ECE 300
Spring Semester, 2004
HW Set #9

April 6, 2004 **Name**_____
wlg Print (last, first)

Use engineering paper. Work only on one side of the paper. Use this sheet as your cover sheet, placed on top of your work and stapled in the top left-hand corner. Number the problems at the top of the page, in the center of the sheet. **Do neat work. Underline your answers. Show how you got your equations.** **Be sure to show how you got your answers.** Each problem counts 10 points.

8.4 (a) $v_a(t)=L_1\frac{di_1(t)}{dt}+M\frac{di_2(t)}{dt}$ $v_b(t)$ on your own

(b) on your own

8.12 $\underline{\mathbf{V}}_0 = 1.92\angle 29.6$ V

8.24 $\underline{\mathbf{V}}_0 = 4.48\angle -26.6$ V

8.30 $\underline{\mathbf{I}}_0 = 2.71\angle -49.4$

8.35 $\mathbf{Z} = 1.56\angle 42.3\ \Omega$

8.38 $\mathbf{Z} = 1.94\angle -33.7\ \Omega$

8.46 $\underline{\mathbf{I}}_1 = 4.7\angle 18.7$ A, $\underline{\mathbf{I}}_2 = 2.35\angle 18.7$ A

$\underline{\mathbf{V}}_1 = 15\angle\angle 37.1$ V $\underline{\mathbf{V}}_2 = 30\angle 37.1$ V

8.50 $\underline{\mathbf{I}}_1 = 6.19\angle 25.4$ A $\underline{\mathbf{I}}_2 = 3.43\angle -121$ A

$\underline{\mathbf{V}}_1 = 5.15\angle -31$ V $\underline{\mathbf{V}}_2 = 3.43\angle 149$ V

8.54 $\mathbf{Z} = 180 + j32\ \Omega$

3FE-2 $n = 1/4$, $P_{3\Omega} = 37.5$ Watts

3FE-3 $a = 25$