EE223 Test III: Student Objectives Review Sheet

I. **Phasor analysis**: Given a circuit that has any number of current or voltage sources, all of a single frequency, and any number of capacitors, resistors, and inductors, find any i(t) or v(t).
   A. Examples: HW 24, CP 24, CP 25, HW 25, HW 26
   B. I may tell you which method to use, or you may be given a choice of using simplification, source transforms, mesh analysis, or nodal analysis methods. If you choose, some methods will be much harder than others. If I tell you which method to use, I will give you an easy method, but you will get no credit if you solve it using a different method.
   C. You will only get full credit for time-domain answers. Phasor answers will not receive full credit.

II. **Phasors with multiple frequencies**: Given a circuit with at least two sources of different frequencies (one of which may be 0 rads/second = DC) find any i(t) or v(t).
   A. Examples: HW 27 P1 for combining different frequencies, HW 24-26 and CP 25 for solving after superposition
   B. You will need to use superposition
   C. Do not add the superposition phasors; first convert them back into the time domain and then add them
   D. You will only get full credit for time-domain answers. Phasor answers will not receive full credit.

III. **Norton and Thevenin equivalents**: Given a circuit that has any number of current or voltage sources, all of a single frequency, and any number of capacitors, resistors, and inductors, find its Norton or Thevenin equivalent.
   Tweaks: it may have a dependent source; if so you'll need to use V_{OC}, I_{SC} method.
   A. Examples: CP 27, HW 28

Note: Do not expect whole-digit numbers in answers, either in this practice test or in the test itself.

Test Questions

1. I about 33%
2. II about 33%
3. III about 33%

You may bring

- one 3x5 card, both sides, if it is your own work (not photocopied from another cadet)
- calculator