

Answer on Question #42584-Physics-Electric Circuits

How can three resistances of 2, 3, 6 ohms be connected in so as to give a total resistance of 1ohm?

Solution

Three resistances of $R_1 = 2$ ohm, $R_2 = 3$ ohm *and* $R_3 = 6$ ohms should be connected in parallel. The total resistance is

$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} \rightarrow R = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3}} = \frac{1}{\frac{1}{2} + \frac{1}{3} + \frac{1}{6}} = 1 \text{ ohm.}$$

Answer: resistances should be connected in parallel.