Name:

|  |  |  |
| --- | --- | --- |
| Problem | Points | Score |
| 1 | 40 |  |
| 2 | 20 |  |
| 3 | 40 |  |
| Total | 100 |  |

Notes:

1. The exam is closed books and notes except for one double-sided sheet of notes. You are allowed the use of a calculator or MATLAB on this exam, but only to do complex number calculations.
2. Please indicate clearly your answer to the problem. Circle your answers.
3. The details of your solutions are more important than the answers. Please explain your solutions clearly and include as many details as possible.

**1.**  Determine the current through the inductor, iL(t), as a function of time (derive an equation). Sketch your result for t = [-1.0, 10] and label as much of the plot as possible (e.g,, time constant, initial value, final value). (Hint: Write the form of the response and solve for the constants.)



**2.**Find the equivalent input impedance assuming a frequency of 60 Hz.



3. Find Vx (Hint: Use Norton’s Theorem to convert the current source to a voltage source).

