

### **Answer on Question #43166, Physics, Electric Circuits**

The resistance of a conductor is  $R = \frac{\rho l}{S}$ , where  $\rho$  is electric resistivity,  $l$  is the length of the conductor,  $S$  is cross-sectional area.

Thus, if the length is reduced to half,  $l \rightarrow \frac{l}{2}$ ,  $R' = \frac{\rho l}{2S} = \frac{R}{2}$ . Hence, the resistance will become two times smaller.