

Group Problem: Solenoid

Calculate the self-inductance L of a solenoid (n turns per meter, length ℓ , radius R)

REMEMBER

1. Assume a current I is flowing in your device
2. Calculate the B field due to that I
3. Calculate the flux due to that B field
4. Calculate the self inductance (divide out I)

$$L = \Phi_{\text{Self, total}} / I$$