

Name: _____ Date: _____

Social Security Number: _____

1. Which formula does *not* apply to a parallel circuit?
 - a. $R_T = \frac{R}{N}$
 - b. $R_T = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \frac{1}{R_3} + \frac{1}{R_4}}$
 - c. $R_T = R_1 + R_2 + R_3$
 - d. $R_T = \frac{R_1 \times R_2}{R_1 + R_2}$
2. If two or more resistors are connected in parallel, the _____.
 - a. total resistance is higher than any single resistor
 - b. total resistance is lower than any single resistor
 - c. current flow varies based on voltage fluctuation
 - d. resistance depends on the power rating of the circuit
3. True or False? You can use Ohm's law to find the value of each branch current in a parallel circuit.
4. True or False? Parallel circuits are current dividers.
5. Which statement is *not* correct relative to Kirchoff's first law?
 - a. $I_A + I_B - I_C = 0$
 - b. The total current entering a point must equal total current leaving a point.
 - c. The total line current must equal the sum of the branch currents.
 - d. Kirchoff's laws apply to current only.
6. True or False? In a series circuit, E_T must equal the sum of the voltage drops.
7. When calculating series-parallel combination circuits, it is important to _____.
 - a. reduce to series loads, then add the loads
 - b. replace parallel combinations with one value
 - c. reduce to simpler circuits where possible
 - d. All of the above.
8. True or False? Kirchoff's voltage law is used to determine voltage drops.

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9. Two resistors are connected in parallel; R_1 is 90 ohms, R_2 is 45 ohms. What is the total resistance of R_1 and R_2 in parallel? _____
10. Two resistors are connected in parallel; R_2 is 90 ohms, R_3 is 45 ohms. A third resistor (R_1 , which is 20 ohms) is connected in series with R_2 and R_3 .
- a. What is the total resistance of this circuit?

- b. If the voltage source of this circuit is 150V, what is the total current flow?

(Hint: sketch the circuit before solving.)

