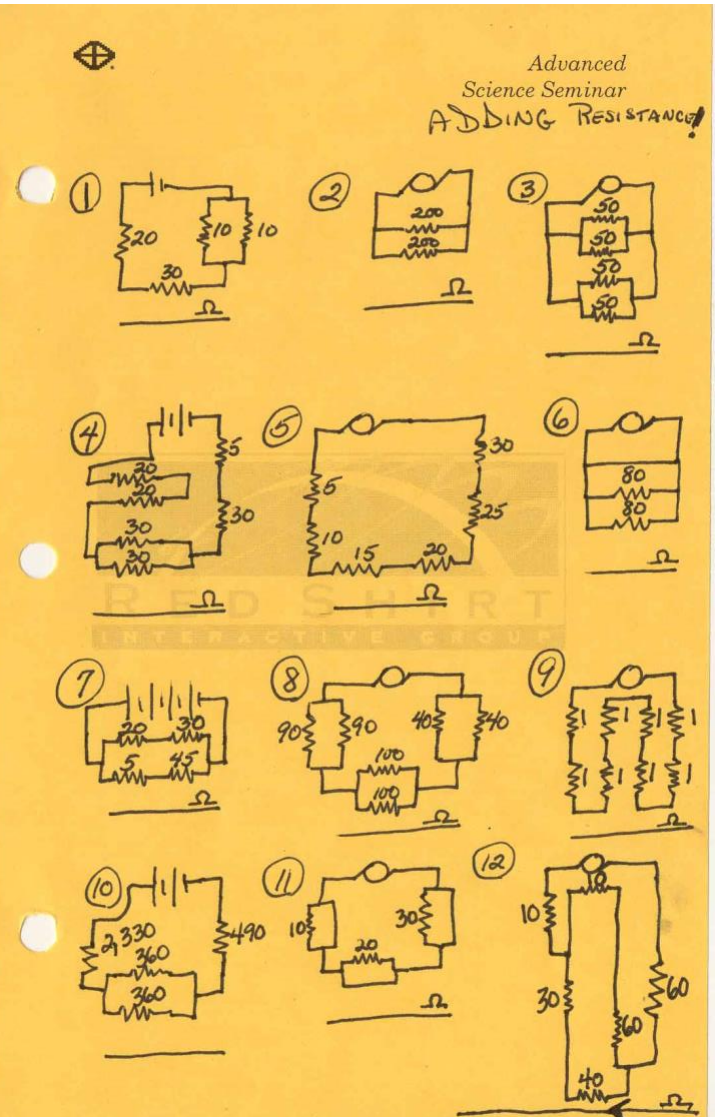
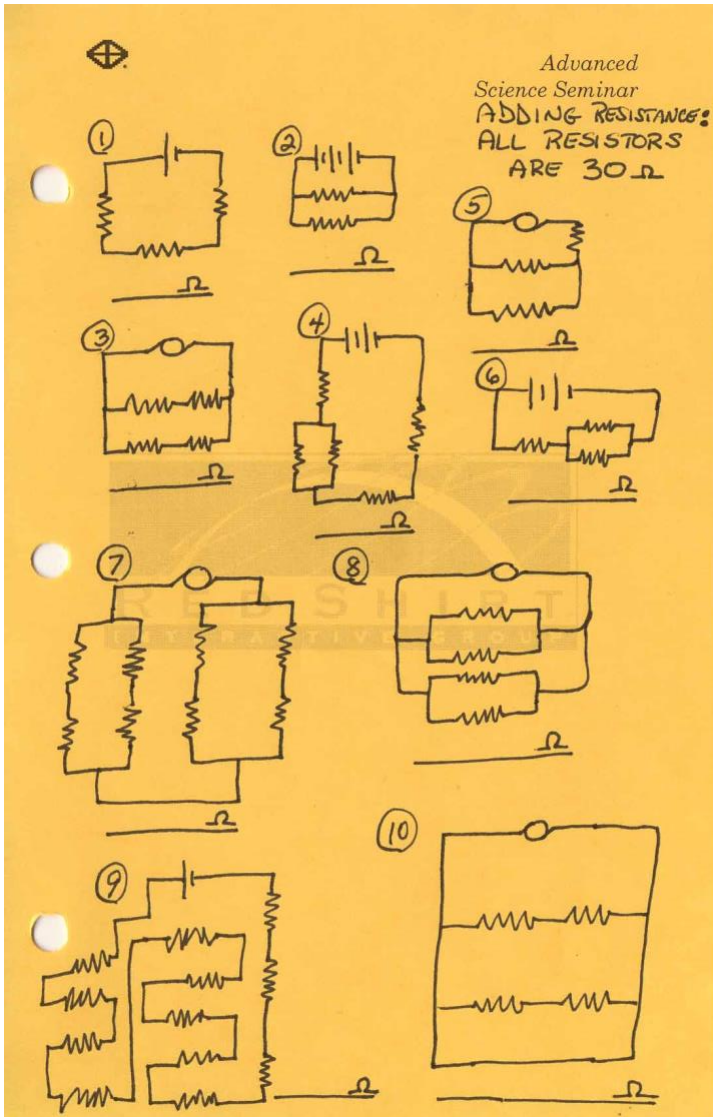


# Resistance



## Ohm's Law

1. **E = 300,007 volts, R = 20 ohms, I = \_\_\_\_\_**
2. **I = 1200 amps, R = 500 ohms, E = \_\_\_\_\_**
3. **I = 8,800 amps, R = 8.2 ohms, E = \_\_\_\_\_**
4. **E = 8,000,000 volts, I = 8.1 amps, R = \_\_\_\_\_**
5. **E = 3,123,395 volts, I = 9.11 amps, P = \_\_\_\_\_**
6. **E = 199 volts, I = 11.8 amps, P = \_\_\_\_\_**
7. **E = 1,111,111 volts, I = 1.9 amps, P = \_\_\_\_\_**
8. **E = 191 volts, I = 1.911 amps, P = \_\_\_\_\_**

## Power

9. **E = 115 volts, I = .01 amps, P = \_\_\_\_\_ [Who am I: stove, hair dryer, stereo?]**
10. **I = 1200 amps, E = 12,001 volts, P = \_\_\_\_\_ [Who am I: power plant, computer circuit, stereo?]**
11. **E = 8,000,000 volts, I = 8.1 amps, P = \_\_\_\_\_ [Who am I: power plant, computer circuit, stereo?]**
12. **E = 3 volts, I = 3 ma, P = \_\_\_\_\_ [Who am I: power plant, computer circuit, stereo?]**
13. **E = 20 volts, R = 2 ohms, P = \_\_\_\_\_**
14. **R = 5000 ohms, I = 3 amps, P = \_\_\_\_\_**

# **COST**

[For the next several COST problems use \$0.10 per kilowatt hour as a rough average cost of electricity. For more accurate prices, see [http://www.eia.doe.gov/cneaf/electricity/page/at\\_a\\_glance/sales\\_tabs.html](http://www.eia.doe.gov/cneaf/electricity/page/at_a_glance/sales_tabs.html).]

- 15. Courtney left a 100 watt light bulb on all day (24 hrs). How much did it cost; but more importantly – why would she do such a thing?**
- 16. Shannon dried her hair for 3 full hours with a 1500 watt hair dryer. How much of his family's money did she spend? (And how split are her ends!!??)**
- 17. Adrian & Xenia made toast for the whole school (because they are nice). It took 2 hours. The toaster used 240 volts and 30 amps of electricity. What did the electricity cost?**
- 18. Sean & Dan watched a 2000 watt TV for a whole weekend - 48 hours straight! Besides having eye strain, not doing homework, setting themselves up with bad habits for college, and leaving emotional scars for life, how much did they spend?**
- 19. Matt & Evan turned on every electric device in the school and left them on for 5 hours. They used 182 amps. What will that cost in \$, suspensions, guilt, anguish, and remorse? Was it really worth it?**
- 20. \*\* EXTRA CREDIT \*\* Mike created a monster! It has no hair, two reptile-like, web-footed legs each of which have 360 neuromuscular heater/motors called 'OOchies', which each run at 120 volts, using .75 amps. The monster can jump 25 feet from a standing position! He calls it "Mike's Bald OOchie Monster". I call it expensive! What does it cost to run this baby for an hour?**