

## Problem 12

A series circuit has a capacitor of  $10^{-5}$  F, a resistor of  $3 \times 10^2$   $\Omega$ , and an inductor of 0.2 H. The initial charge on the capacitor is  $10^{-6}$  C and there is no initial current. Find the charge  $Q$  on the capacitor at any time  $t$ .