

ECE2311 Homework Assignment Number 6

Due by 10:50am on 28-Apr-2010

Try to do some of these problems each day; don't wait until the last minute. Be sure your name and ECE box appear legibly on the front page. Show all work, and keep your work neat and organized. Whenever appropriate, use *words* to explain what you are doing, not just mathematical symbols. Be sure to justify your answers so the grader can be confident that you aren't just guessing.

1. 2 points. Compute the Laplace transform and region of convergence of $x(t) = e^{-a|t|}$ where $a > 0$ is a strictly positive real number. Explain whether you should use the bilateral or unilateral Laplace transform here.
2. 4 points. Lathi 4.1-1 (a) and (d). Explain whether you should use the bilateral or unilateral Laplace transform for each of these problems.
3. 4 points. Lathi 4.1-3 (a) and (c).
4. 3 points. Lathi 4.2-9.
5. 3 points. Lathi 4.4-1.
6. 3 points. Lathi 4.4-3. Also discuss this stability properties of this system.