Homework: Kirchhoff's laws

In this homework, we will try to summarize what we learned so far about electric circuits.

- Using the results from the Circuits II lab, **make a table** with **rows** "circuit elements in series" and "circuit elements in parallel" and with **columns** "voltage" and "current". Explain what happens in each of the four squares. E.g., for the square: "voltage" and "parallel", you should explain what happens to the voltage when you put two circuit elements in parallel.

	voltage	current
circuit elements in series		
circuit elements in parallel		

- There are two fundamental laws of circuits, known as "Kirchhoff's laws". The first law states that "**The sum of all currents flowing into any point of a circuit is equal to the sum of all currents flowing out of that point**".

  ○ Explain each row in the column "current" in above table using that law:|

  ○ Explain using the water analogy: Imagine a river with upstream and downstream portion as well as a river that is forking into two branches

- The second law states: "**Identify a closed loop in a circuit**. **The sum of all voltage differences along that loop is zero**".

  ○ Explain each row in the column "voltage" in above table using that law:

  ○ Explain using the water analogy: Imagine voltages as elevation of water and the pump/slide setup in the prelab.

Write up the table and the explanations (aim for one page or less).