

ET332a

Inductance Calculation

Part 1

A coil for a circuit must have an inductance of 100 mH. The coil form that it will be wound on has a cross sectional area of 0.022 m^2 and a length of 20 cm. The inductor will have an air core. How many turn of wire are required to create this inductance?

Part 2

Determine the number of turns required to achieve the 100 mH inductance if the air core is replaced by an iron that has a relative permeability of 1570.