**YOU HAVE TO SHOW ALL WORK IN ORDER TO RECEIVE FULL CREDIT**

**Note: All answer must be in engineering notation rounded off to the hundredth**

1. **Find the total resistance RT of a given circuit (7 points)**



1. **for the series configuration circuit**

**a. Find the total resistance (6 points)**

**b. Calculate the source current (3 points)**

**c. Find the voltage across each resistor (6 points)**

**d. Calculate the power dissipated by the source (3 points)**

**e. Calculate the power dissipated by each resistor (6 points)**



1. **Find the voltage source value, E, that will result in the given current (9 points)**



1. **Using the provided information, find the unknown quantities for E, V1, V2, V3, and R (12 points)**



1. **Find the unknown values for E, R1, and R2 using the information provided in the circuit (12 points)**



1. **Find the value of the unknown resistance R and the voltage source E using the given conditions (12 points)**



1. **For the following circuits, determined the current direction and value of the circuit, and the voltage drop through each resistor with their respective voltage polarities (12 points each)**

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So the current flow is counter−clockwise. The current is 388.35mA. the voltage for 4.7Ω is 1.83V and the voltage for 5.6Ω is 2.17V, their voltage polarities from counter-clockwise both are negative to positive.

1. Assumed the current flow is counter-clockwise,

As a result, the current flow is counter-clockwise. The current is 521.74mA. the voltage for 4.7Ω is 2.45V, the voltage for 1.2Ω is 626.09mV and the voltage for 5.6Ω is 2.92V. All of the voltage polarities of the resistors from counter-clockwise are negative to positive.