Reading Quiz 2

1. **If electric circuits were really water flowing through pipes, what would current, voltage and resistance be? (metaphorically speaking)**

   Voltage would be the difference in pressure between the beginning and end of the circuit. Current would be the rate of flow of the water and resistance would be the diameter of the pipe it is flowing though.

2. **Your house is powered by a 120V current, and you like the ambiance of 50-watt orange light bulbs. What is the amount of current that flows through the bulb, and what is the resistance of the bulb? (in theory)**

   P=VI

   Therefore I=P/V

   V=IR

   Therefore R=V/I

   So, I=50/120 and I = 0.42 Amps

   and R = 120/0.42 and R = 286 Ohms

1. **How did early bi-directional telegraph systems save wire? (By using a...)**

   Early bi-directional telegraph systems saved wire by using a common.

2. **Once you have a ___ (question 3), you can replace it with...**

what?

You can replace it with an earth connection.

3. **Regarding the telegraph, what mental paradigm did Samuel Morse have to overcome before he could envision Morse code?**

   He had to overcome the paper and reading paradigm. He could only create the Morse code after he came to terms with the fact that his machine won't write on paper.

4. **In a nutshell, what is a relay? How do relays work?**

   A relay is something that amplified the signal so it could travel over longer distances. It worked by having a system every few hundred miles where the electromagnet, instead of being connected to a sounder, would pull down a switch, completing a separate circuit that would send the signal down since the switch would be connected in time with the sending of the actual signal.