

Monday, April 27

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.

Characteristic and Minimal Polynomials (Part II)

Section 8.C, pp. 264–267

A: Reading questions. Due by 2pm, Sun., 3 May

1. Is there any relation between the minimal polynomial and the characteristic polynomial?
2. What, if anything, does result 8.49 say about the multiplicity of each root of the minimal polynomial?
3. Show the details of the “simple computation” at the end of Example 8.50 that $(T - 6I)(T - 7I) \neq 0$.
4. Show the details of the “simple computation” at the end of Example 8.51 that $(T - 6I)(T - 7I) = 0$.

B: Warmup exercises. For you to present in class. Due by the end of class Mon., 4 May

Exercises 8.C: 1, 5.

Jordan Form

Section 8.D

A: Reading questions. Due by 2pm, Tue., 5 May

1. In Example 8.53, explicitly find the vectors N^3v , N^2v , and Nv . Use these to explicitly verify that the matrix of N with respect to the basis N^3v, N^2v, Nv, v is the one given in the example.
2. In Example 8.54, explicitly find the vectors N^2v_1, Nv_2 . Use these to explicitly verify that the matrix of N with respect to the basis $N^2v_1, Nv_1, v_1, N^2v, Nv_2, v_2, v_3$ is the one given in the example.
3. The linear operator T described in Examples 8.25 and 8.30 earlier in the chapter is *almost* put into Jordan Form in Example 8.30. Explain why this is *not* Jordan Form, and find the basis that will put it into Jordan Form. I think you should be able to do this only by following the proof of result 8.60 (Jordan Form) and the *statement* of result 8.55.
4. What will you do with all the time you have, now that there are no more reading questions to answer?

B: Warmup exercises. For you to present in class. Due by end of class Wed., 6 May

Exercises 8.D: 1, 2.