Title: **Ohms Wheel Calculations** Worksheet: 4

Course: Electrical Applications Unit: Electrical Theory CLO: 3

Name ANSWER KEY Grade \_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall calculate power, current, resistance and voltage when given two of the three properties.
2. Student shall contrast the difference between power, current, resistance and voltage.

**Assessment**

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this Worksheet. Grading shall be based on an answer key.

**Conventions**



Where;

P = Power in Watts (W)

I = Current in Amperes (A)

R = Resistance in Ohms (Ω)

E = Voltage in Volts (V)

**Instructions**

Using the Ohms Wheel, solving for power, current, resistance and voltage. All answers will be in engineering units M, k, m, and μ. Display at least 1 whole number and not more than 3 whole numbers to the left of the decimal, and round off to 3 decimal places to the right of the decimal.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | P | I | R | E |
| 1. | 425mW | 35.887mA | 330Ω | 11.843V |
| 2. | 12mW | 172μA | 405.625kΩ | 69.767V |
| 3. | 232.727mW | 14.545mA | 1.1kΩ | 16V |
| 4. | 3.313W | 312mA | 34.042Ω | 10.621V |
| 5. | 110W | 229.167mA | 2.095kΩ | 480V |

Using the Ohms Wheel, solving for power, current, resistance and voltage.

1. The power dissipated by the circuit is 350mW and the source voltage is 4.8V.  
   What is the circuit current?
2. The power dissipated by the circuit is 230mW and the circuit current is 980mA.  
   What is the source voltage?
3. The circuit has a resistance of 5k ohms and a power dissipation of 375mW.   
   What is the source voltage?
4. The circuit has a voltage source of 65V, the amount of power dissipated is 57W.  
   What is the circuit resistance?
5. The source voltage is 86V and the circuit resistance is 4.65k ohms.   
   What is the power dissipated by the circuit?
6. The circuit has a current flow of 185μA and a resistance of 4.65k ohms.   
   What is the power dissipated by the circuit?
7. The circuit has a power rating of 15W and a resistance of 6.95k ohms.   
   What is the circuit current?
8. The circuit dissipates 950mW and the current flow is 872mA.   
   What is the circuit resistance?
9. The circuit current is 12mA and the resistance is 15k ohms.   
   What is the source voltage?
10. The source voltage is 4.8V and the circuit resistance is 1.4kΩ.  
    What is the power dissipated by the circuit?