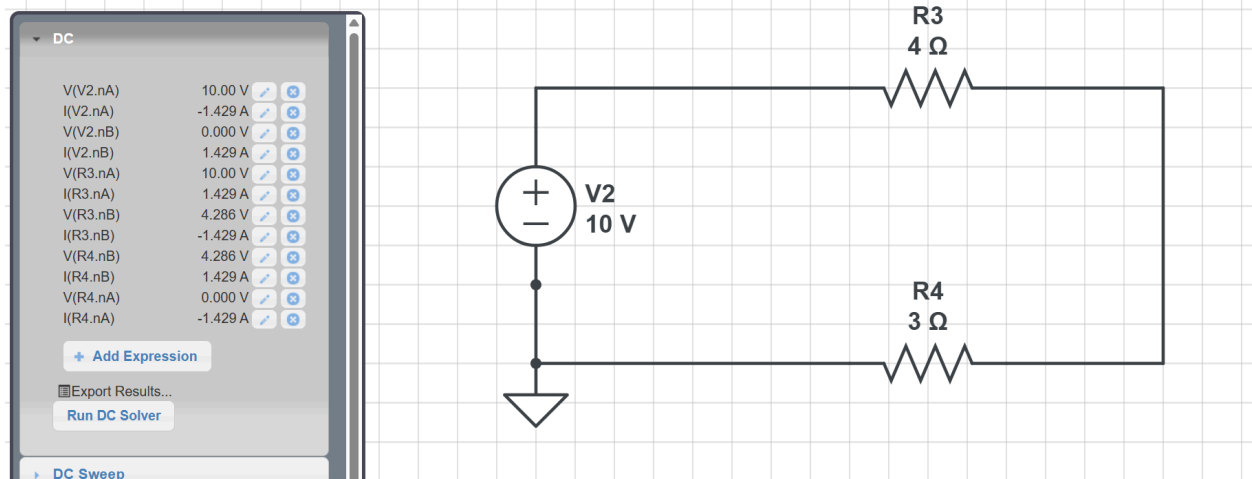
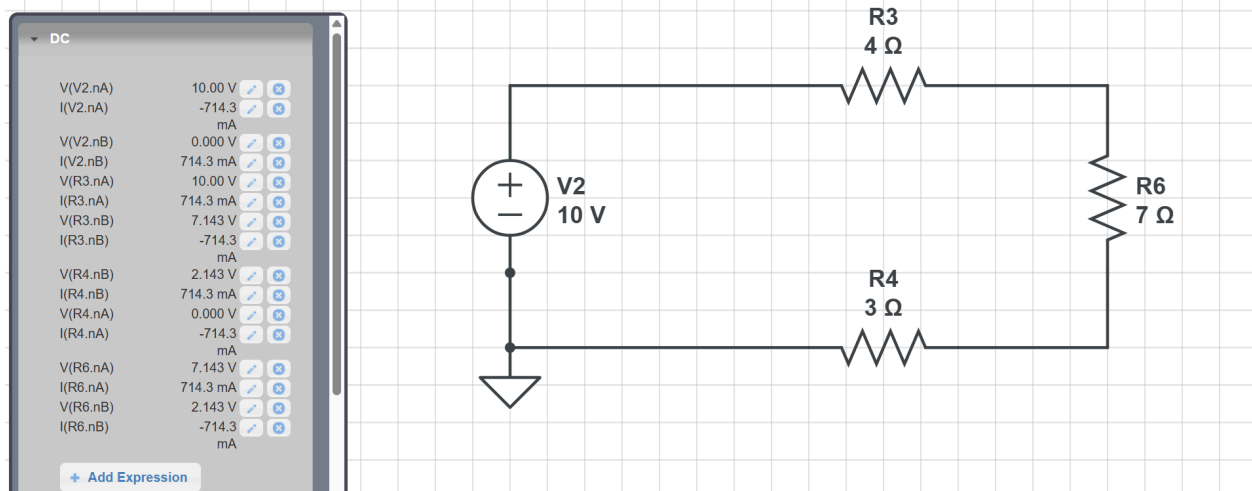


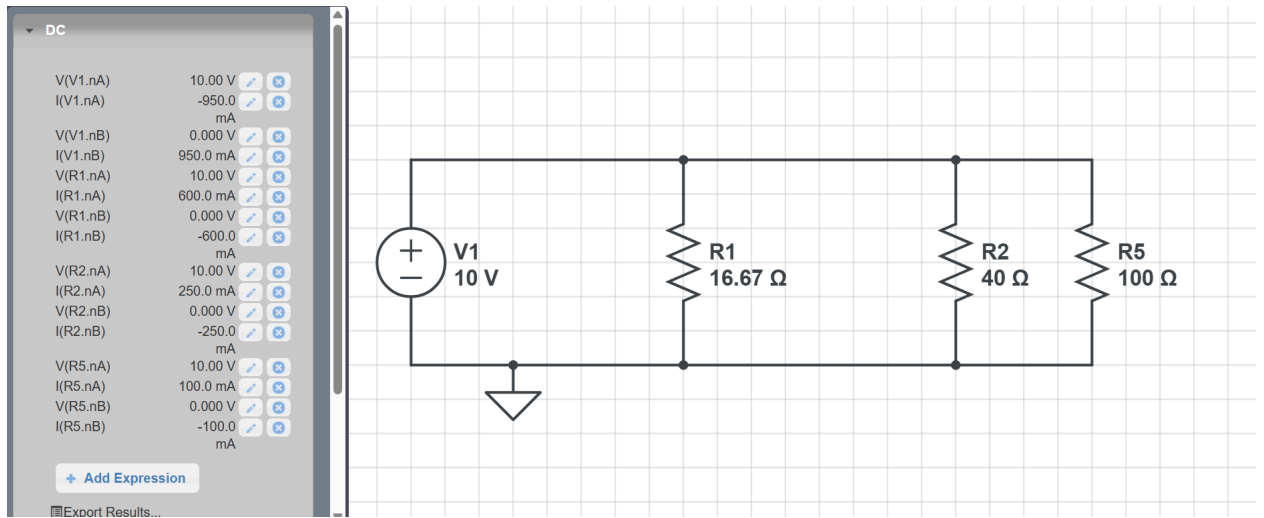
1. Resistor in Series



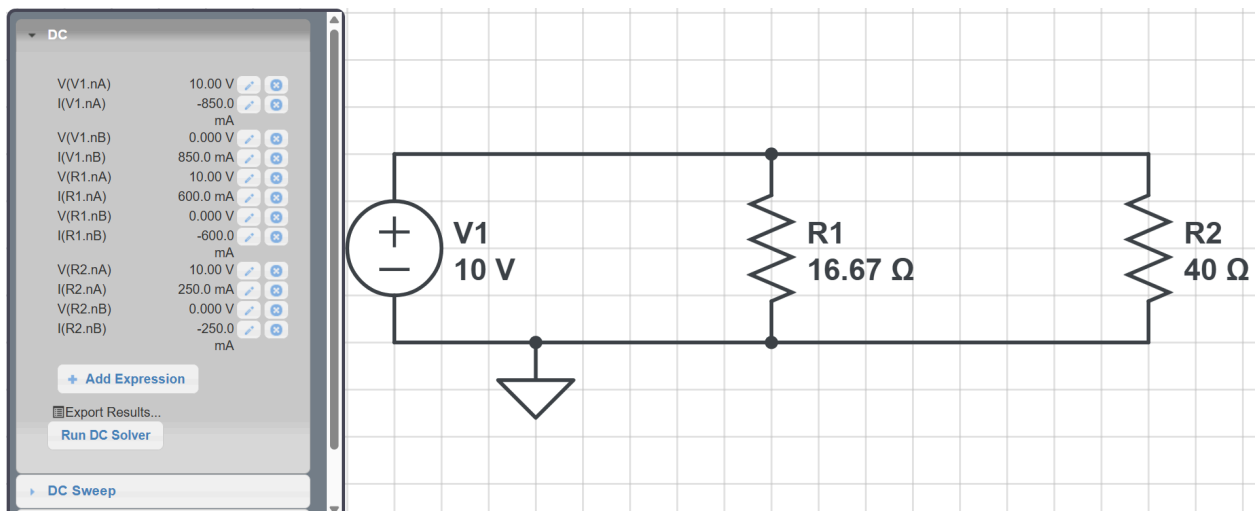
d. Current Draw decreases, and voltage increases across R3, while decreasing along R4.



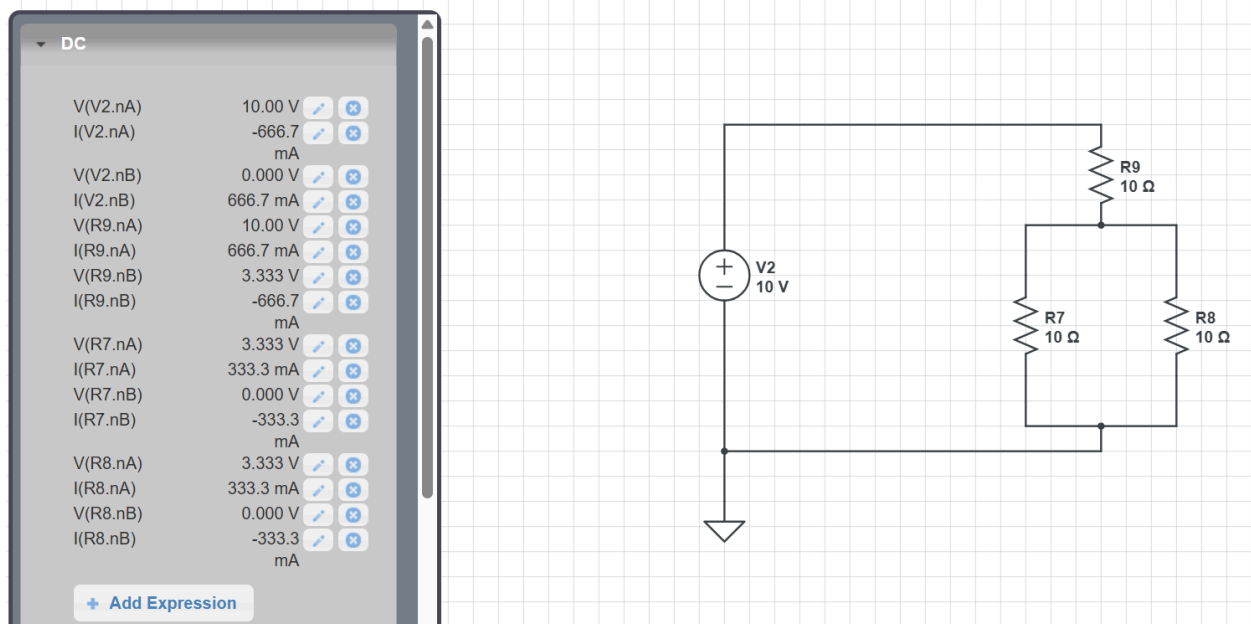
2. Resistors in Parallel



d. Current Draw from the battery increases, voltage across each resistor seems to stay constant with the prior iteration.



3. Resistors in Series and Parallel

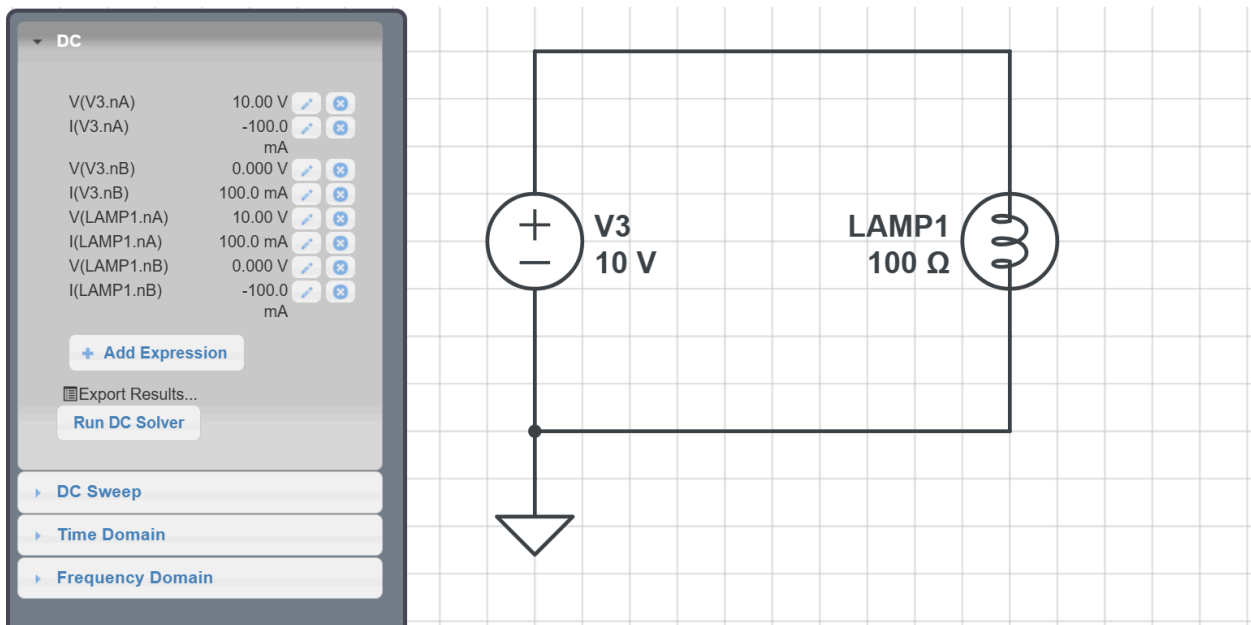


c. R9 eats up the most voltage, R7 and R8 have the same voltage across them. Each resistor has the same amount of current too, with the total current draw being 666.7 mA, $\frac{1}{2}$ of which is across R9, and shared along R7 and R8.

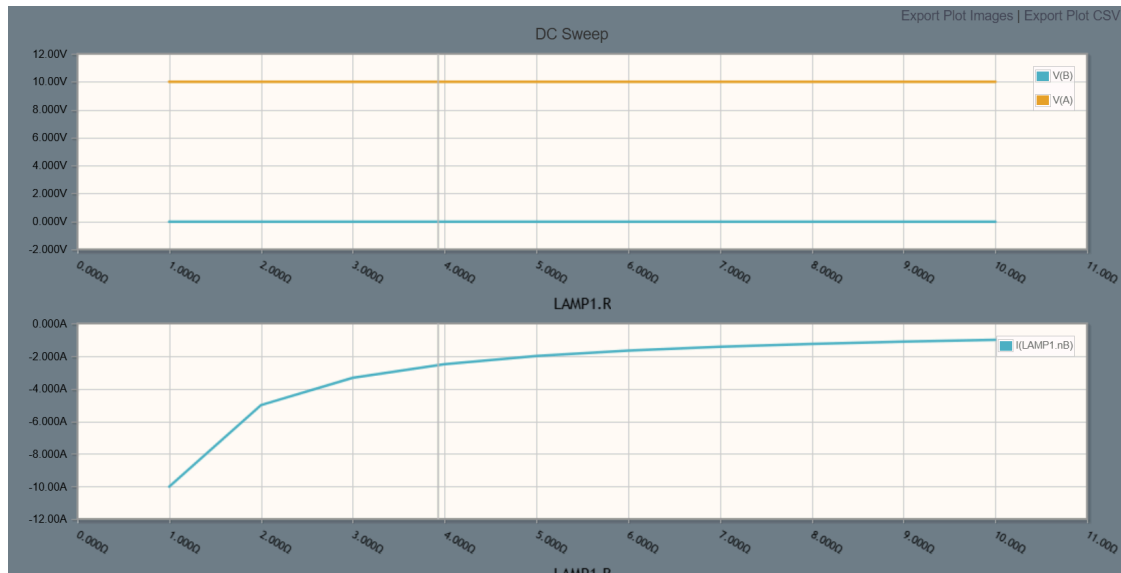
4. Powering Light Bulbs

a. $V = IR \Rightarrow I = V/R$, $P = IV = V^2/R = 10V^2/100\Omega = 1W$

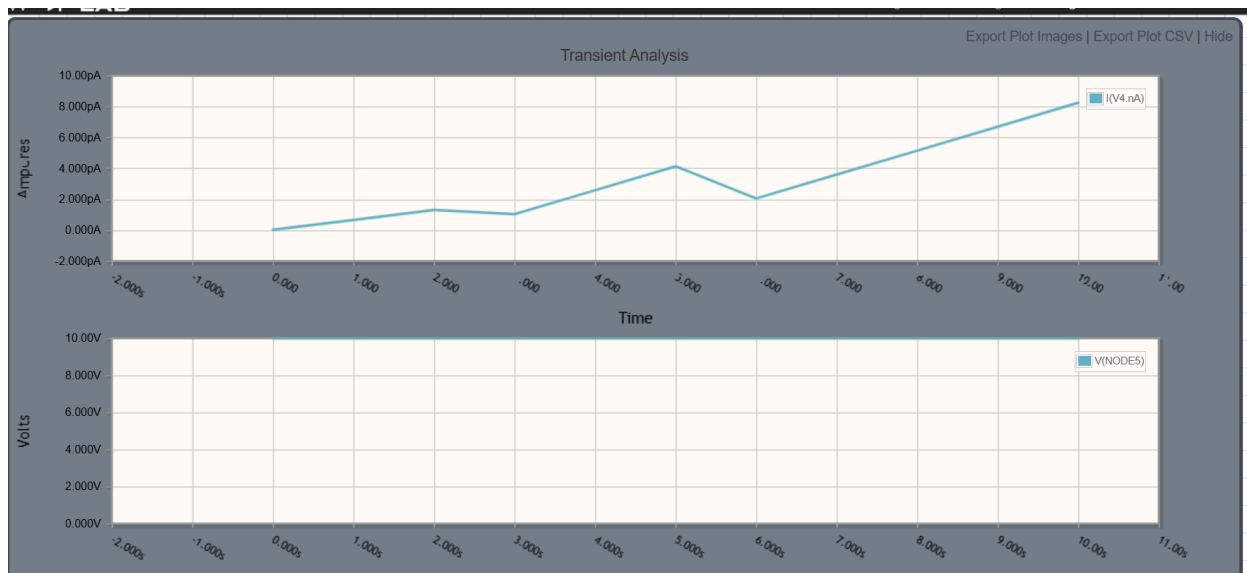
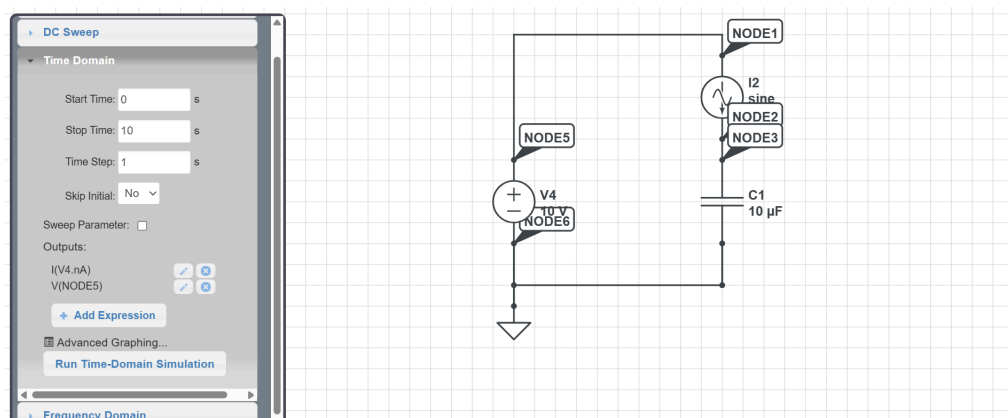
b. Answer checks out.



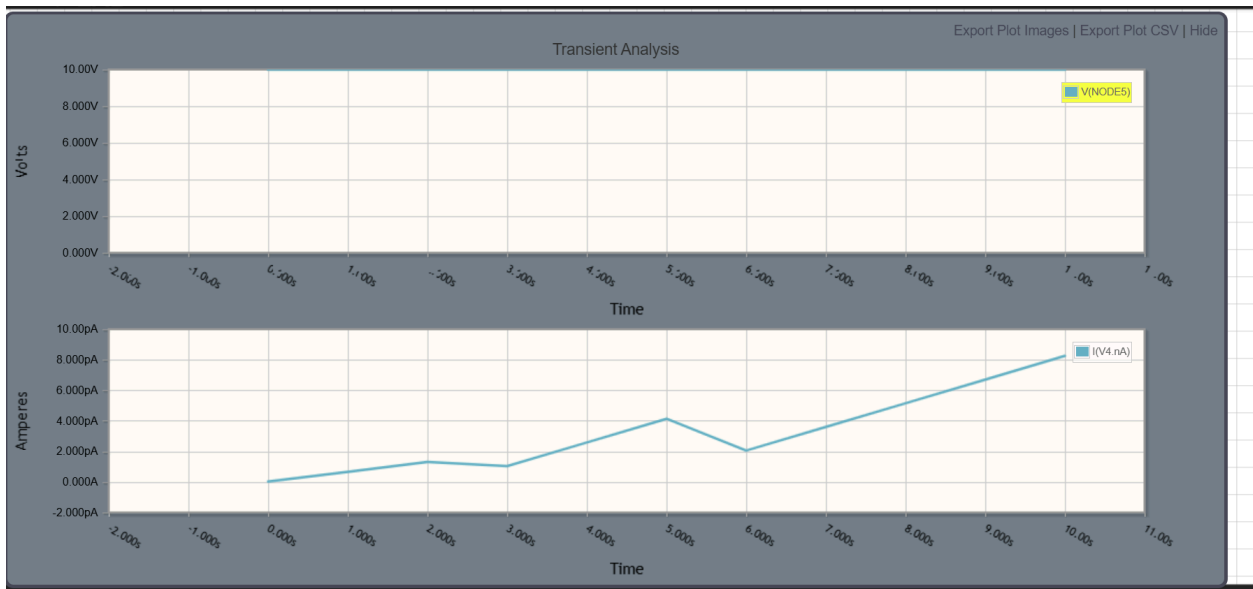
c.



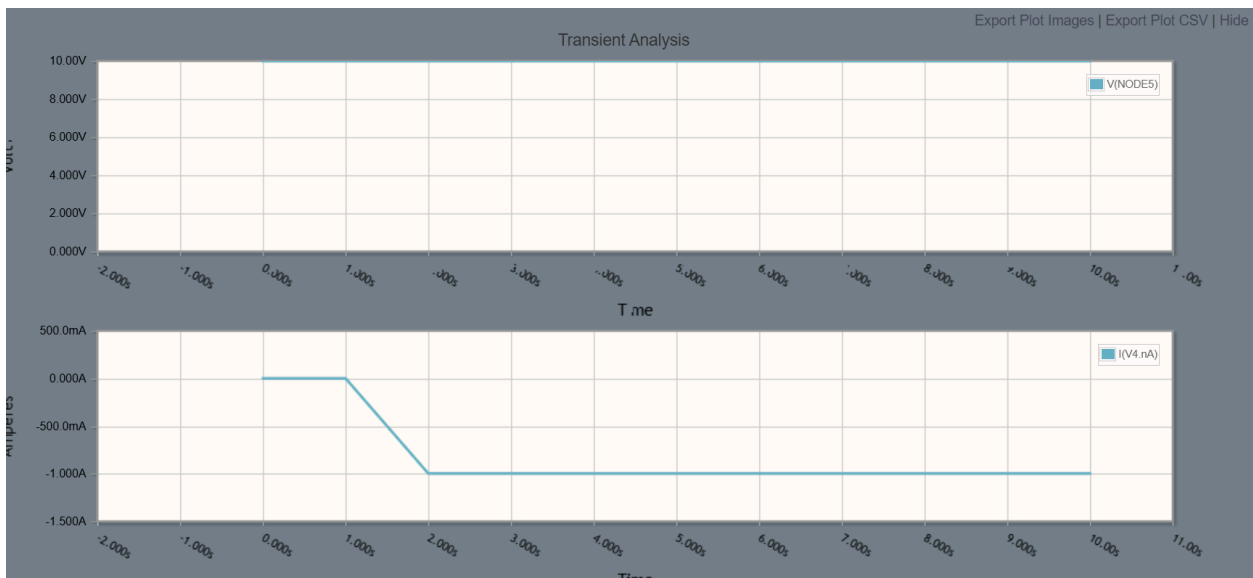
5. Capacitor Circuit



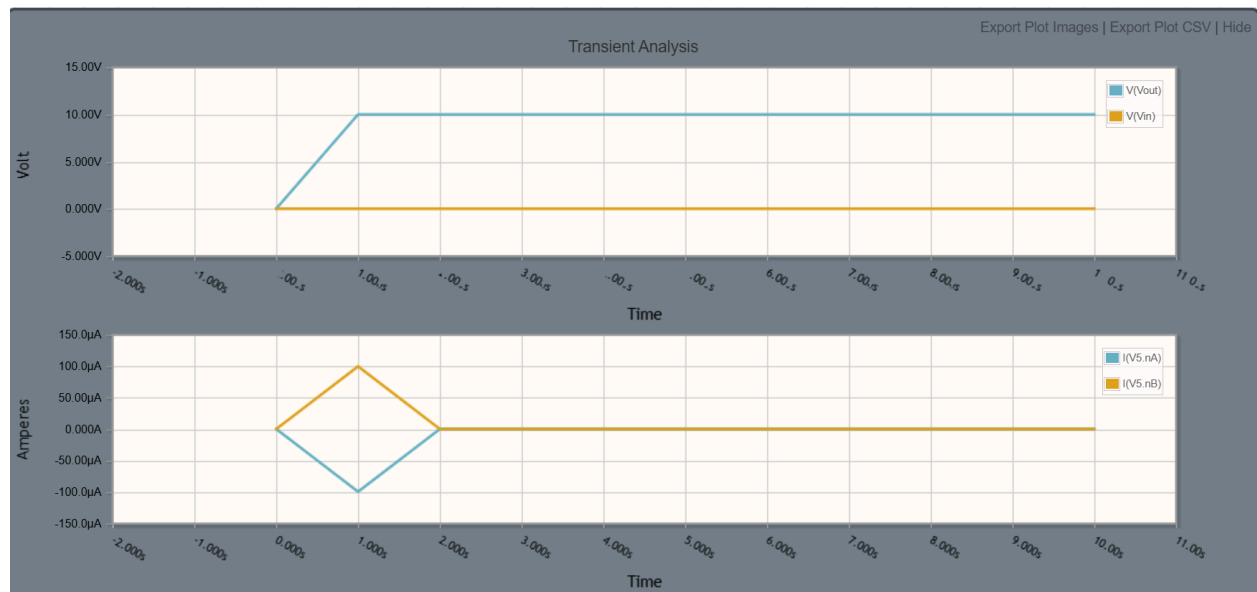
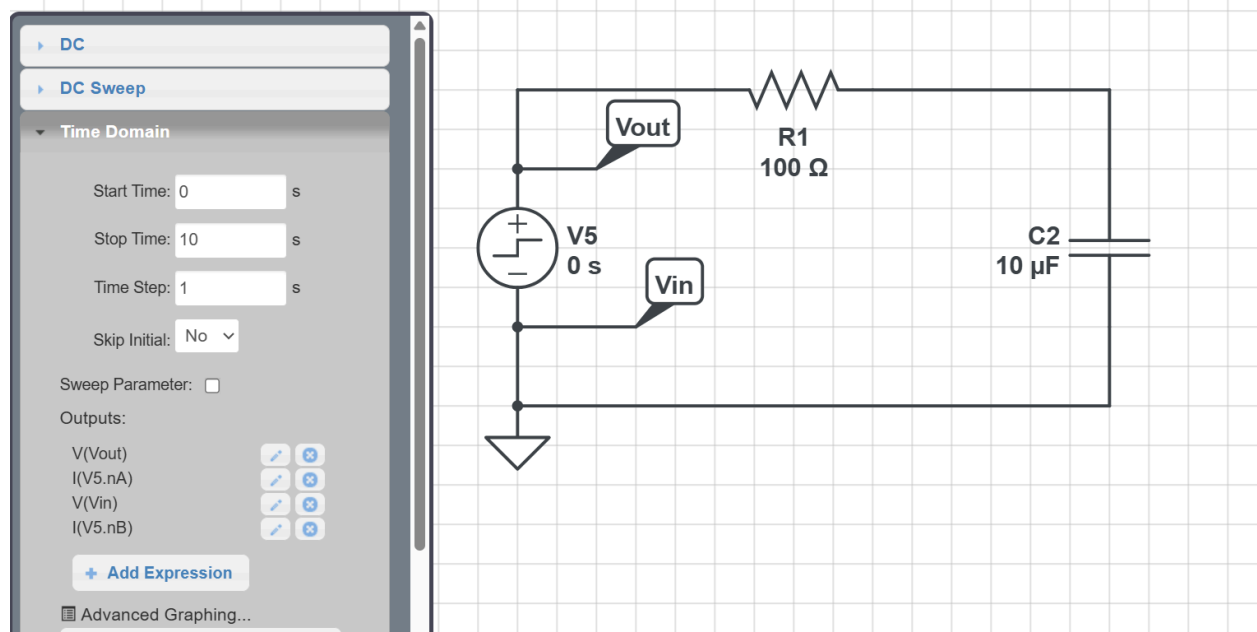
C = 186uF: No Difference



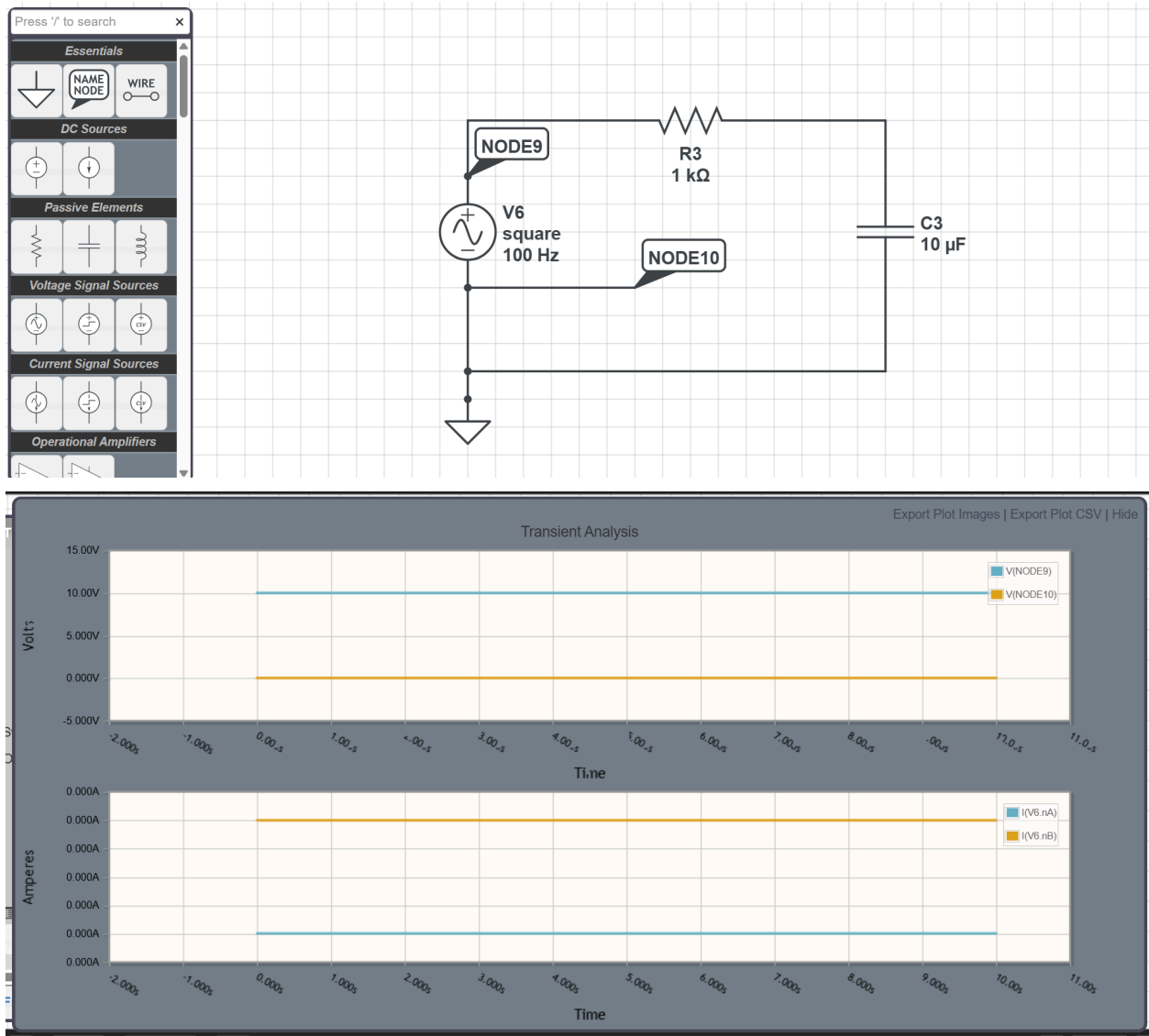
Current Step T = 1s



6. RC Circuit



7. RC Filter



Adjusting the frequency doesn't change anything displayed on the graph.