

6-7)

An inductor has a resistance of 63 Ohms. When a sinusoidal AC emf of 120 Hz is applied, the voltage drop across the ends of the inductor leads the current through the inductor by 67° . What is the inductance?

HINT: the inductor itself also has resistance because it is made of real wire. In such a case, you should consider it to be a pure resistance and a pure inductance in series with each other.

HINT: when dealing with an LRC circuit that is missing one of the components, just ignore those terms in the formulas.