Physics Worksheet

# Power, Resistance, Potential Difference & Current Questions

1. How much resistance does a light bulb create if it has a current of 25 mA around it in a 9 V circuit?
2. The current in a microwave oven is 6.25 A.  If the resistance of the oven’s circuitry is 17.6Ω, what is the potential difference across the oven?
3. Find the current in the following appliances when they are connected across a potential difference of 120 V.
4. A stereo with an effective resistance of 65 Ω.
5. A hot plate with a resistance of 48 Ω.
6. A microwave oven with a resistance of 20.0 Ω.
7. The resistance of dry human skin is about 500,000 Ω and wet, sweaty, human skin is about 1000 Ω.
8. How much current passes across someone’s fingers if they touch the leads of a 9 volt battery when their skin is wet or dry?
9. Explain why you think the resistance is greater when human skin is dry as opposed to wet?
10. A battery is rated at 1.5 volts. This battery can produce a maximum of 15 W of power.
11. How much current can this battery produce?
12. What is the resistance of the wire attached to the battery?
13. A stereo speaker is rated at 8 ohms and 40 watts. A fuse is going to be installed in the speaker. The fuse can only handle a certain amount of current at 240 volts. How much current does the fuse need to handle if it is to “blast” at 40 watts?