

Thursday, April 24

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.

The Characteristic Polynomial (part II)

pp. 171–173

A: Reading questions. Due by 2pm, Mon., 28 Apr.

1. Verify, using the **definition** of multiplicity, the following claim made on p. 171, of the linear operator T defined in equation 8.16: “0 is an eigenvalue of T with multiplicity 2 [and] that 5 is an eigenvalue of T with multiplicity 1”.
2. Where does the proof of Proposition 8.18 use the assumption that V is a **complex** vector space?
3. Fill in the missing details of the claim in the middle of p. 172, that the characteristic polynomial of the operator defined by equation 8.16 equals $z^2(z - 5)$.
4. Verify, directly, that the operator T defined in equation 8.16 satisfies the Cayley-Hamilton theorem. [Hint: This is easier to verify by first converting T to a matrix.]
5. 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 Tue., 29 Apr.

Ch. 8: Exercise 14.