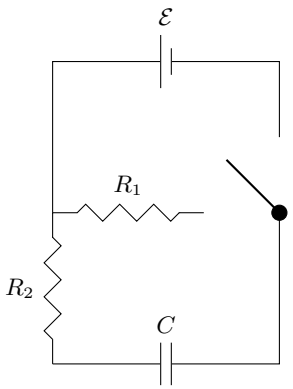
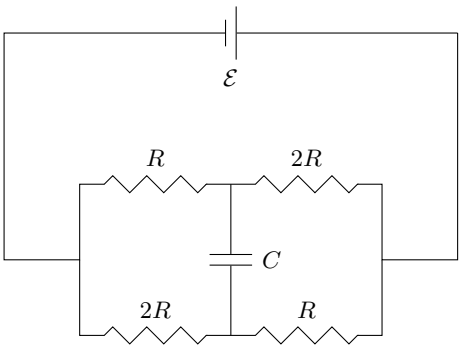
These problem starts, along with a couple released later, will be used for Quiz 2 .

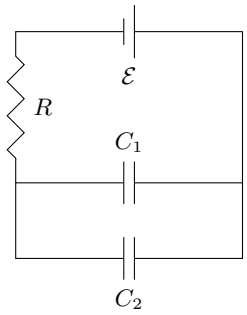
Charge/Discharge
The circuit below has a switch that can be flipped to be either horizontal or vertical.



Strange capacitor
The capacitor in the circuit below starts discharged. After some time, it is fully charged.



Parallel capacitors
The two capacitors below are wired in parallel. *(Your formula sheet intentionally does not have an 'equivalent capacitance' formula. Perhaps you should think of one...)*



General Circuits	**Equivalent Resistance**	**Exponential Decay**
$\Delta V_{\text{loop}} = 0,\ I_{\text{in}} = I_{\text{out}},\ \Delta V_{\text{battery}} = \mathcal{E}$ $\Delta V_{\text{resistor}} = -IR,\ \Delta V_{\text{capacitor}} = Q/C$ $P = \lvert I\Delta V\rvert = (\Delta V)^2/R = I^2R$	$R_{\text{series}} = R_1 + R_2 + \cdots$ $R_{\text{parallel}} = \frac{1}{\frac{1}{R_1}+\frac{1}{R_2}+\cdots}$	$\frac{dy}{dt} = \lambda(y_{\text{eq}} - y)$ $\implies y = (y_0 - y_{\text{eq}})e^{-\lambda t} + y_{\text{eq}}$ $\tau = t_{1/e} = 1/\lambda = RC,\ t_{1/2} = \ln(2)t_{1/e}$