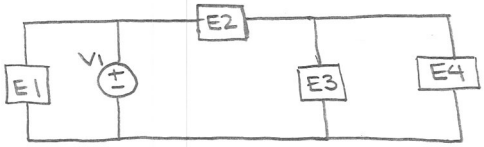
(4pts) Problem 28

A schematic diagram is shown below with a voltage source and three unknown circuit elements in E1, E2, E3 and E4. Circle the correct answer for the questions below.



a) The voltage across E3 _____ the voltage across E4.

1) is the same as
2) is different from
3) is unrelated to

b) The current through E3 _____ the current through E4.

1) is the same as
2) is different from
3) maybe unrelated to

c) The current through E2 is equal to the current through E3 plus the current through E4.

1) true
2) false
3) can't tell

d) The voltage across V1 is equal to the sum of the voltages across E2 and E3 or E4.

1) true
2) false
3) can't tell

For b.... If E2 was a voltage source, the voltage across E3 + E4 would be the same regardless of their individual resistances and the current through one of them could not effect the other one. In that case, there is no relationship between the currents through E3 + E4.