Unit 9 Problems

1. If a charge of 3.69 C flowed through a wire in .45 s, what is the current?
2. **How many electrons flowed through the wire in problem # 1?**
3. **If a charge of .89 C flowed through a wire in .69 s, what is the current? How many electrons flowed through it?**
4. **If 2.963 A of current were produced in a time of 1.5 s, what was the charge on the electrons that flowed through? How many of them flowed through the wire?**
5. **If 22.56 A of current were produced by a charge of .58 C, what would the time be? How many electrons flowed through the wire?**
6. **If a nichrome wire (check your notes) had a cross section of 4.25 x 10 –8 m2, and a length of 5.235 m, what is the resistance?**
7. **If an Aluminum bar (resistivity = 2.82 x 10 –8 ohm meters) had a cross section of 2.25 x10-7 m2, and a length of 15.5 m, what is the resistance?**
8. **If an unknown metal created 2.5 ohms of resistance, had a cross section of 2.2889 m2 and a length of 1 m, what is the resistivity?**
9. **If a metal had a resistivity of 3.5 x 10-6 ohm meters, a resistance of .6 ohms, and a length of .47 m, what is the cross section?**
10. **If Copper (resistivity = 1.7 x 10-8 ohm meters) had a cross section of 16.25 x 10 –8 and a resistance of 5.25 ohms, what is the length?**
11. If a 2.5 F capacitor is connected to a 9 V power source, what is the size of the charge on the capacitor?
12. 2.) If a .5 F capacitor stores 40 C of charge, how many volts is the power source supplying?
13. 3.)If a platinum resistor has a resistance of 15 ohms at 20 C and melts when it reaches 42.5 ohms, at what temperature did the resistor melt?
14. 4.) If a resistor had a melting point of 45.5 created by 65 ohms, 24 ohms of resistance at 20 C what is the temperature coefficient of resistivity?
15. 5.) If a resistor had a Temp. coefficient of resistivity = 4.01 x 10-3 (C)-1 , a resistance of 11 ohms at 20 C, and melted when it reached a resistance of 35 ohms, what is its melting point?