

ECE 202 (Fall 2007)  
Homework No. 4  
Due: Friday, 09/28/2007

(P.1) [25 pts.] Obtain  $V_o$  in the circuit of Figure 1 using mesh analysis. Solve your matrix equation in two ways:

- (a) By hand
- (b) Using MATLAB. Please submit a printout of your MATLAB code with your answers.

Hints:

1. For the top half of this circuit involving a current source “sandwiched” between two current loops, form one supermesh with the two loops from the top half of the circuit.
2. By applying KCL to the node directly above the top current source, it can be observed that the current in the top-right loop is the sum of the currents from the top-left loop and the output of the current source (for loop currents defined in a clockwise direction).

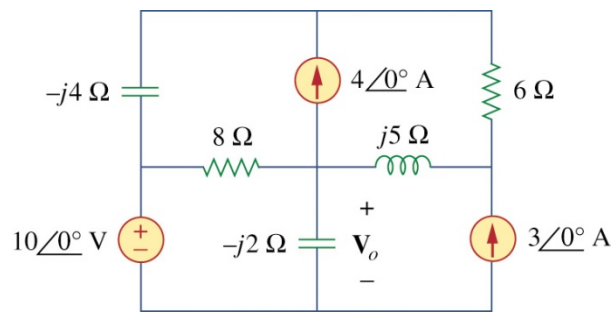


Figure 1 Circuit for Problem (P.1)

(P.2) [25 pts.] Find current  $i$  in the circuit in Figure 2 by drawing the schematic diagram using OrCAD Capture and performing PSpice analysis. Please submit the following:

- (a) Your answer,  $i(t)$ .
- (b) A printout of the schematic diagram from OrCAD Capture.
- (c) A copy of the “xxx.net” network description file (where “xxx” is your project name) from your project’s “xxx-PSpiceFiles” subdirectory.

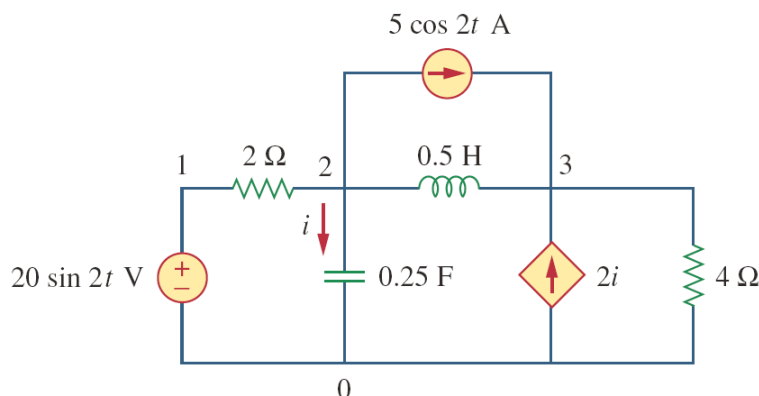


Figure 2 Circuit for Problem (P.2)