**Basic Electricity and Electronics**

**Module One – Problem Worksheet**

1. A circuit has a 12 V power supply and a 1 kΩ resistor. What is the current?
2. A circuit has a 42 kΩ resistor and 8 mA of current. What is the voltage?
3. A circuit has 520 milli amps of current and 240 volts. What is the resistance?
4. A circuit has 470 kΩ and 16 V. What is the current?
5. I = 145 mA, R = 10 MΩ. V = ?
6. In the following circuit calculate current and voltage drops.

R1 = 2 KΩ

R2 = 4 KΩ

VS =

12V

1. In the following circuit, calculate total current and total resistance.



|  |  |  |  |
| --- | --- | --- | --- |
|  | R1 = | R2 = |  |
| VS = | 2kΩ | 4kΩ |  |
|  |  |  |
| 18V |  |  |  |

1. In the following circuit, what is R1? R1



R2 = 4 KΩ

|  |  |  |
| --- | --- | --- |
| VS = | I = 1 mA |  |
| 12V |  |
|  |  |

1. A power supply consumes 320 mW in order to supply 288 mW to the load. What is the efficiency?
2. What is R2 in the following circuit?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | IT = 12 mA |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | R1 = |  | R2 =? |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| VS = |  |  |  |  | 2kΩ |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| 18V |  |  |  |  |  |  |  |  |