



Extension cord wires come in different diameters, referred to as their gauge. For historical reasons, higher gauge numbers correspond to thinner wires. You have an extension cord with 12-gauge wires that is 15.0 meters long. A 12-gauge wire has a diameter of 2.05 mm. What is the resistance of a wire in the extension cord? (Use copper's resistivity at room temperature, which is  $1.68 \times 10^{-8} \Omega \cdot \text{m}$ .)

Why?


**Check your Why? with Mr. C before continuing.**

How?

**Show all work including substitution with units.**

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Open the short cut **IP I&R** in the folder on one of the lab stations.  
Enter the answer you found above. Check your answer by hitting the check button.  
If your answer is not correct follow the interactive steps below the problem to work through the solution. Write the correct solution on the back of this page.