

Electricity and Circuits Test Review

If you scored a 54/60 or higher on the complex circuit quiz you may skip #18.

#19 is optional for all and worth 1 sticker.

My score on the circuit quiz was ____/60.

1. Fill in the chart below:

Variable	What it stands for	Unit measured in	Abbrev. for unit
W			
P			
I			
ΔV			
R			

2. Power needs to be in _____ to use the $P=W/\Delta t$ and $P=I \Delta V$ equation
3. Power needs to be in _____ to find the **COST** of an appliance.
4. How much current does a 1000-Watt stove draw? (8.33 A)

5. A 50 Ω resistor has a current of 0.09 A running through it. What is the voltage? (4.5 V)

6. An electric space heater uses 1,500 W of power. Calculate the resistance of the space heater. (9.6 Ω)

7. Dakota Electric charges \$_____ = _____ cents for 1 _____ of electricity.
8. Calculate the cost of running a 1200 W hair dryer for 10 minutes. (\approx \$0.02 or 2 cents)

9. How much does it cost to wash a load of laundry if you run a 1150 W washer for 30 minutes and a 4400 W dryer for 65 minutes. (\approx \$0.54 or 54 cents)

Name _____ Hour _____

10. The old overhead bulbs are 360 W, while the new LCD projectors use a 250 W bulb. How much money will I save in 1 week if I use the LCD projector for 4.5 hours a day for 5 days instead of the overhead? ($\approx \$0.25$)

11. 1 Joule = 1 _____

12. Convert 120 kWh into Joules (watt \cdot sec). (4.32×10^8 J)

13. Convert 3,400,000 J (watt \cdot sec) into kWh. (0.94 kWh)

14.

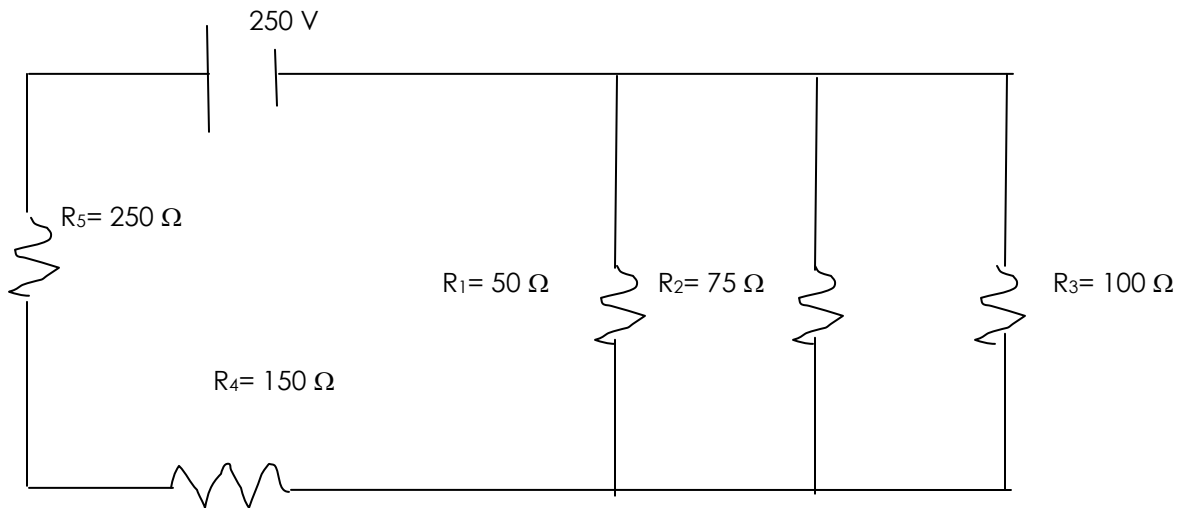
a. If your electric meter has a Kh reading of 7.2...that is the work done (in Watt \cdot hours) in one spin. If it takes 2.5 sec for one spin, how much power is your house putting out? (10,368)

b. What UNIT is the power from part a in? _____

c. If you continue at that rate of power, how much would it cost to operate all of those appliances for 24 hours a day, for 30 days? ($\approx \$754$)

Name _____ Hour _____

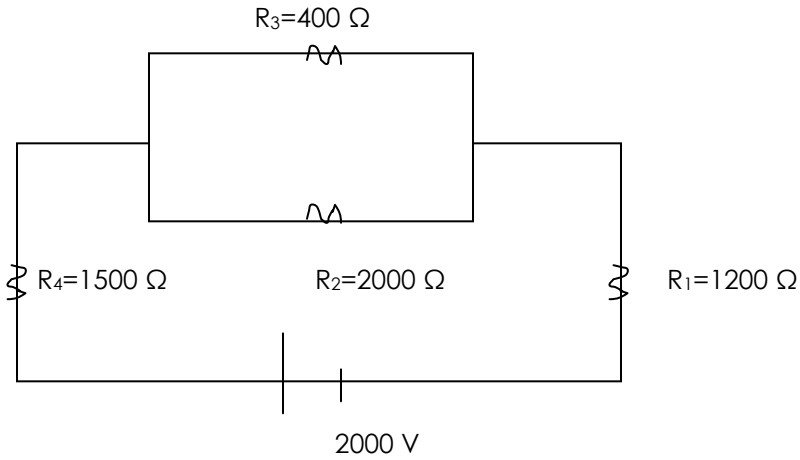
15. Know the **definitions and units** for circuit, voltage, current, and resistance.
16. Resistors in series have _____ path(s) for the current to flow through.
17. Resistors in parallel have _____ path(s) for the current to flow through.
18. Answer the following questions using the diagram below:



- a. Calculate the total resistance of the circuit. (423Ω)
- b. Calculate the total current of the circuit. (0.59 A)
- c. What is the voltage across R_3 ? (14 V)
- d. What is the current across R_2 ? (0.18 A)
- e. What is the voltage drop and current across R_1 ? ($14 \text{ V}, 0.28 \text{ A}$)
- f. What is the voltage drop and current across R_5 ? ($147.5 \text{ V}, 0.59 \text{ A}$)

THIS PAGE IS OPTIONAL-WORTH 1 STICKER

Circuit 1:



Req = _____

Total I = _____

I₁ = _____

I₂ = _____

I₃ = _____

I₄ = _____

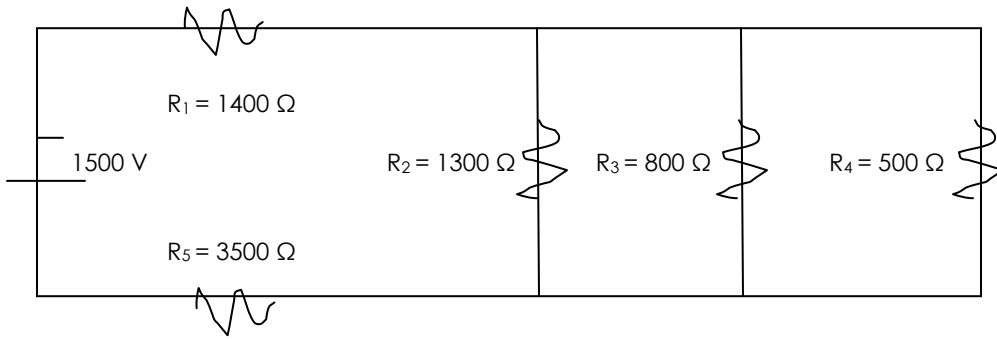
ΔV₁ = _____

ΔV₂ = _____

ΔV₃ = _____

ΔV₄ = _____

Circuit 2:



Req = _____

Total I = _____

I₁ = _____

I₂ = _____

I₃ = _____

I₄ = _____

I₅ = _____

ΔV₁ = _____

ΔV₂ = _____

ΔV₃ = _____

ΔV₄ = _____

ΔV₅ = _____