

Last update: Tue Apr 17 09:43:44 MDT 2007 /m333.sp07/handouts333/t3\_333\_420/review\_suggestions\_3.tex

1 This list is not in final form.

2 Test #3 is

Friday  
4/20/07.

3 The test will emphasize the material of Assignments #12 – #15. The test will mostly be concerned with Laplace transforms, but may have a bit of RREF-ology.

4 No calculator allowed.

5 Things to know about Laplace transforms:

(a) The improper-integral definition of the Laplace transform.

(b) The two tables Laplace-transform “facts” in Diary3 between 3/19 and 3/20.

(c) Transforming a linear differential equation with constant coefficients.

(d) Isolating the Laplace transform of the solution and finding its inverse transform.

(e) Partial-fractions decompositions.

(f)  $\mathcal{L}(\text{Step}(t, B)f(t))$

(g)  $\mathcal{L}^{-1}(e^{-As}\mathcal{L}(f))$  Corrected Fri Apr 20 11:08:50 MDT 2007

(h) The Laplace transform of a function which, though periodic, is not very conveniently periodic: a sawtooth rather than a sine.

(i) The **convolution** formula.

(j) **Dirac’s  $\delta$  function** as a driving function.

(k)

(l)

6 Matrix things to know:

(a) Matrifying a system of linear equations. That is, how to write the **augmented matrix** of a system.

(b) Use of the three **elementary operations** to put an augmented matrix into **RREF**.

- (c) RREF interpretation in case
  - (i) the system has only one solution
  - (ii) the system has no solutions at all
  - (iii) the system has many solutions (produce a vector formula for these solutions)
- (d)
- (e)