

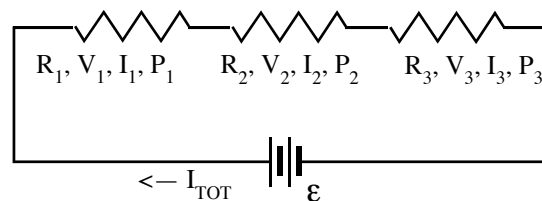
PhyzJob: Circuit Puzzles

CONCEPTS AND NUMBERS



SERIES INQUIRIES (Items 1–5)

Consider the series circuit shown to the right.



1. If $I_1 = 3.7$ A, what is

a. I_2 ? _____ b. I_3 ? _____

c. I_{TOT} ? _____

2. If $V_1 = 2$ V, $V_2 = 1$ V, and $V_3 = 5$ V, what is ϵ ? _____

3. If $V_1 = V_2 = V_3 = 4$ V and $I_1 = I_2 = I_3 = 3$ A, what is

a. $\epsilon =$ _____ b. I_{TOT} ? _____

4. If $\epsilon = 18$ V, $V_1 = 4$ V, and $V_2 = 8$ V, what is V_3 ? _____

5. If $I_1 = 5$ A, $R_2 = 3$ Ω , and $P_3 = 10$ W, what is

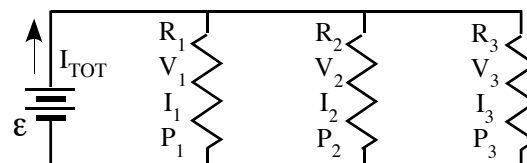
a. V_2 ? _____ b. V_3 ? _____

c. P_2 ? _____

d. R_3 ? _____

PARALLEL PONDERABLES (Items 6–9)

Consider the parallel circuit shown to the right.



6. If $\epsilon = 7.3$ V, what is

a. V_1 ? _____ b. V_2 ? _____

c. V_3 ? _____

7. If $I_1 = 3.4$ A, $I_2 = 1.8$ A, and $I_3 = 0.6$ A, what is I_{TOT} ? _____

8. If $V_1 = V_2 = V_3 = 4$ V and $I_1 = I_2 = I_3 = 3$ A, what is

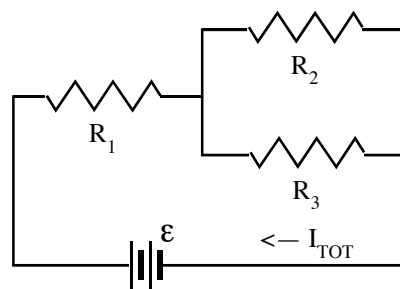
a. $\epsilon =$ _____ b. I_{TOT} ? _____

9. If $V_1 = 6 \text{ V}$, $R_2 = 4 \Omega$, and $P_3 = 12 \text{ W}$, what is
 a. I_2 ? b. I_3

- c. P_2 ? d. R_3 ?

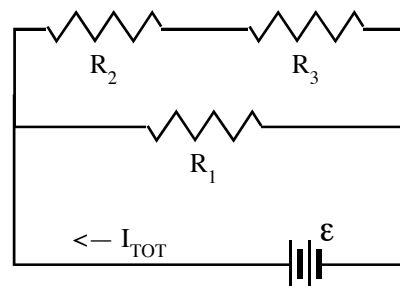
COMPOUND CONUNDRUMS (Items 10–15)
 Consider the compound circuit shown to the right.

10. If $I_2 = 5 \text{ A}$ and $I_3 = 2 \text{ A}$, what is I_1 ? _____
 11. If $V_1 = 7 \text{ V}$, $V_2 = 4 \text{ V}$, and $V_3 = 4 \text{ V}$, what is \mathcal{E} ? _____
 12. Removing one bulb puts the other two out.
 Which bulb is removed? _____



Consider the compound circuit shown to the right.

13. If $V_2 = 4 \text{ V}$ and $V_3 = 6 \text{ V}$, what is V_1 ? _____
 14. If $I_1 = 3 \text{ A}$, $I_2 = 2 \text{ A}$, and $I_3 = 2 \text{ A}$, what I_{TOT} ? _____
 15. Removing two bulbs leaves the other one on.
 Which bulb stays on? _____



V.E.V.V V.E.V.d V.E.V.6.8 \Omega P.O.b W2V.V V.S.d V2V.6.2 V8.P A.E.d V.S.V.6.E V8.S A.V.E.V A.V.E.d A.V.E.6.V
 1.2V A2.PV V0V.EV 1.SV V1V.1V A.V.OV \Omega E.b W8.V A.S.d A2.V.6.E A.E.d V4.6.8 A8.2.V