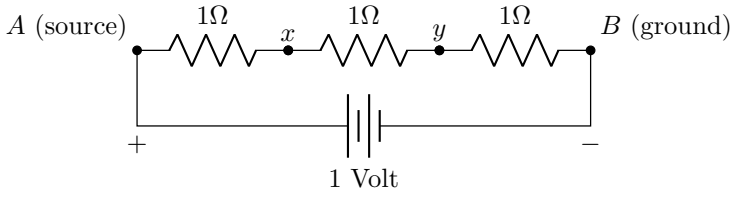
Consider the circuit below. **This the graph from Problem 1**, turned into a circuit by:

- Replacing all edges with 1Ω resistors
- Attaching a 1 volt battery between A and B

Note that the battery between A and B isn't really an edge. It exists only to create a potential difference between the two nodes.



Problem 14:
From the circuit diagram above, we immediately know that $V(A) = 1$ and $V(B) = 0$.
What equations related to the currents out of x and y does Kirchoff's law give us?
Hint: Current into x = current out of x

Problem 15:
Use Ohm's law to turn the equations from Problem 14 into equations about voltage and resistance. Find an expression for $V(x)$ and $V(y)$ in terms of other voltages, then solve the resulting system of equations. Does your result look familiar?