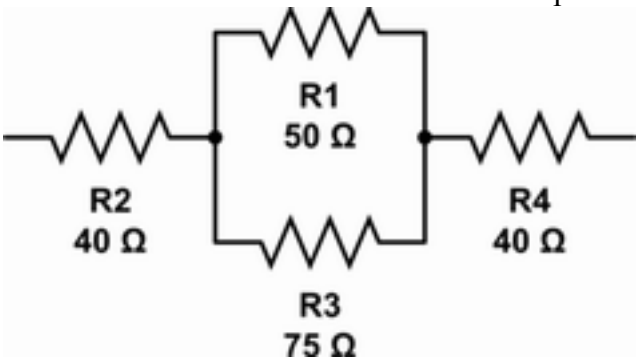
Circuit Lab

1. What is the total resistance from point the left end of the circuit to the right end?



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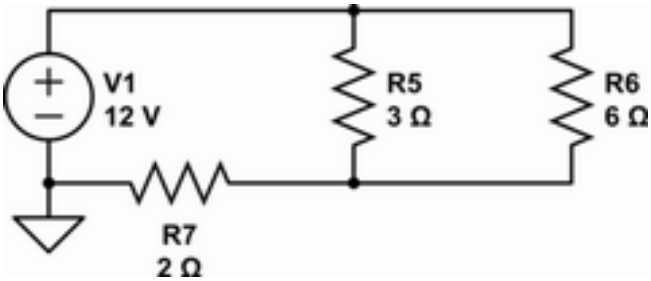
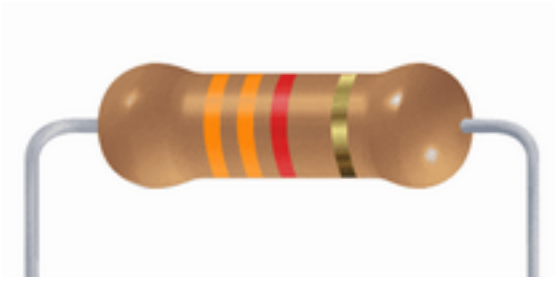
2. Find the current passing through each resistor.



R5: _____ R6: _____ R7: _____

3. What voltage is, conservatively, considered to be dangerous to humans?
   A. 10 V
   B. 30 V
   C. 60 V
   D. 120 V

4. What is the resistance of this resistor?



Colors are orange, orange, red, gold (left to right)

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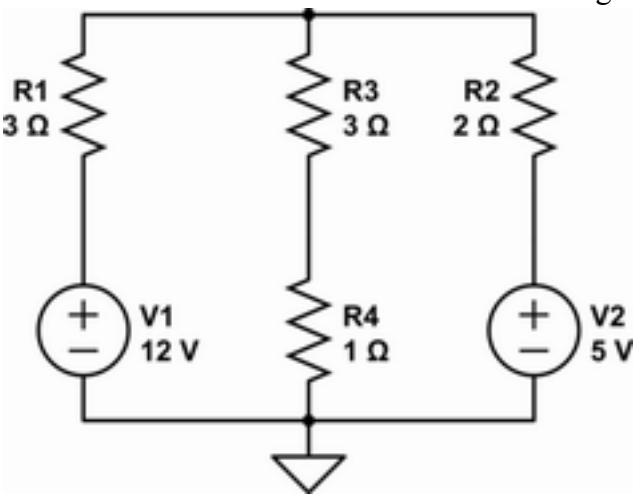
5. Identify this component:

Name:

Function:

6. Find the magnitude of the voltage drop across each resistor.



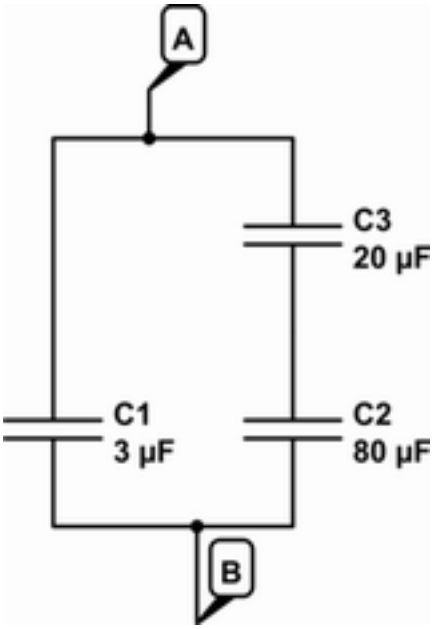
R1: _____ R2: _____ R3: _____

R4: _____

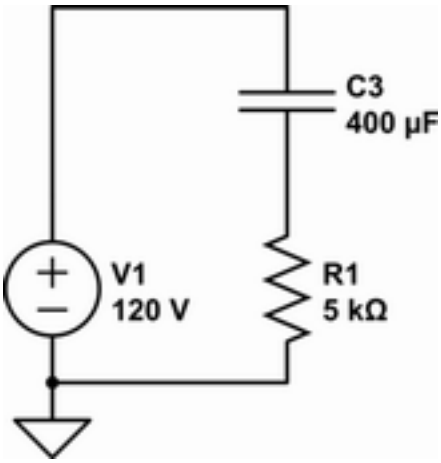
7. Which of the following types of batteries cannot be recharged?
   A. Lead-Acid
   B. Nickel-Zinc
   C. Alkaline
   D. Lithium-Ion

8. What is the SI unit for capacitance?
   A. Henry
   B. Volt
   C. Coulomb
   D. Farad

9. What is the total capacitance between points A and B?



10. Find the time constant of the circuit.



11. Which of the following best describes a diode?
    A. a device used to amplify and switch electronic signals and electrical power
    B. an electrical component used to store energy in an electric field
    C. an electrical component with an asymmetric transfer characteristic
    D. a device used to vary the resistance of a circuit

12. EMF stands for...

13. What is Kirchoff's First Law?