = 1 \text{ KHz} \).

(b) \( \tilde{V} = 6 - j8 \text{ V} \); \( T = 100 \text{ msec} \).

(c) \( \tilde{I} = 12 + j10 - \frac{2}{j} \text{ A} \); \( \omega = 100 \text{ radians/sec} \).

(d) \( \tilde{I} = \frac{6 + j16}{4 - j6} \text{ A} \); \( f = 100 \text{ Hz} \).
Equivalent Impedance

[3] 8-12

[4] 8-16

Phasor Circuit Analysis

[5] 8-24

[6] 8-26