

READINGS: Electronics Workbook 1 (**ew1.pdf**): Pages 1-27
 Man of High Fidelity (**armstrong.pdf**): Chapters 1-3

General rules for written homework assignments:

1. Show your work and formulas, not just the answer.
2. If you can't get the answer using algebra, try another method such as trial and error, "homing in" on the answer.
3. If you are stuck, write down why. Writing promotes clarity in thinking.
4. This assignment is due at the beginning of the next class. There will be a one question quiz on this homework ONE WEEK after the homework is reviewed.

NOTE: The symbol for "ohms" is the capital Greek letter Omega (Ω). The values of the three resistors shown in Figure 1 are thus $4\Omega = 4$ ohms, $5\Omega = 5$ ohms, and $6\Omega = 6$ ohms.

1.1) Find the total resistance, in ohms, R_{ab} (between point **a** and point **b**), R_{ac} (between points **a** and **c**) and R_{ad} (between points **a** and **d**) for the three series resistors in the circuit of Figure 1.



Figure 1.1 Three Series Resistors

1.2) Find R_{ab} the total resistance, in ohms, between point **a** and point **b**, for the two parallel resistors in the circuit of Figure 2.

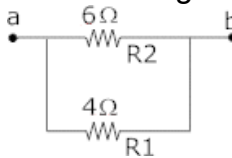


Figure 1.2 Two Parallel Resistors

1.3) Find R_{ab} the resistance, in ohms, between point **a** and point **b**, for the three resistors in the circuit of Figure 3.

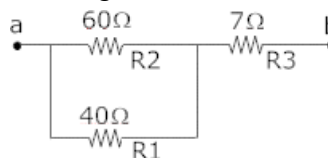


Figure 1.3 Series and Parallel Resistor Combinations

1.4) Find **I** the **current through** R_3 , the **4Ω resistor**, in Figure 4.

1.5) Now find V_3 the **voltage across** resistor R_3 in Figure 4.

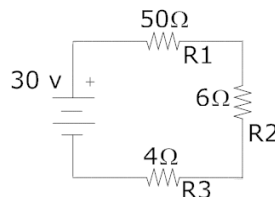


Figure 1.4 A Three Resistor Series Circuit