

Question#19750

Two resistors of equal resistance are connected in series with each other and are connected to a battery that produces a potential difference of 8 V. If the current is 0.2 A what is the value of each resistance?

Solution:

According to the Ohm's law:

$I = \frac{V}{R_z}$, $R_z = \frac{V}{I}$, where: I current in the circuit, V – voltage, R_z – total resistance of the circuit

At series connection:

$$R_z = R + R = 2R$$

=>

$$R = \frac{1V}{2I}$$

$$R = \frac{1}{2} \frac{8}{0.2} = 80 \text{ ohms}$$

Answer: 80 ohms.