

MA 341 REVIEW SHEET FOR TEST 3

- **7.6 Transforms of Discontinuous Functions (If not already covered by Test 2)**
 - Know the definition of the unit step function p. 384
 - Express a function using unit step functions and be able to compute its Laplace Transform ex: p390 # 5,7,11,13,15,19, 21,23,29,33 & [Unit Step Functions WS](#)
 - [Inverse Laplace practice with Unit Step Functions](#)
- **9.3 Review: Matrices and Algebra**
 - Know basic matrix operations (addition, multiplication, finding [inverses](#) of 2x2s and 3x3s, finding determinants of 2x2s and 3x3s)
 - Understand what it means for a matrix to be a solution to a matrix differential equation
 - ex. p. 513 #1,4, 9,11,13,17,21,25,37
- **9.4 Linear Systems in Normal Form**
 - Write systems of equations in matrix form
 - ex. p. 521 #1-11 odd
- **9.5 Homogeneous Linear Systems with Constant Coefficients**
 - Given a matrix find its eigenvalues and eigenvectors
 - Find the general solution
 - Examples p. 531-532 # 1,5,16,31,34
 - Look at [9.5 Worksheet](#)
- **9.6 Complex Eigenvalues**
 - Know the form of the general solution if we have complex eigenvalues
 - Examples p. 537 # 1,3,13
 - Look at [9.6 Worksheet](#)
- **9.7 Nonhomogeneous Linear Systems**
 - Know the method of [Variation of Parameters](#)
 - Know the method [of Undetermined Coefficients](#)
 - Examples p.542-543 # 1,3,7,11,13,15,21a
- **5.1/5.2 More practice solving systems of equations**
 - Be able to set up an interconnected tank problem
 - Examples p. 250 #31 and p. 544 #34
 - Look at [Mixing Problems with Interconnected Tanks Worksheet](#)