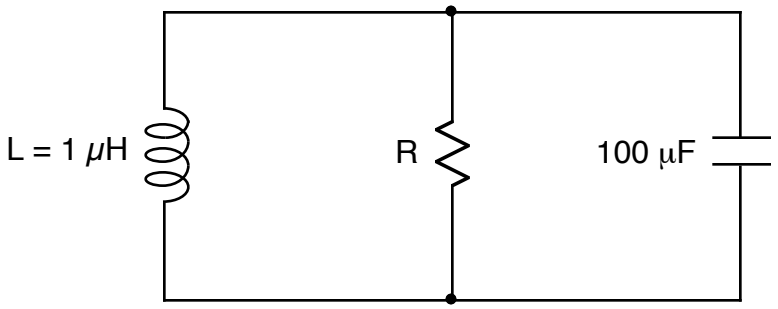
HOMEWORK #1

1.

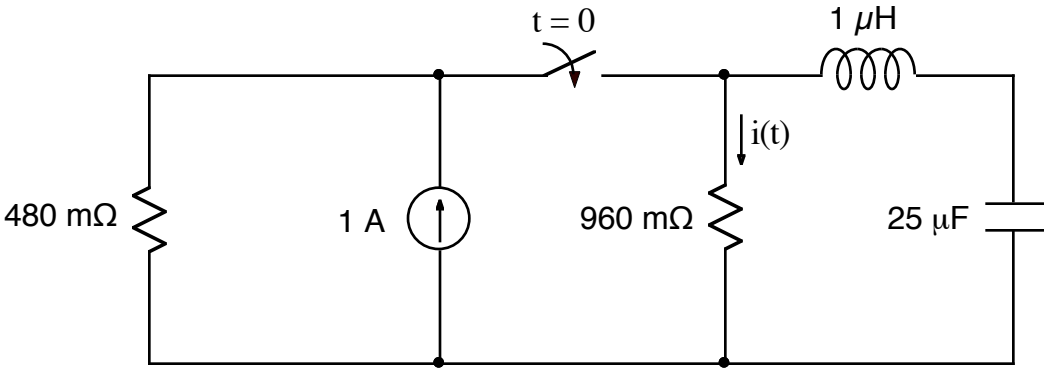


a) If R = 40 mΩ, find the characteristic roots, s_1 and s_2, for the above circuit.

b) If R = 40 mΩ, find the value of L that makes the circuit critically damped.

c) If L = 1 μH, find the damping frequency, ω_d, for the value of R that gives a damping frequency of α = 10 krad/s.

2.



After being open for a long time, the switch closes at $t = 0$.

Find $i(t)$ for $t > 0$.