**Series Circuits Problem Solving**

**Find all values – Show all calculations – Use units everywhere!**

**The Queen of All Formulae Rules for Series Circuits**

**V = IR VT = V1 + V2 + V3**

**IT = I1 = I2 = I3**

**RT = R1 + R2 + R3**

**1.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Voltage** |  | **Current** |  | **Resistance** |  |
| **V1** |  | **I1** |  | **R1** |  |
| **V2** |  | **I2** |  | **R2** |  |
| **VT** |  | **IT** |  | **RT** |  |

|  |  |
| --- | --- |
| **I cannot use Ohm’s Law i.e. I cannot use:**  **V = IR.**  **I do not have 2 variables that match up.** | **But I can…**  **1)**  **Box off as you obtain a new piece of information.** |
| **2) Now I can…** | **3) and because it is series…** |
| **4) Now I can…** | **And…** |
| **OR…** |  |

**2.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Voltage** |  | **Current** |  | **Resistance** |  |
| **V1** |  | **I1** |  | **R1** |  |
| **V2** |  | **I2** |  | **R2** |  |
| **VT** |  | **IT** |  | **RT** |  |

|  |  |
| --- | --- |
| **1) Because it is a series circuit…**  **IT = I1 = I2** | **2) and…**  **VT = V1 + V2…** |
| **2) Now I can…**  **V = IR** | **and** |
| **3) So I can…** | **OR…** |

**Practice Question**