To prepare:
A. a 15-minute talk on the critical current in a superconducting wire, filling in background and details missing from Tinkham’s §2.4;
B. another on superconducting microwave cavities based on §2.5.2.

To turn in:
1. Verify the following equations from Tinkham’s discussion of demagnetizing factors and critical fields: (2.4)–(2.5a) for the thin film ($d \ll \lambda$) and (2.18) and (2.19) for the sphere.
2. Ashcroft and Mermin problem 34.4.