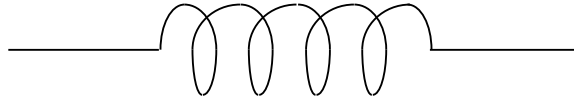PHY 232 Summer 2016 Class Work

Class 34. Inductance

Consider a 500 turns solenoid, 5cm in length and has a circular cross section of 1cm in radius.

(a) Calculate the inductance of this coil.

(b) If a constant current of 10A is passing through the solenoid, what is the emf across the solenoid?

(c) What is the energy stored in the solenoid?

(d) If the 10A current diminishes to 0A in 0.1s, what is the average emf across the solenoid during this period of time?