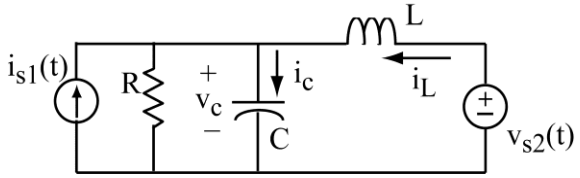
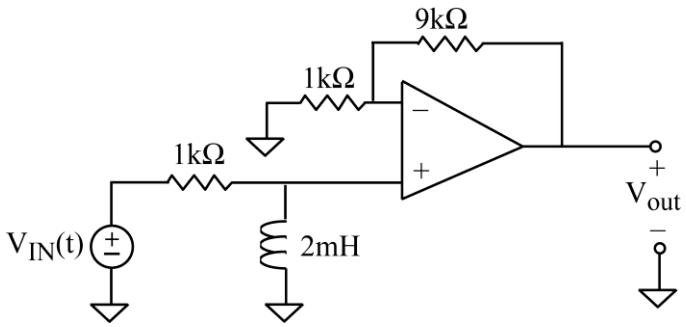
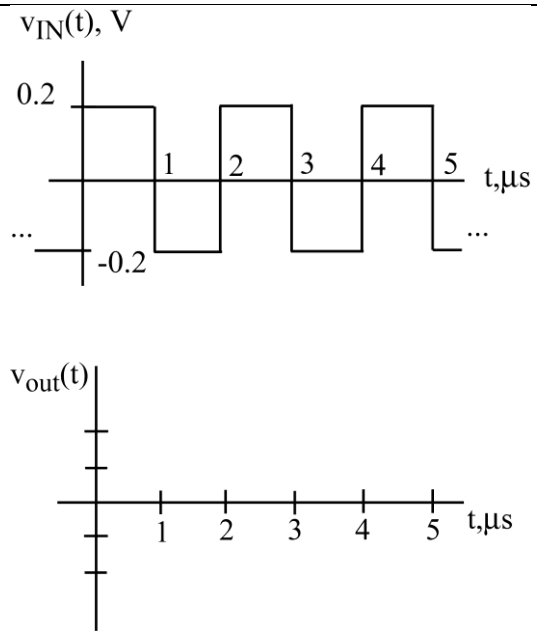
ECE 201
Spring 2013
Homework Sets
(All problems are from the 3rd edition of DeCarlo and Lin)

HW Set #1 Due W 1/9	1. Chapter 1 – prob. 1 (For part e, use Figure P1.1b) 2. Chapter 1 – prob. 7(a) 3. Chapter 1 – prob. 8
HW Set #2 Due F 1/11	1. Chapter 1 – prob. 11 2. Chapter 1 – prob. 13 3. Chapter 1 – prob. 17
HW Set #3 Due M 1/14	1. Chapter 1 – prob. 19 (Be careful. Table 1.2 lists relative, not absolute, resistivities!) 2. Chapter 1 – prob. 22(a) 3. Chapter 1 – prob. 27 4. Chapter 1 – prob. 37
HW Set #4 Due W 1/16	1. Chapter 2 – prob. 3 2. Chapter 2 – prob. 6 3. Chapter 2 – prob. 14 (there are 2 typos: 1) In 14.(a), "Figure P2.13" should be "Figure P2.14") 2) In 14.(b) "$I_1 = 4A$" should be "$I_{in} = 4A$" 4. Chapter 2 – prob. 17
HW Set #5 Due F 1/18	1. Chapter 2 – prob. 26 (It is the current out of the positive terminal of the source) 2. Chapter 2 – prob. 32 (a) 3. Chapter 2 – prob. 40
HW Set #6 Due W 1/23	1. Chapter 2 – prob. 39 2. Chapter 2 – prob. 46 3. Chapter 2 – prob. 63
HW Set #7 Due F 1/25	1. Chapter 3 – prob. 2 2. Chapter 3 – prob. 6(a)
HW Set #8 Due M 1/28	1. Chapter 3 – prob. 13 2. Chapter 3 – prob. 18 3. Chapter 3 – prob. 26
HW Set #9 Due W 1/30	1. Chapter 3 – prob. 37 2. Chapter 3 – prob. 42 3. Chapter 3 – prob. 52

HW Set #10 Due F 2/1	1. Chapter 5 – prob. 1 2. Chapter 5 – prob. 21(a) 3. Chapter 5 – prob. 26
HW Set #11 Due M 2/4	1. Chapter 5 – prob. 41 2. Chapter 5 – prob. 43
HW Set #12 Due W 2/6	1. Chapter 6 – prob. 2 2. Chapter 6 – prob. 5
HW Set #13 Due M 2/11	1. Chapter 6 – prob. 9(a) and (b) 2. Chapter 6 – prob. 17 3. Chapter 6 – prob. 21 4. Chapter 6 – prob. 37
HW Set #14 Due W 2/13	1. Chapter 6 – prob. 48 2. Chapter 6 – prob. 53 In Figure P6.53, change the symbol inside the circle on the left of the circuit to an upward arrow for i_{S1}.
HW Set #15 Due F 2/15	1. Chapter 7 – prob. 2 (Change part (b) to read "Find and plot the instantaneous absorbed power.") 2. Chapter 7 – prob. 4
HW Set #16 Due M 2/18	1. Chapter 7 – prob. 12 2. Chapter 7 – prob. 16 3. Chapter 7 – prob. 17
HW Set #17 Due W 2/20	1. Chapter 7 – prob. 27 2. Chapter 7 – prob. 38 3. Chapter 7 – prob. 41
HW Set #18 Due F 2/22	1. Chapter 8 – prob. 4 2. Chapter 8 – prob. 5 3. Chapter 8 – prob. 9(b)
HW Set #19 Due M 2/25	1. Chapter 8 – prob. 18 (a) and (b) 2. Chapter 8 – prob. 19 (a) and (b) 3. Chapter 8 – prob. 20 (a) and (b)
HW Set #20 Due W 2/27	1. Chapter 8 – prob. 18 (c) - (e) 2. Chapter 8 – prob. 19 (c) - (e) 3. Chapter 8 – prob. 20 (c) and (d)
HW Set #21 Due F 3/1	1. Chapter 8 – prob. 31 2. Chapter 8 – prob. 33

HW Set #22 Due M 3/4	1. Chapter 9 – prob. 1 2. Chapter 9 – prob. 10
HW Set #23 Due W 3/6	1. Chapter 9 – prob. 16(b) 2. Chapter 9 – prob. 18 (use C = 10mF instead of C = 8mF) 3. Chapter 9 – prob. 20
HW Set #24 Due M 3/18	1. Chapter 9 – prob. 28 2. Chapter 9 – prob. 32(a) (complete response only)
HW Set #25 Due W 3/20	1. Chapter 9 – prob. 43 2. Chapter 9 – prob. 49 Please use the following figure in place of Figure P9.49 in the textbook. 
HW Set #26 Due F 3/22	1. Chapter 4 – prob. 3 2. Chapter 4 – prob. 5
HW Set #27 Due M 3/25	1. Chapter 4 – prob. 7 2. Chapter 4 – prob. 13
HW Set #28 Due W 3/27	1. Chapter 6 – prob. 29 2. Chapter 6 – prob. 31 (Change answer to part b to "(b) 3R"
HW Set #29 Due F 3/29	1. Chapter 8 – prob. 40(a) 2. The op amps in the following circuit are ideal For $v_{IN}(t)$ as shown in the plot, find and plot $v_{out}(t)$. Label the axis. 



HW Set #30
Due M 4/1

1. Add the complex numbers $z_1 = 10e^{j\pi/4}$ and $z_2 = 5e^{j5\pi/8}$. Express your answer (a) in real and imaginary parts, and (b) as a magnitude and phase. Draw z_1, z_2 and $z_1 + z_2$ on the complex plane. Label the real part, the imaginary part, and magnitude and the phase of $z_1 + z_2$.
2. Multiply the complex numbers z_1 = 12-16 j and z_2 = 1+0.75j. Express your answer (a) in real and imaginary parts, and (b) as a magnitude and phase. (c) Compare $|z_1|\,|z_2|$ to $|z_1 z_2|$. (d) What is the relationship between the phase of z_1, the phase of z_2, and the phase of $z_1 z_2$?
3. For z_1 and z_2 given in problem 2, determine z_1/z_2. Express your answer (a) in real and imaginary parts, and (b) as a magnitude and phase. (c) Compare $|z_1|$ and $|z_2|$ to $|z_1 / z_2|$. (d) What is the relationship between the phase of z_1, the phase of z_2, and the phase of z_1/z_2?

HW Set #31 Due W 4/3	1. Chapter 10 – prob. 7 2. Chapter 10 – prob. 10 3. Chapter 10 – prob. 14
HW Set #32 Due F 4/5	1. Chapter 10 – prob. 21 2. Chapter 10 – prob. 23 3. Chapter 10 – prob. 25
HW Set #33 Due M 4/8	1. Chapter 10 – prob. 30 2. Chapter 10 – prob. 40
HW Set #34 Due W 4/10	1. Chapter 10 – prob. 46 2. Chapter 10 – prob. 54 3. Chapter 10 – prob. 60
HW Set #35 Due M 4/15	1. Chapter 10 – prob. 66 2. Chapter 10 – prob. 68
HW Set #36 Due W 4/17	1. Chapter 11 – prob. 1 2. Chapter 11 – prob. 2
HW Set #37 Due F 4/19	1. Chapter 11 – prob. 5 2. Chapter 11 – prob. 7 3. Chapter 11 – prob. 9 4. Chapter 11 – prob. 10
HW Set #38 Due M 4/22	1. Chapter 11 – prob. 17 2. Chapter 11 – prob. 20
HW Set #39 Due W 4/24	1. Chapter 11 – prob. 22 2. Chapter 11 – prob. 23 3. Chapter 11 – prob. 26 The last sentence before (a) should be: “This constitutes a pf of 0.866 lagging.”
HW Set #40 Due F 4/26	1. Chapter 11 – prob. 30 2. Chapter 11 – prob. 37