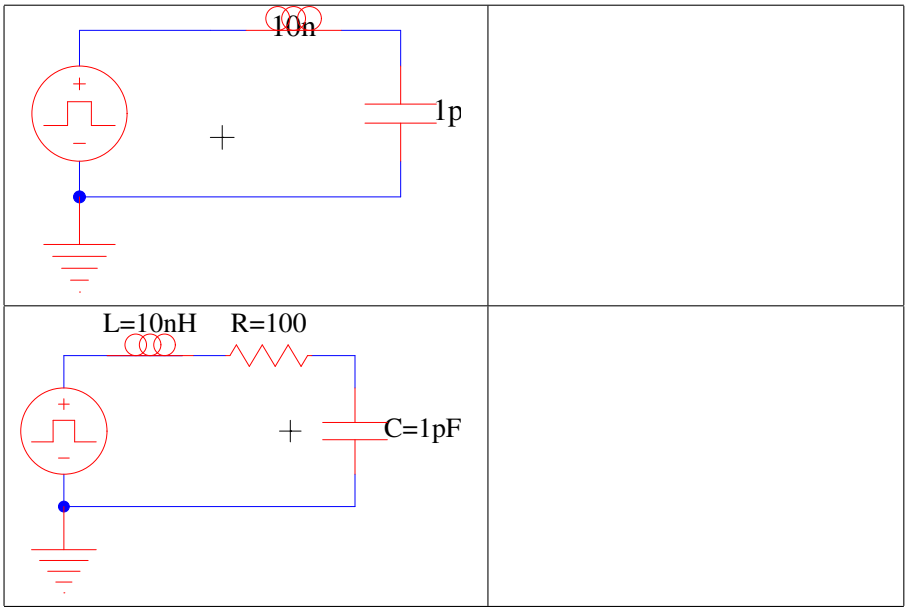
1. What is the step response (voltage on top plate of capacitor)? Draw the general shape.



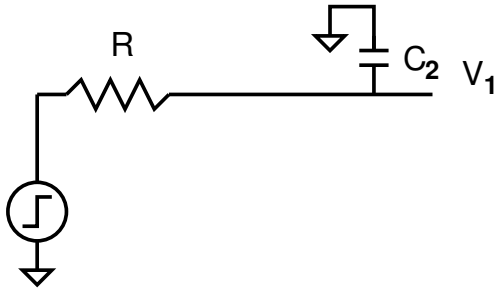
2. The RLC response is given as $V_C = V_S + Be^{\left(-\frac{R}{2L}\right)t}e^{j\left(\sqrt{\frac{1}{LC}-\left(\frac{R}{2L}\right)^2}\right)t}$. For what values of R does this oscillate?

3. Inductance of a PCB Trace over a ground plane: $L \approx l\left(\frac{\mu_0\mu_r h}{w}\right)$

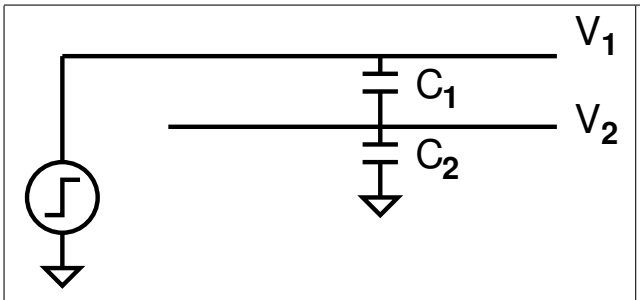
   - Height above ground plane: $h = 3\text{mil}$ (1 mil = 0.001 inches)
   - Width of trace: $w = 5\text{mil}$
   - $\mu_0 \approx 1.26 \times 10^{-6}$ H/m
   - $\mu_r \approx 1.0$

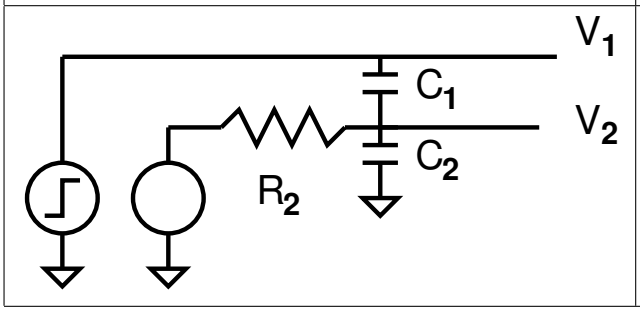
   Per centimeter of PCB trace, how much inductance? [ ]

4. What happens at V_1 when the input switches?

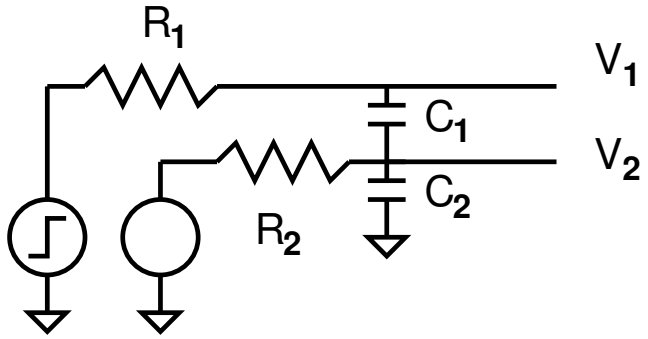


5. What happens to V_2 when V_1 switches?





6. What happens to V_2 when V_1 switches?



$\tau_1 << \tau_2$	
$\tau_1 \approx \tau_2$	
$\tau_1 >> \tau_2$	