

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

MAST
6A2

CDX Tasksheet Number: C951

Time off _____

Time on _____

Total time _____

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: $R_t = R_1 \times R_2 / R_1 + R_2$)
- 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

CDX Tasksheet Number: C951

0

1

2

3

4

Supervisor/instructor signature _____ Date _____