Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date \_\_\_/\_\_\_/\_\_\_

**Answer Key: Student Activity – Electrical Power**

**Directions for Compute Power from the Power Formula**

Study the following schematics and answer the questions below them. Use the formulas for power:

* P=VI when current and voltage are known;
* P=I2R when current and resistance are known; and
* P=V2 /R when voltage and resistance are known.



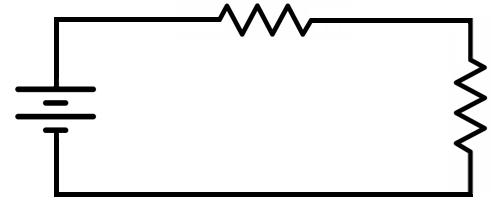
**A**.

I = 25 mA

R = 150 Ω

1. State the power formula(s) needed to solve for power. **P=I2R**
2. Solve for P. **P= 93.75 mW**

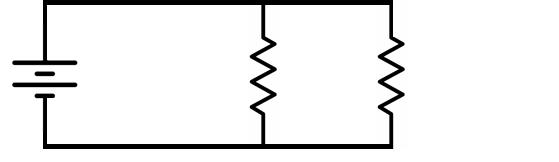
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **B**. | |  |  |  |
|  |  |  | |  |
|  |  | R = 100 Ω |  |  |
|  |  |  | R = 250 Ω |  |
| V = 16 V |  |  |  |
|  |  |  |
|  |  |  |  |
|  |  |  |  |  |



1. State the power formula(s) needed to solve for power. **P=V2/R**

|  |
| --- |
|  |

2. Solve for P. **P = 1.024 W**



|  |  |  |  |
| --- | --- | --- | --- |
| **C.** | I = 60 mA |  |  |
|  |  |  |

I = 20 mA

R = 40 Ω

1. State the power formula(s) needed to solve for power. **P1 = I2R, P2 = VI**
2. Solve for P. **P1 = 64 mA, P2 = 32 mA**