

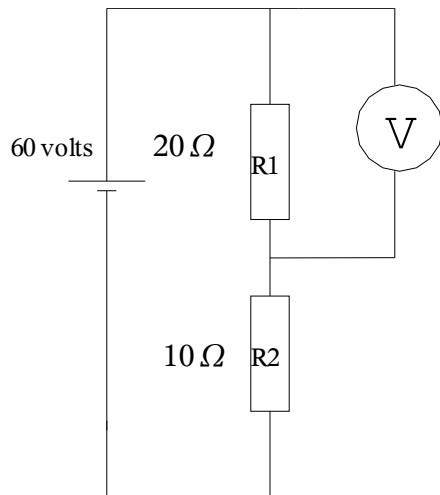
Potential Divider

by Cecil Sie

Note: Formula for potential divider:

$$\frac{V_1}{V_{12}} = \frac{R_1}{R_{12}}$$

1.

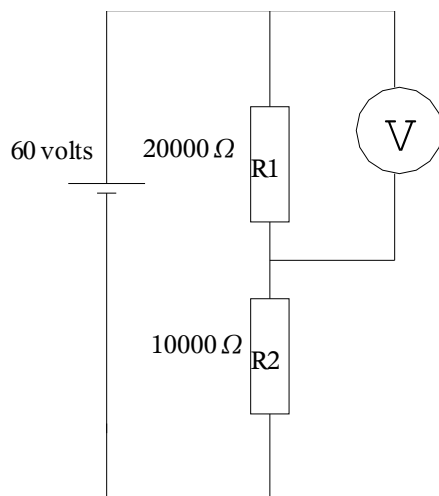


$V_1 =$ _____ volts.

$V_2 =$ _____ volts.

The voltmeter shows _____ volts.

2.

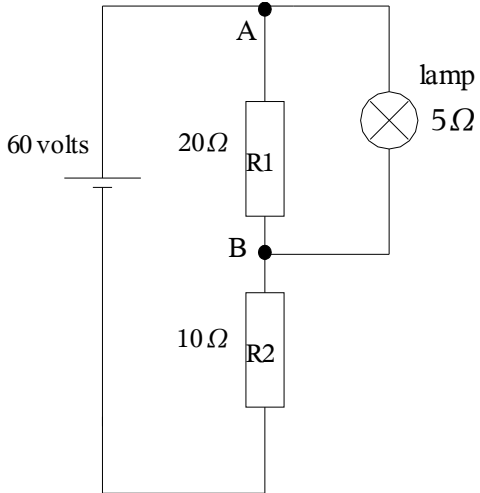


$V_1 =$ _____ volts.

$V_2 =$ _____ volts

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3.



Note: brightness of a lamp is proportional to its power.

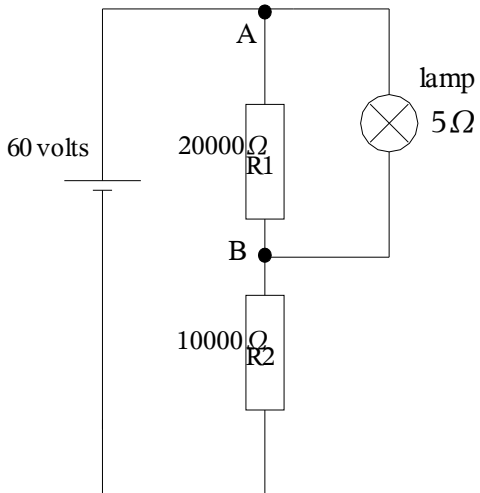
$$R_{AB} = \text{_____ } \Omega$$

$$V_{AB} = \text{_____ volts.}$$

Why V_{AB} is not 40 volts ?

$$\text{Power of the lamp} = \text{_____ watts.}$$

4.



$$R_{AB} = \text{_____ } \Omega$$

$$V_{AB} = \text{_____ volts.}$$

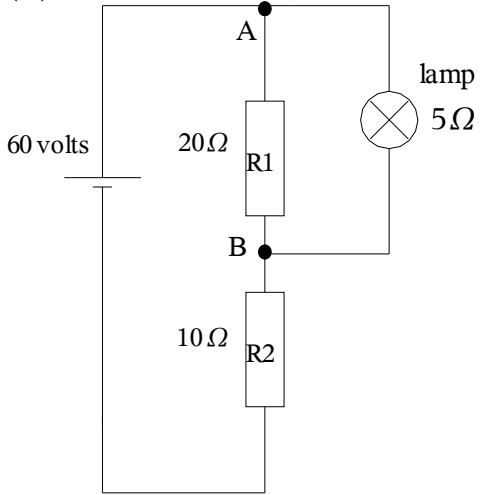
Why V_{AB} is not 40 volts ?

$$\text{Power of the lamp} = \text{_____ watts.}$$

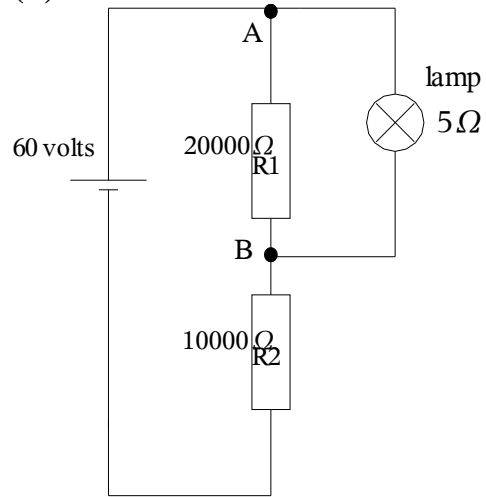
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5. Which circuit produce brighter lamp ?

(A)

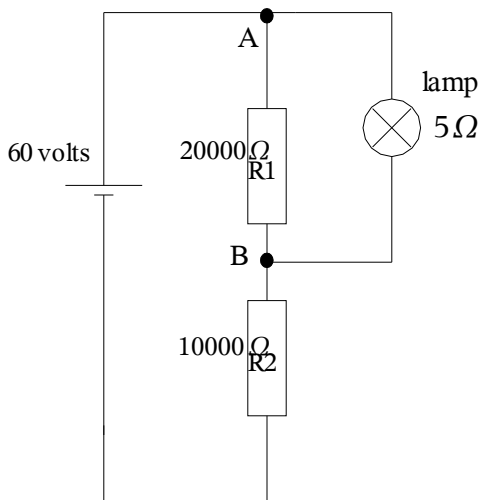


(B)

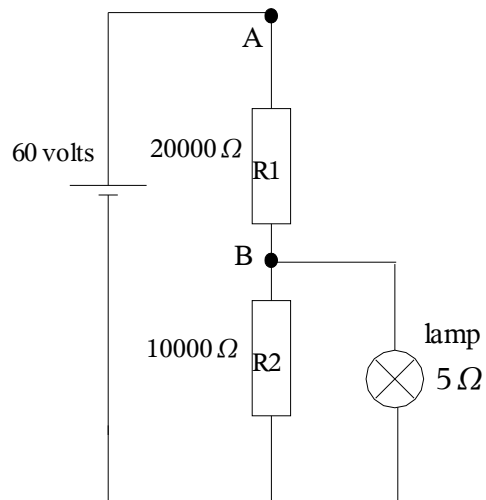


6. Which circuit produce brighter lamp ?

A.)

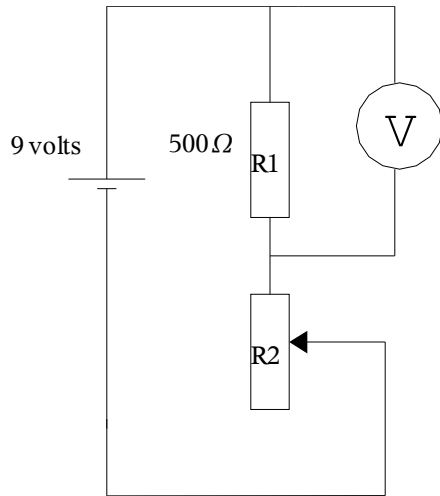


B.)



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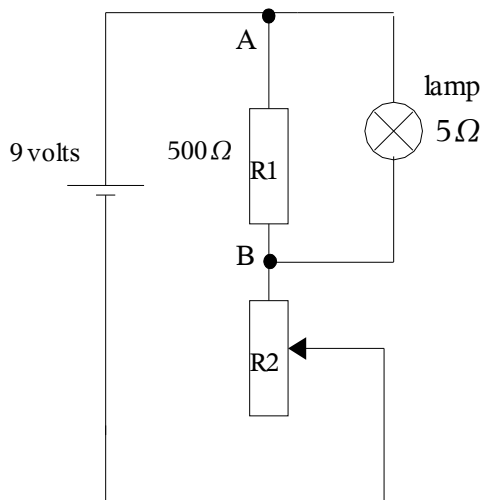
7. The variable resistor R_2 can vary from 0Ω to 1000Ω .



What is the voltage shown by voltmeter when R_2 is set to 0Ω ? _____ volt.

What is the voltage shown by voltmeter when R_2 is set to 1000Ω ? _____ volt.

8. The variable resistor R_2 can vary from 0Ω to 1000Ω .



When R_2 is set to 0Ω ;

$V_{AB} =$ _____ volts.

Power of the lamp = _____ watts.

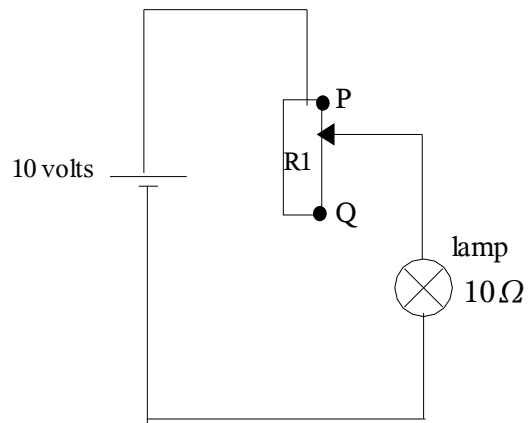
When R_2 is set to 1000Ω ;

$V_{AB} =$ _____ volts.

Power of the lamp = _____ watts.

Can this circuit be used as a dimmer ?

9.



The maximum resistance of R_1 is 990Ω .

a.) When the slider is at P;

Resistance of $R_1 =$ _____ Ω .

Voltage of the lamp = _____ volts.

Power of the lamp = _____ watts.

The lamp is :

- (A) Bright
- (B) Dim

b.) When the slider is at Q;

Resistance of $R_1 =$ _____ Ω .

Voltage of the lamp = _____ volts.

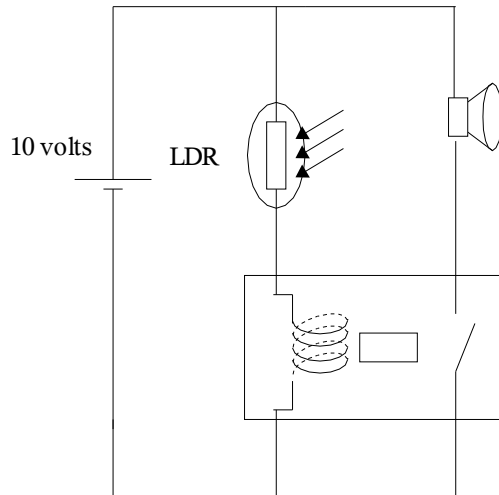
Power of the lamp = _____ watts.

The lamp is :

- (A) Bright
- (B) Dim

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10.



a). When it is dark:

- the resistance of LDR is: (A) High (B) Low
- the voltage across LDR is: (A) High (B) Low
- the voltage across relay is: (A) High (B) Low
- the relay is: (A) switch on (B) switch off
- the speaker is: (A) turned on (B) turned off

b). When it is bright:

- the resistance of LDR is: (A) High (B) Low
- the voltage across LDR is: (A) High (B) Low
- the voltage across relay is: (A) High (B) Low
- the relay is: (A) switch on (B) switch off
- the speaker is: (A) turned on (B) turned off

Can the circuit be used as anti-theft-alarm ? _____

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