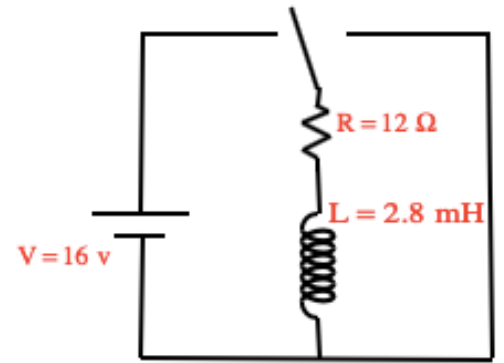RL circuit in DC setting:

A 12 Ω resistor is in series with a 2.8 mH inductor whose internal resistance is negligible. The two are in a circuit that has a switch that can connect the two to a 16 volt battery, or can be toggled so as to connect the two to themselves alone.

R = 12 Ω

L = 2.8 mH

V = 16 v

a.) At t = 0, the switch is toggled to the left connecting the resistor and inductor to the power supply. What is the initial current in the circuit?

b.) After a long period of time, what is the current in the circuit?

c.) What is the circuit's time constant?

d.) What does the time constant tell you?

After a long period of time, the switch is toggled to the right.

e.) What will the current in the circuit do as time proceeds?