▶ **TASK** Demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity (Ohm's Law).

MLR **AST** **MAST**
6A2 **6A2** **6A2**

Time off_____

Time on_____

Total time_____

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> **NOTE** Use Ohm's Law to solve the circuit information in this task.

1. Series Circuit: Circuit Voltage = 12 volts, R1 = 3 ohms, R2 = 9 ohms

    a. **Draw this circuit in the space below:**

    b. **Total circuit resistance:** _____ **ohms**
    c. **Total circuit current flow:** _____ **amps**
    d. **Voltage drop across R1:** _____ **volts**
    e. **Voltage drop across R2:** _____ **volts**
    f. **Current flow through R1:** _____ **amps**
    g. **Current flow through R2:** _____ **amps**

2. Parallel Circuit: Circuit voltage = 12 volts and Branch 1, R1 = 2 ohms and Branch 2, R2 = 4 ohms

    a. **Draw this circuit in the space below:**

    b. **Total circuit resistance:** _____ **ohms**
       (Hint: Rt = R1 x R2/R1 + R2)
    c. **Total circuit current flow:** _____ **amps**
    d. **Voltage drop across R1:** _____ **volts**
    e. **Voltage drop across R2:** _____ **volts**
    f. **Current flow through R1:** _____ **amps**
    g. **Current flow through R2:** _____ **amps**

3. Series-Parallel Circuit: Circuit voltage = 12 volts, R1 = 2 ohms is in series with the parallel circuit of R2 = 3 ohms and R3 = 3 ohms

    a. Draw this circuit in the space below:

    b. Total resistance of the parallel circuit: _____ **ohms**

    c. Total circuit resistance: _____ **ohms**

    d. Total circuit current flow: _____ **amps**

    e. Voltage drop across R1: _____ **volts**

    f. Voltage drop across R2 and R3: _____ **volts**

    g. Current flow through R2: _____ **amps**

    h. Current flow through R3: _____ **amps**

4. Have your supervisor/instructor verify satisfactory completion of this procedure, any observations found, and any necessary action(s) recommended.

Performance Rating

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0	1	2	3	4

Supervisor/instructor signature _____ Date _____