

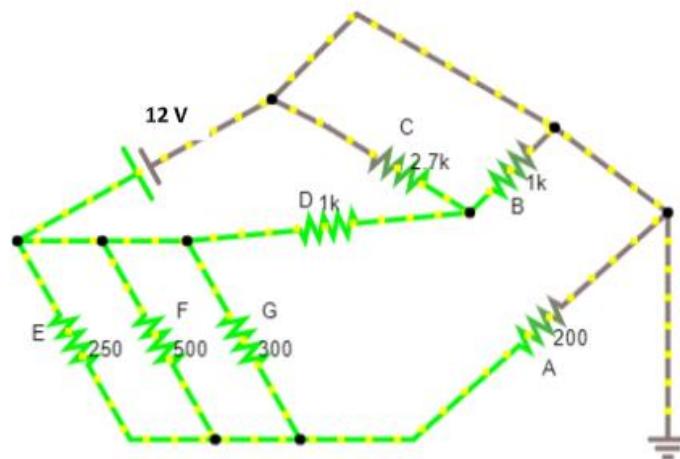
BE LAB ASSIGNMENT # 02

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CLASS ID: 106293.

STUDENT ID: 12113.

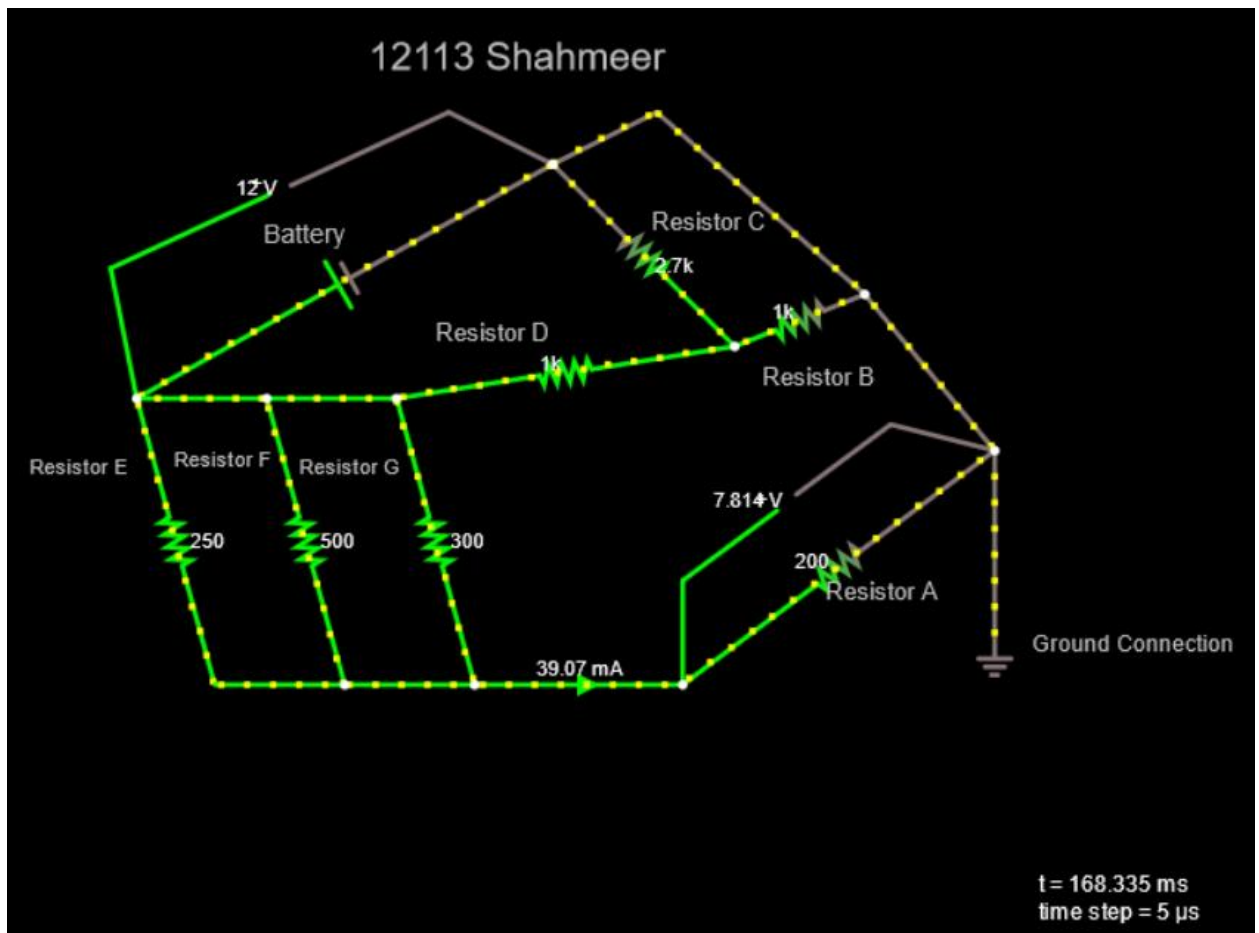
Q # 1 IDENTIFY CIRCUIT, SIMULATE THE FOLLOWING CIRCUIT, INSERT AT LEAST 7 SCREEN SHOTS TO SHOW THE DATA OF EACH COMPONENT & FILL THE TABLE BELOW: (4)



Series-Parallel Circuit

Screenshots:

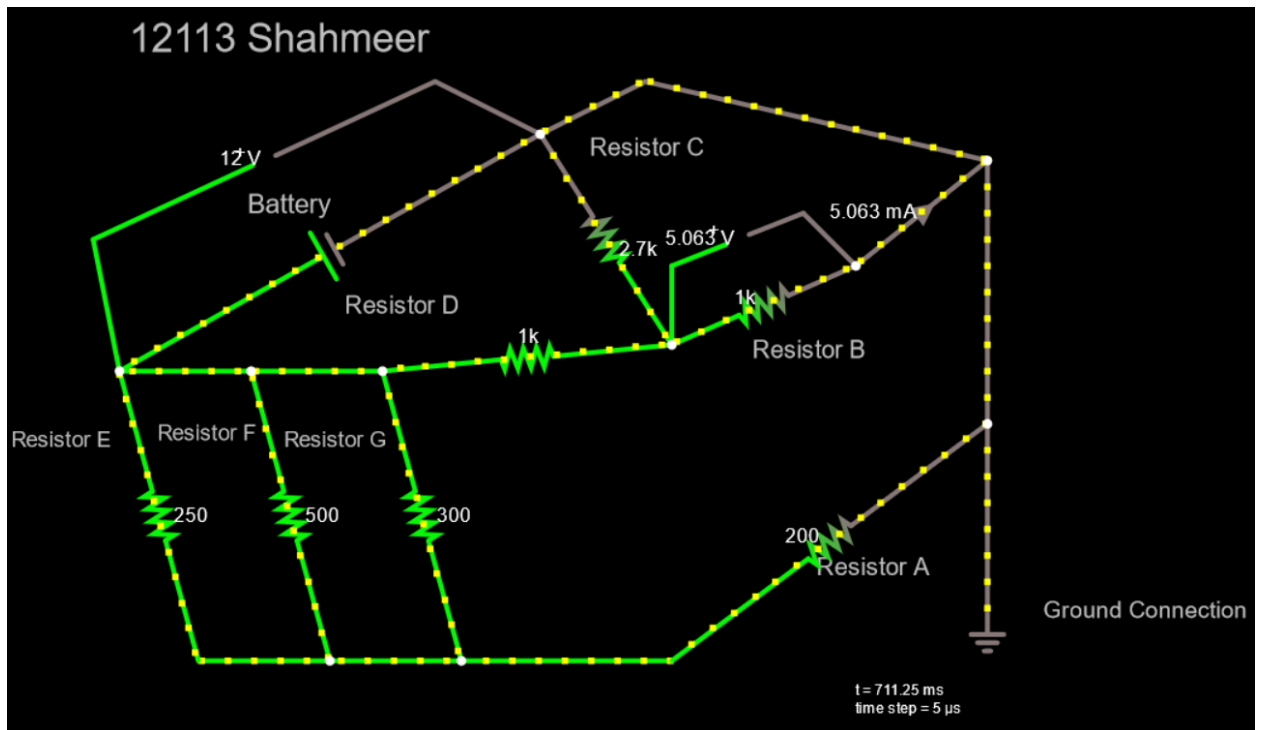
a) Current, Voltage across Resistor A:



- It's Link:

<https://tinyurl.com/ydppxo3z>

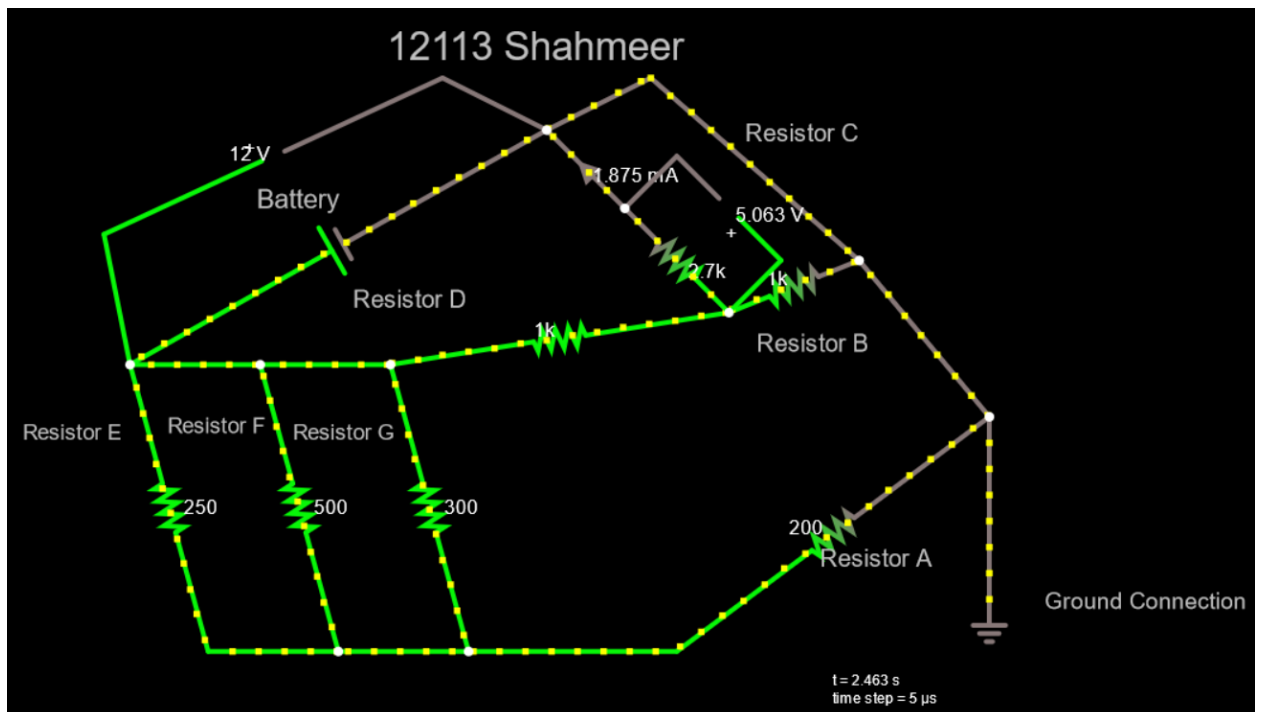
b) Current, Voltage across Resistor B:



• [It's Link:](https://tinyurl.com/yh5blr2p)

<https://tinyurl.com/yh5blr2p>

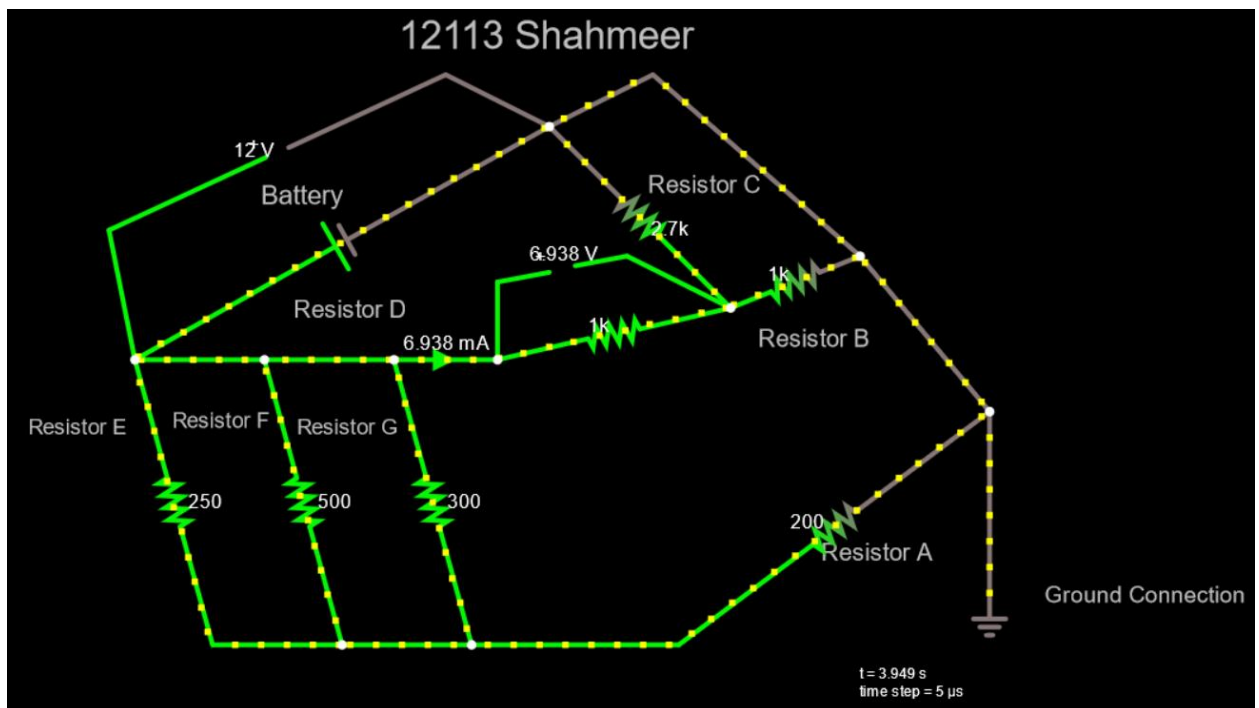
c) Current, Voltage across Resistor C:



- *It's Link:*

<https://tinyurl.com/yjachgr7>

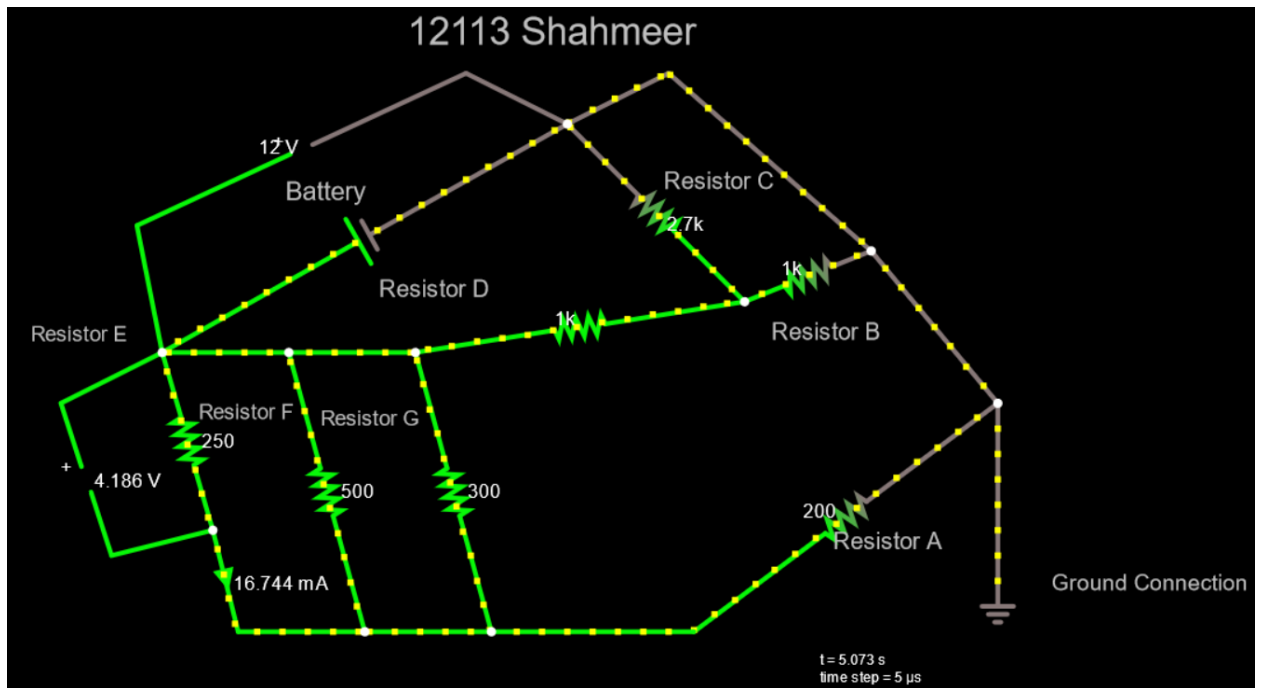
d) Current, Voltage across Resistor D:



- *It's Link:*

<https://tinyurl.com/ygz5hnja>

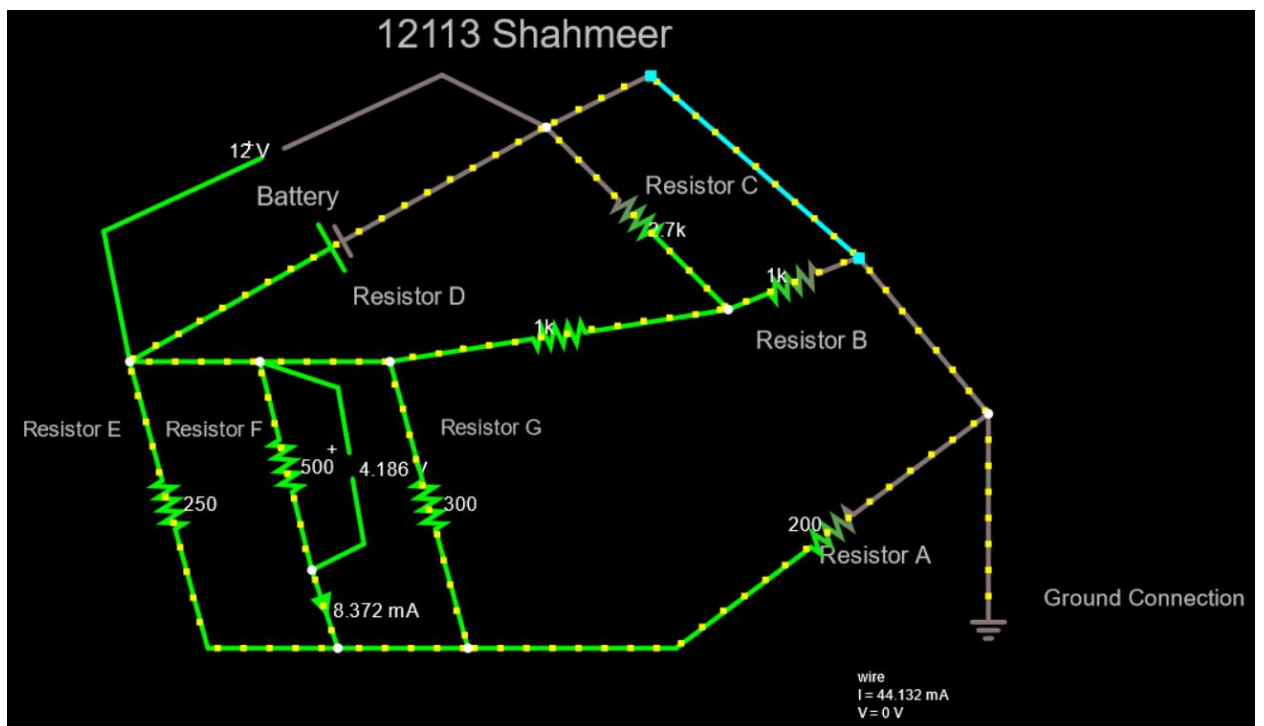
e) Current, Voltage across Resistor E:



• [It's Link:](https://tinyurl.com/yjty4qr2)

<https://tinyurl.com/yjty4qr2>

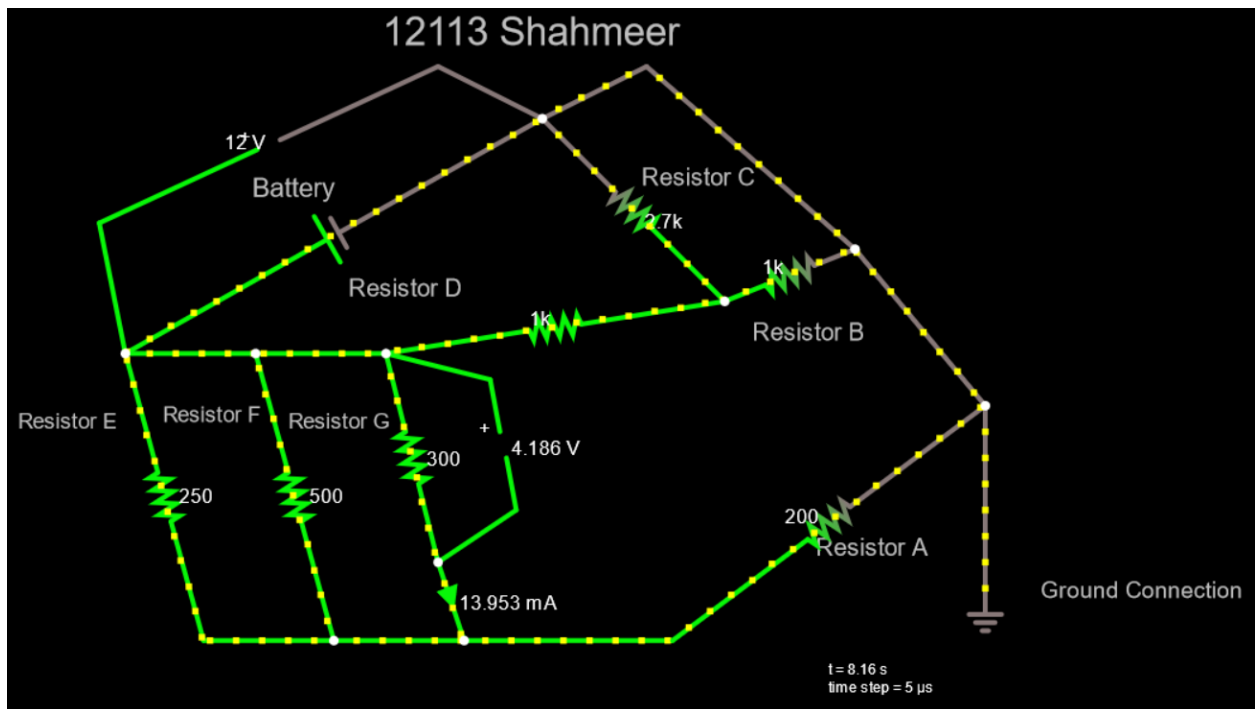
f) Current, Voltage across Resistor F:



- [It's Link:](#)

<https://tinyurl.com/yep65eeu>

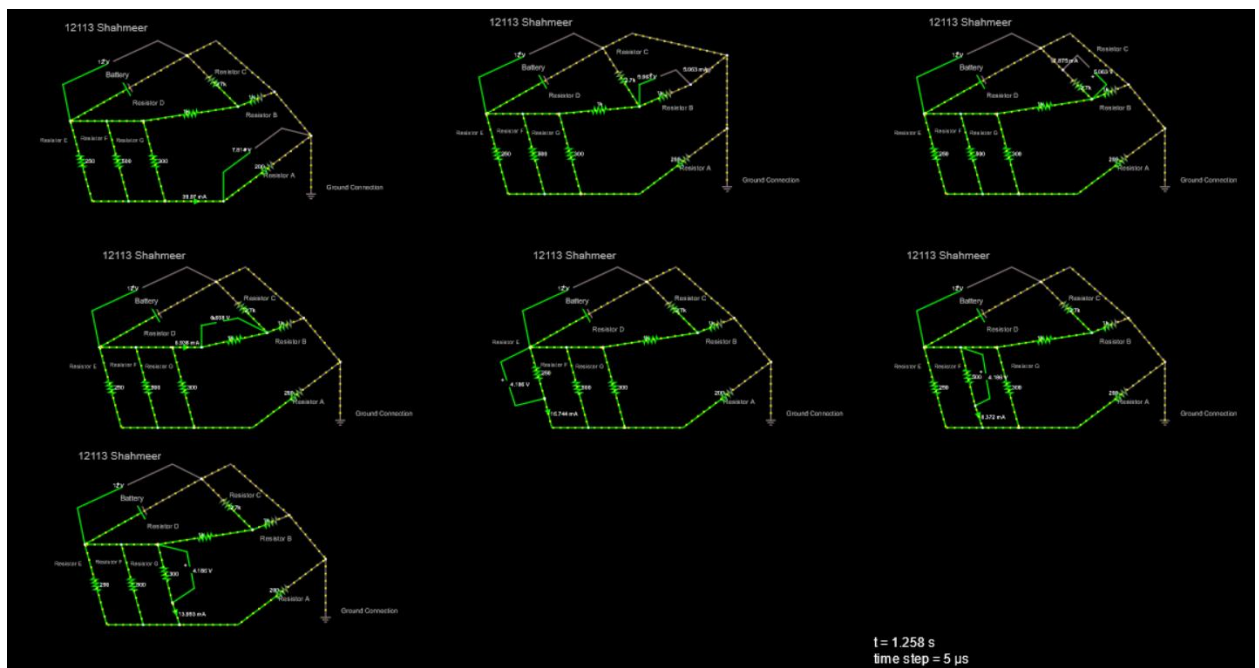
g) Current, Voltage across Resistor G:



- [It's Link:](#)

<https://tinyurl.com/yjed3djr>

- All Circuits (Sequence Wise):



- [Link:](#)

<https://tinyurl.com/yk4o5ajq>

- **Observations/Calculations:**

- Now as we know the voltage and Current across each Component/Resistor so calculating power across each one of them:

- For Component A:

$$R = 200$$

$$V = 7.814$$

$$I = 0.039070 \text{ amp}$$

$$P = VI$$

$$P = (7.814) \times (0.039070)$$

$$P = 0.305292 \text{ w}$$

- For Component B:

$$R = 1000$$

$$V = 5.063$$

$$I = 0.005063 \text{ amp}$$

$$P = VI$$

$$P = (5.063) \times (0.005063)$$

$$P = 0.025633 \text{ w}$$

- For Component C:

$$R = 2700$$

$$V = 5.063$$

$$I = 0.001875 \text{ amp}$$

$$P = VI$$

$$P = (5.064) \times (0.001875)$$

$$P = 0.009495 \text{ w}$$

- For Component D:

$$R = 1000$$

$$V = 6.938$$

$$I = 0.006938 \text{ amp}$$

$$P = VI$$

$$P = (6.938) \times (0.006938)$$

$$P = 0.048135 \text{ w}$$

- For Component E:

$$R = 250$$

$$V = 4.186$$

$$I = 0.016744 \text{ amp}$$

$$P = VI$$

$$P = (4.186) \times (0.016744)$$

$$P = 0.070090 \text{ w}$$

- For Component F:

$$R = 500$$

$$V = 4.186$$

$$I = 0.008372 \text{ amp}$$

$$P = VI$$

$$P = (4.186) \times (0.008372)$$

$$P = 0.035045 \text{ w}$$

- For Component G:

$$R = 300$$

$$V = 4.186$$

$$I = 0.013953 \text{ amp}$$

$$P = VI$$

$$P = (4.186) \times (0.013953)$$

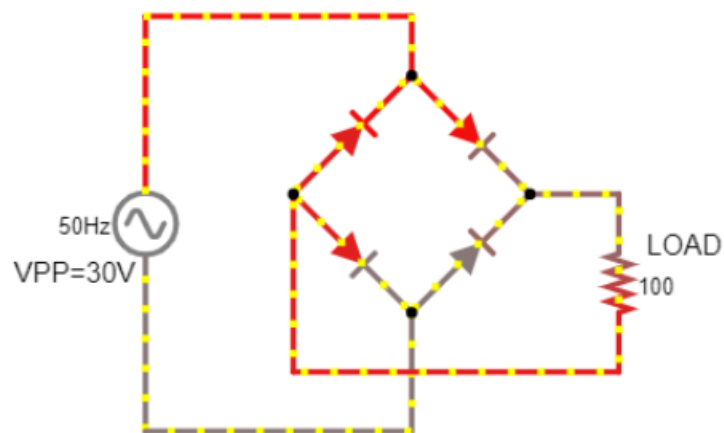
$$P = 0.058407 \text{ w}$$

TABLE

COMPONENTS	RESISTANCES	VOLTAGES	CURRENTS	POWERS
A	200	7.814	0.039070	0.305292
B	1000	5.063	0.005063	0.025633
C	2700	5.063	0.001875	0.009495
D	1000	6.938	0.006938	0.048135
E	250	4.186	0.016744	0.070090
F	500	4.186	0.008372	0.035045
G	300	4.186	0.013953	0.058407

Q # 2 IDENTIFY CIRCUIT,SIMULATE THE FOLLOWING CIRCUIT, TAKE & INSERT SCREEN SHOTS OF CIRCUIT,INPUT & OUTPUT WAVEFORM TO SHOW THE DATA & ANSWER THE QUESTION:

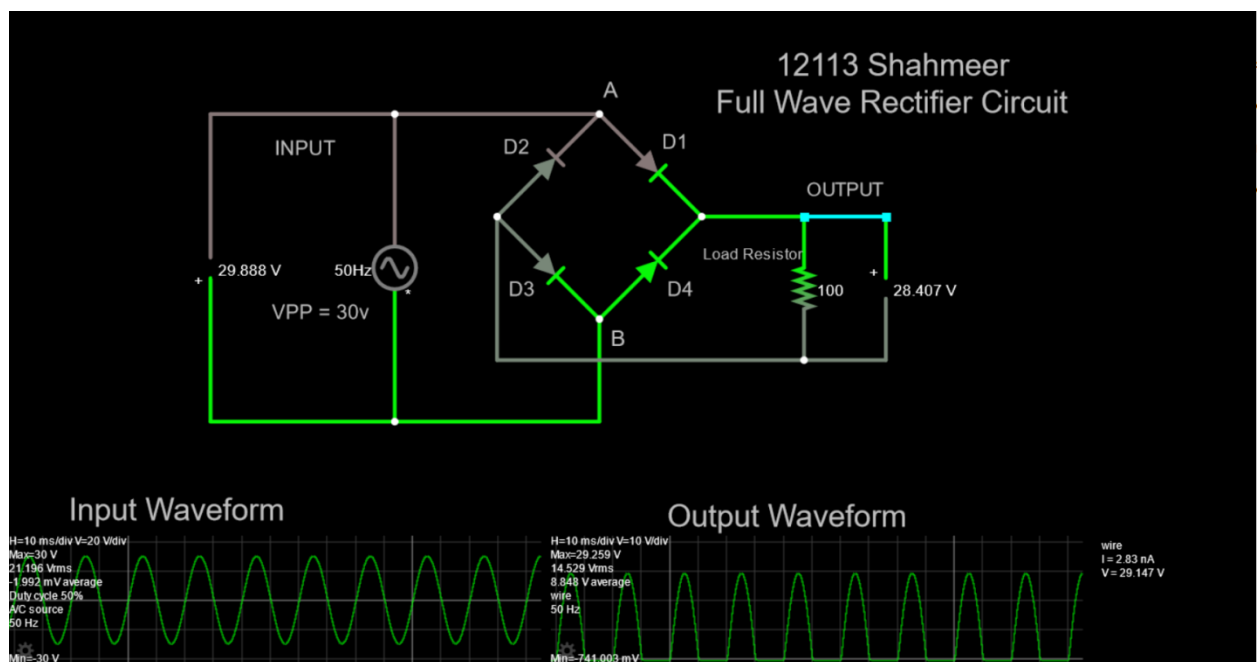
(4)



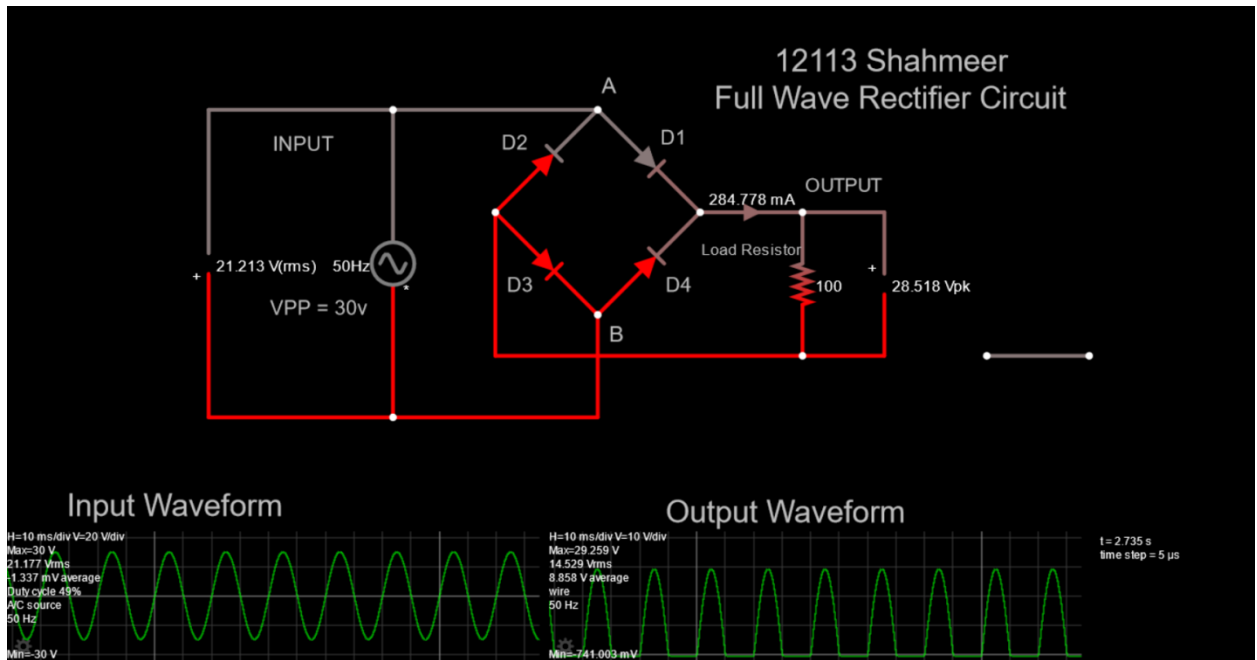
Full Wave Rectifier Circuit

Screenshots:

- Circuit:



- Circuit with RMS Voltage, Output Peak Voltage and Ammeter Connected:

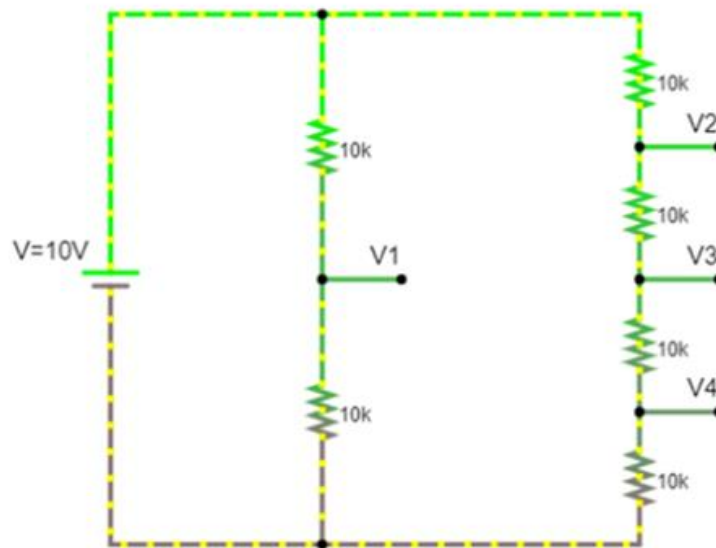


- 1) $V_{Pin} = V_{ac}(V_{rms}) / 0.707$ OR $V_{pp} / 2 = 15 \text{ v}$
- 2) $V_{rms} = V_{ac} = 10.6065 \text{ v}$
- 3) $V_{rms} (avg) = V_{ac} (avg) = 10.6065 \text{ v}$
- 4) $V_{avg} = I_{dc} * R = 0.28477 * 100 = 14.238 \text{ v}$
- 5) $V_{P out} = V_{Pin} - 1.4 = 14.3 \text{ v}$
- 6) $V_{rms(out)} = V_{Pout} = 14.6295 \text{ v}$

[Link:](#)

<https://tinyurl.com/ye77tgob>

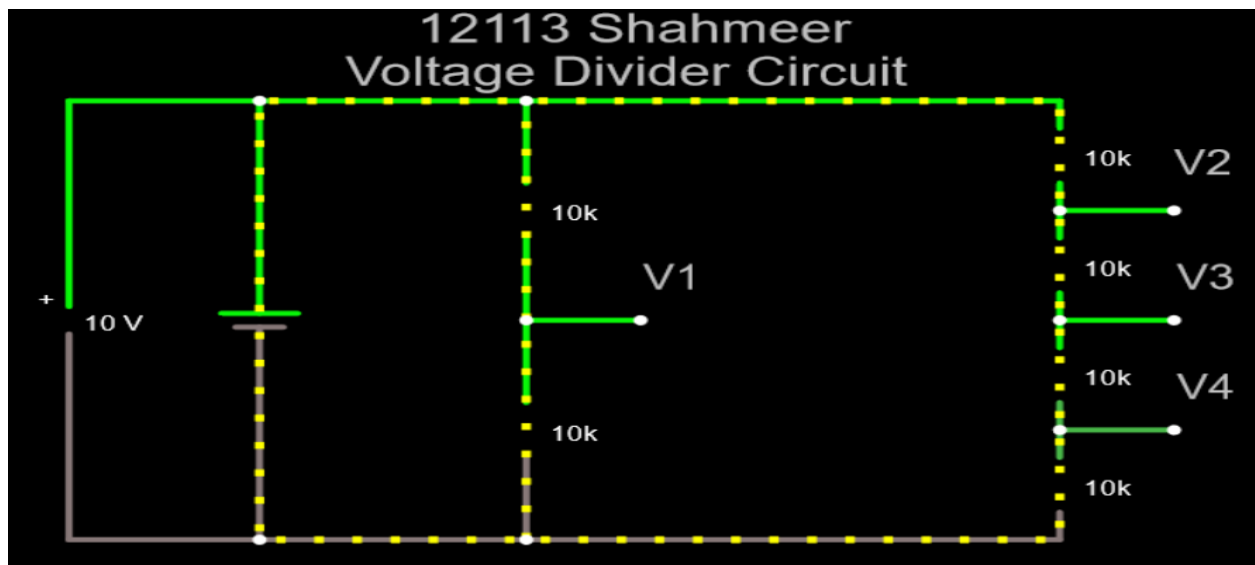
Q # 3 IDENTIFY CIRCUIT, SIMULATE THE FOLLOWING CIRCUIT, TAKE & INSERT 4 SCREEN SHOTS TO SHOW THE DATA OF V1, V2, V3, V4. (2)



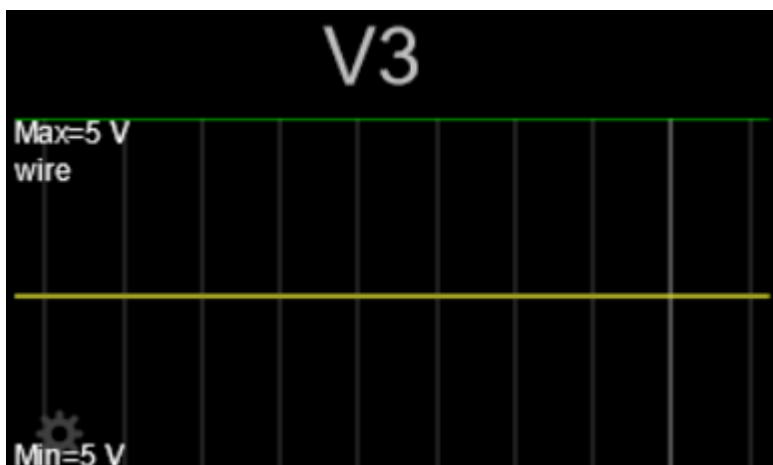
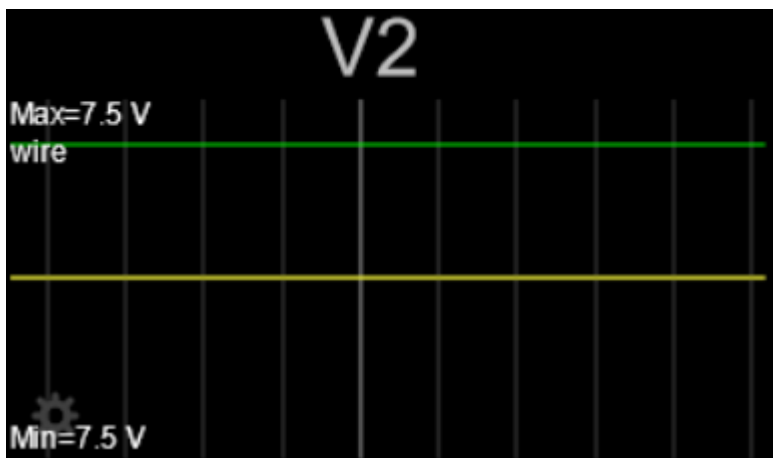
Voltage Divider Circuit

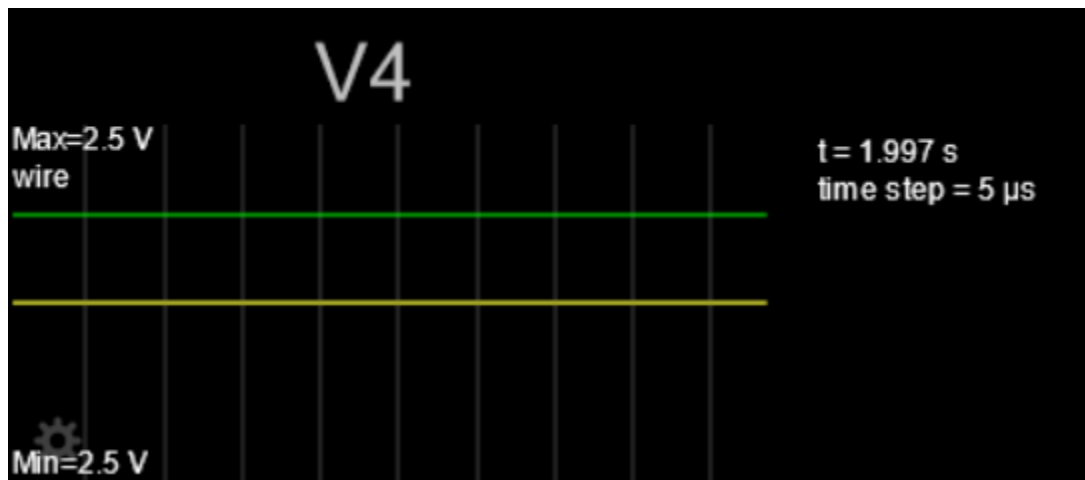
Screenshots:

- Circuit:

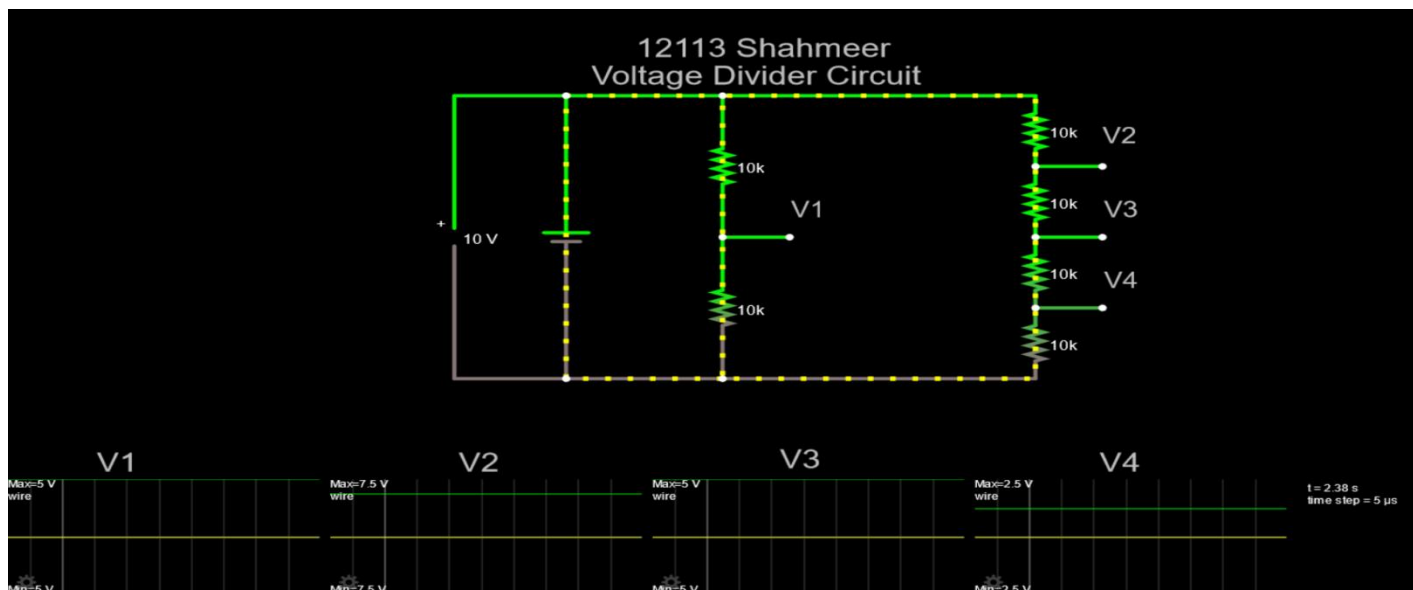


- Voltage on Points V1, V2, V3, V4 in “View in New Scope”:





- Whole Circuit:



V1= 5 V

V2= 7.5 V

V3= 5 V

V4= 2.5 V

- [Link:](#)

<https://tinyurl.com/yznaoemt>