Math 341, Jeffrey Adams
Review Test II, May 9, 2011

1. Chapter 12: Systems
   (a) Vector field, autonomous systems
   (b) Second order equations
   (c) Phase space, phase portrait
   (d) Linear systems: elimination method
   (e) Applications
2. Chapter 13: Matrix Methods
   (a) Eigenvalues and Eigenvectors
   (b) Matrix exponentials
   (c) Computing e^{tA}
   (d) Cayley Hamilton Theorem
   (e) Linearly independent solutions
   (f) Nonhomogenous equations: integrating factors
   (g) Nonhomogenous equations: variation of paramters
   (h) Equilibrium and stability
3. Series Solutions (Boyce and DePrimar Chapter 5)
   (a) Series Solutions of second order linear equations
   (b) Series solution near an ordinary point
   (c) Euler equation
   (d) Indicial equation, roots
   (e) Regular Singularities