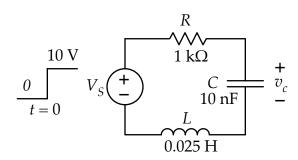
Name_____

In the *RLC* circuit shown at right, the source voltage changes abruptly from $V_s = 0$ V to $V_s = 10$ V at t = 0. Determine expressions for the current, and the capacitor, inductor, and resistor voltages for t > 0.

Then change the resistor value to 3.5 $k\Omega$ and determine the current and voltages again. (Note: You do not need to derive everything from scratch. You will need to determine if the circuit is over-damped or underdamped, as well as the appropriate initial and final values.)



For $R = 1 \text{ k}\Omega$:

$$v_c(t) =$$

$$i(t) =$$

$$v_L(t) =$$

$$v_R(t) =$$

For $R = 3.5 \text{ k}\Omega$:

$$v_c(t) = \underline{\hspace{1cm}}$$

$$v_L(t) = \underline{\hspace{1cm}}$$

$$v_R(t) = \underline{\hspace{1cm}}$$