Math 4326 **LINEAR ALGEBRA** Spring 2008
Dr. Duval **Homework**
Thursday, February 28

Follow the separate general guidelines for Parts A,B,C. Be sure to include and label *all four* standard parts (a), (b), (c), (d) of Part A in what you hand in.

Invariant Subspaces

pp. 76–79

A: Reading questions. Due by 2pm, Mon., 10 Mar.

1. Why are invariant subspaces important?
2. How is equation 5.3, which defines eigenvalues and eigenvectors, connected with one-dimensional invariant subspaces?
3. Does the choice of $\mathbf{F}$ affect the eigenvalues and eigenvectors of a linear transformation? If so, give an example; if not, explain why not.
4. Fill in the missing details of how we get from equation 5.8 to the next (unnumbered) displayed equation,

$$\lambda_k v_k = a_1\lambda_1 v_1 + \cdots + a_{k-1}\lambda_{k-1}v_{k-1}.$$

B: Warmup exercises. For you to present in class. Due by end of class Tue., 11 Mar.

Ch. 5: Exercises 1, 5, 6.