

## **HOMEWORK 2**

**Due:** Tuesday, February 14

**Problems:** Self- and Mutual Inductance; Energy of Magnetic Field

7.22, 7.27, and 7.30

### **Problem 2**

The electric current  $I$  flows inside an infinite cylinder of radius  $R$ . The current is uniformly distributed over the cylinder volume. Find the energy of magnetic field inside this cylinder per unit of cylinder length.