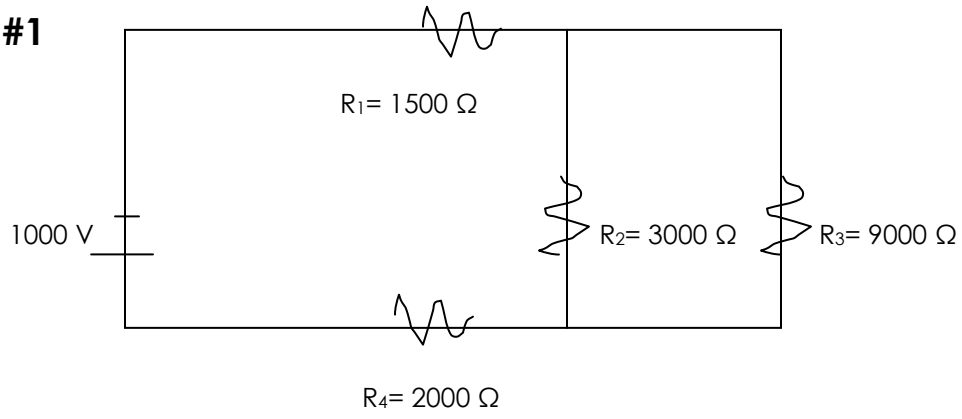
Name _____ Hour _____

Complex Circuit Practice Worksheet

Circuit #1



1. Find the **total resistance**. (Do parallel resistors first-get an answer, then add the series ones) (5750 Ω)

2. Find the **total current**. (Round to 3 decimals!) (0.174 A)

3. Find the voltage drop for any resistors in series. (There should be 2 series resistors) (ΔV_1= 261 V, ΔV_4= 348 V)

4. Find the voltage lost through resistor 2. (Remember- each circuit path adds up to the total voltage of the battery) ($\Delta V_1 + \Delta V_2 + \Delta V_4 = 1000$ V)

5. Find the voltage lost at R_3. ($\Delta V_1 + \Delta V_3 + \Delta V_4 = 1000$ V)

6. Solve for the currents through the rest of the resistors and put your answers in the box.

7. What is $I_2 + I_3$? Does it equal the total current? It SHOULD!

I_1 = _____ (0.174 A)

I_2 = _____ (0.130 A)

I_3 = _____ (0.043 A)

I_4 = _____ (0.174 A)

ΔV_1 = _____ (261 V)

ΔV_2 = _____ (391 V)

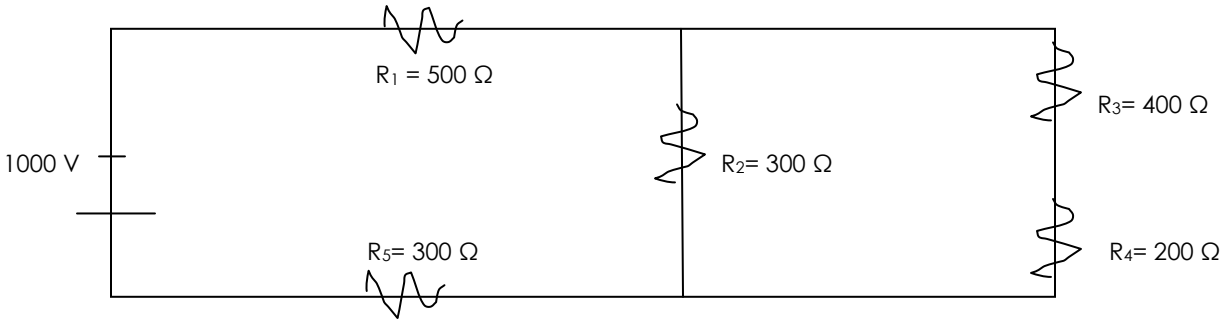
ΔV_3 = _____ (391 V)

ΔV_4 = _____ (348 V)

Name _____ Hour _____

Complex Circuit Practice Worksheet

Circuit #2



1. Find the **total resistance**. (R_3 and R_4 are in series with each other but in parallel with R_2, so do $\frac{1}{300} + \frac{1}{(400+200)}$, get an answer and then add the two resistors that are in series.) *(1,000 Ω)*

2. Find the total current. (Use the total voltage and total resistance) (1.0 A)

8. Find the voltage drop for any resistors that are in series. (ΔV_1 =500 V, ΔV_5 = 300 V)

9. Find the voltage lost at R_2 and then the current through it. ($\Delta V_1 + \Delta V_2 + \Delta V_5 = 1000$ V)

10. What is the voltage left to be lost through R_3 and R_4?

11. Use this voltage and their combined resistance to find the current through R_3 and R_4. (It's the same).

12. Find the voltage of R_3 using the current you just found.

13. Find the voltage of R_4.

14. What is $\Delta V_1 + \Delta V_2 + \Delta V_5$? Does it equal $\Delta V_1 + \Delta V_3 + \Delta V_4 + \Delta V_5$? **Explain why it should**!

I_1 = _____ (1.0 A)

I_2 = _____ (0.667 A)

I_3 = _____ (0.333 A)

I_4 = _____ (0.333 A)

I_5 = _____ (1.0 A)

ΔV_1 = _____ (500 V)

ΔV_2 = _____ (200 V)

ΔV_3 = _____ (133.2 V)

ΔV_4 = _____ (66.6 V)

ΔV_5 = _____ (300 V)