

Question 1:

The more resistors are added in series, the lower the voltage drop between each resistor. The loop's total voltage and current remain the same.

<https://www.circuitlab.com/circuit/n64t6294kdf9/lab-q1/>

Question 2:

The more resistors added in parallel, the lower the current running between each resistor. Voltage drop and total voltage remain the same.

<https://www.circuitlab.com/circuit/dyx6ye992mgn/lab-q2/>

Question 3:

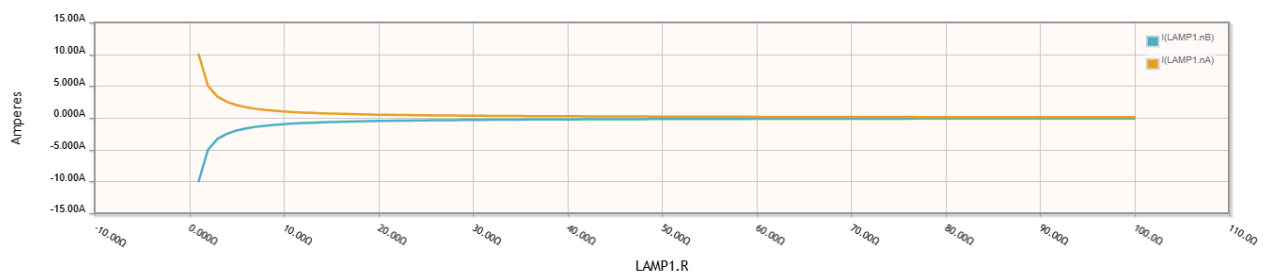
It's a blend of both. Higher voltage drop in the resistor in series. Current splits when resistors in parallel. Total resistance can be written as $1/(1/r + 1/r) + r = r_{total}$.

<https://www.circuitlab.com/circuit/5es27456u6cb/lab-q3/>

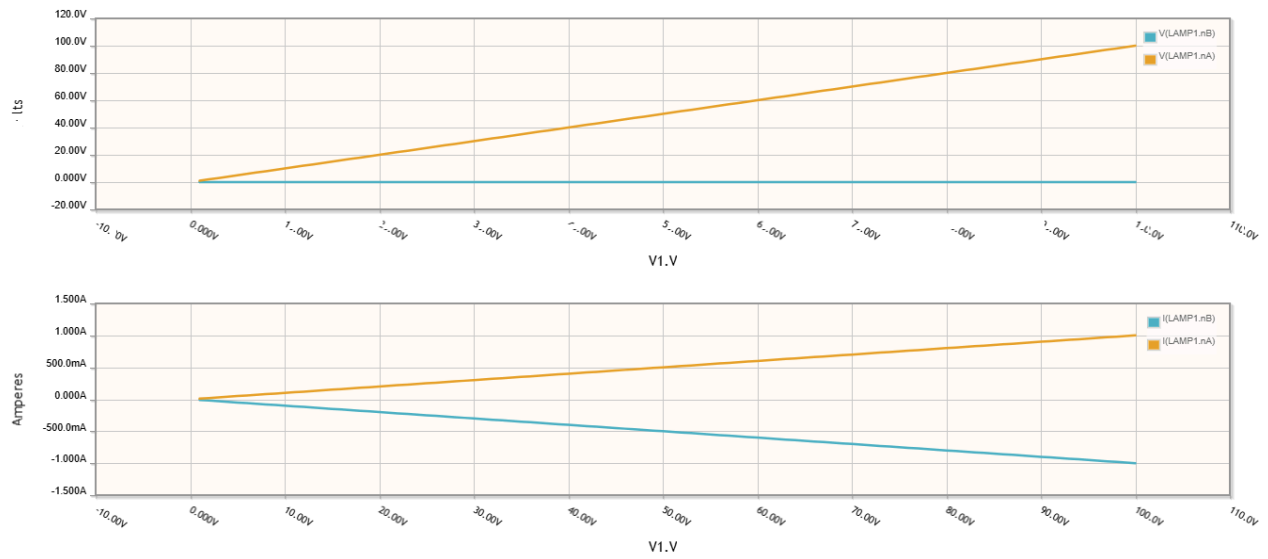
Question 4:

Power is 1 Watt $P = I * V$

DC Sweeps:



Current change as resistance of bulb increased

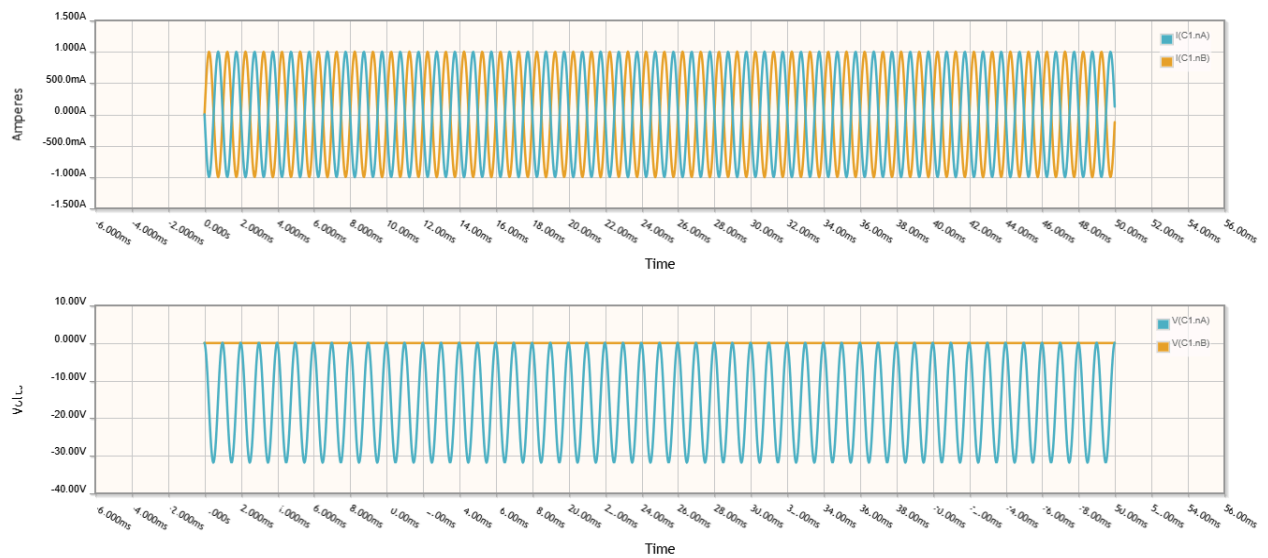


Data as voltage increased

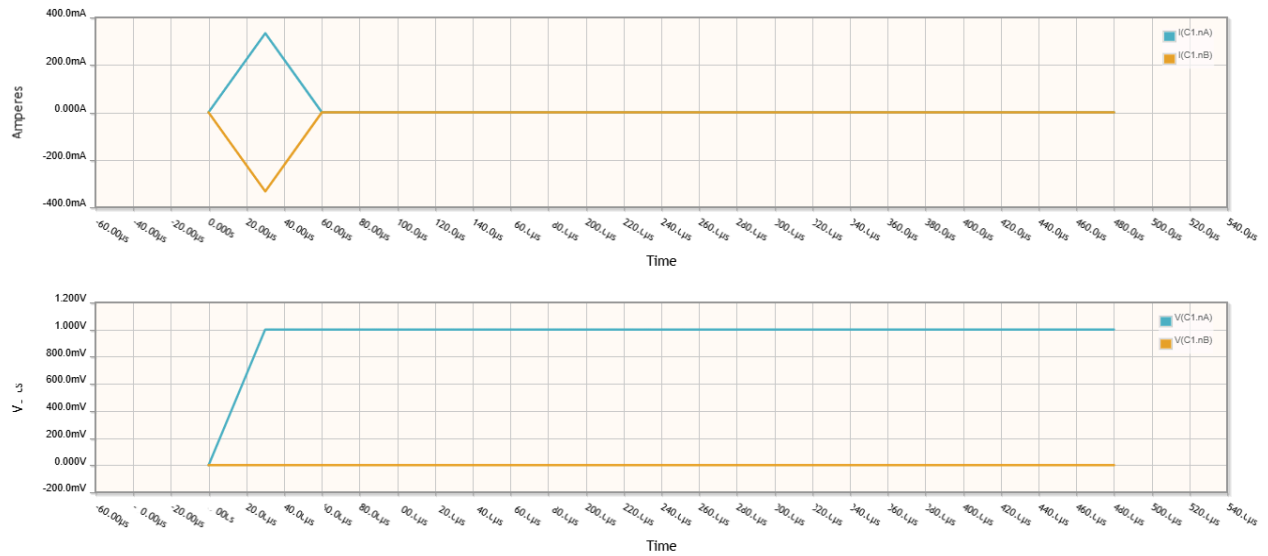
<https://www.circuitlab.com/circuit/wg4e6meeh884/lab-q4/>

Question 5:

Sine:



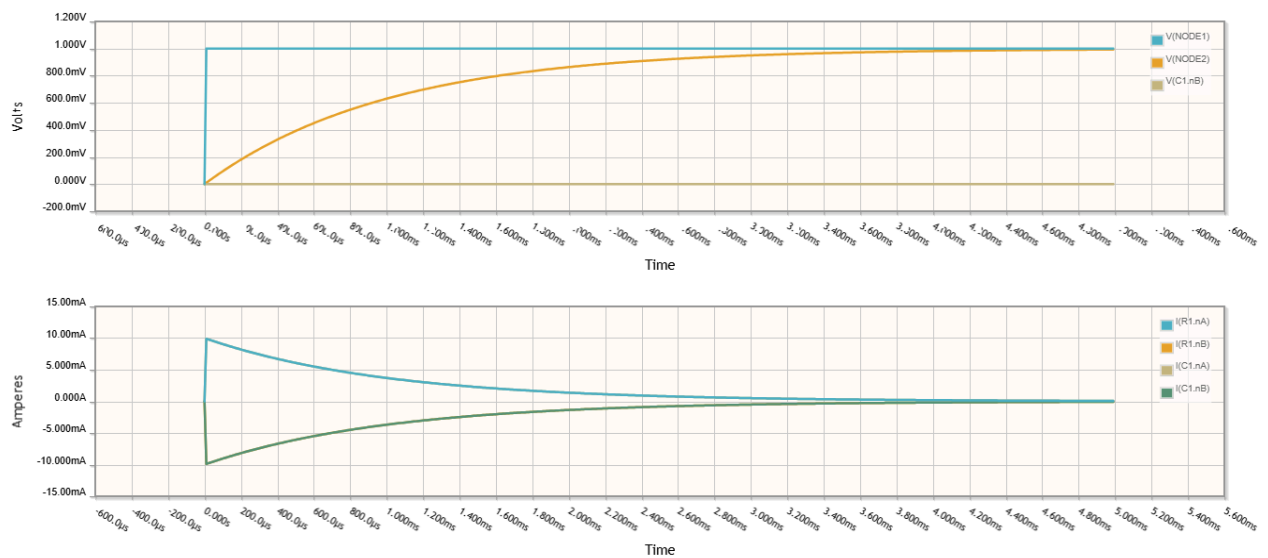
Step:



<https://www.circuitlab.com/circuit/tr59ymnw9ch5/lab-q5/>

Question 6:

Time dependence and domain:



<https://www.circuitlab.com/circuit/s4kd87tm6qnt/lab-q6/>

Question 7:



<https://www.circuitlab.com/circuit/pv2hfm33ph8e/lab-q7/>