PHYS 212 L Problems from Chapter 26 Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **•14** | http://edugen.wiley.com/edugen/courses/crs4957/common/art/flyingCircusOfPhysics.gif A human being can be electrocuted if a current as small as 50 mA passes near the heart. An electrician working with sweaty hands makes good contact with the two conductors he is holding, one in each hand. If his resistance is 2000 *Ω*, what might the fatal voltage be? |
| **•19** | |  | | --- | |  |     What is the resistivity of a wire of 1.0 mm diameter, 2.0 m length, and 50 m resistance? |
| **•20** | A certain wire has a resistance *R*. What is the resistance of a second wire, made of the same material, that is half as long and has half the diameter? |

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| **•17** | |  | | --- | |  |   A wire of Nichrome (a nickel–chromium–iron alloy commonly used in heating elements) is 1.0 m long and 1.0 mm2 in cross-sectional area. It carries a current of 4.0 A when a 2.0 V potential difference is applied between its ends. Calculate the resistivity and conductivity of Nichrome. |