

Student Activity Sheet 1-3

Ohm's Law Practice

Name _____ Score _____
 Date _____ Class/Period/Instructor _____

The only way to master Ohm's law is with practice. The following problems are simple to solve. The challenge of this exercise is to become familiar with how voltage, current, or resistance can be solved for when two factors are known. All three forms of the Ohm's law formula are provided below.

$E = I \times R$ Used to find *voltage* (E) when current (I) and resistance (R) are known.
 $R = E/I$ Used to find *resistance* (R) when voltage (E) and current (I) are known.
 $I = E/R$ Used to find *current* (I) when voltage (E) and resistance (R) are known.

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|-----------------|------------|------------|
| 1. _____ volts | 2 amperes | 5 ohms |
| 2. _____ ohms | 6 volts | 3 amps |
| 3. _____ amps | 12 volts | 2 ohms |
| 4. _____ ohms | 12 volts | 5 amps |
| 5. _____ volts | 5 amps | 10 ohms |
| 6. _____ amps | 10 ohms | 24 volts |
| 7. _____ ohms | 5 amps | 6 volts |
| 8. _____ volts | 0.25 amps | 12 ohms |
| 9. _____ ohms | 1.5 amps | 6 volts |
| 10. _____ amps | 100 ohms | 12 volts |
| 11. _____ volts | 25 ohms | 3 amps |
| 12. _____ volts | 0.06 amps | 1200 ohms |
| 13. _____ volts | 0.01 amps | 122 ohms |
| 14. _____ ohms | 0.005 amps | 6 volts |
| 15. _____ volts | 1800 ohms | 0.05 amps |
| 16. _____ volts | 1400 ohms | 0.007 amps |
| 17. _____ amps | 18 volts | 3600 ohms |
| 18. _____ amps | 24 volts | 600 ohms |
| 19. _____ amps | 12 volts | 1200 ohms |
| 20. _____ volts | 16 ohms | 2 amps |

Student Activity Sheet 1-4

Common Electrical Terms and Symbols

Name _____ Score _____

Date _____ Class/Period/Instructor _____

In this exercise, you will become familiar with the common terms and symbols associated with basic electrical theory. This exercise also provides you with more practice using Ohm's law. The following electrical terms and symbols are used to describe electrical circuit action.

Voltage	<i>E, V</i> , volts, electrical pressure, electromotive force (emf), potential
Current	<i>I, A</i> , amperes, amps, electron flow
Resistance	<i>R, Ω</i> , ohms

Relate the terms and symbols to Ohm's law, and solve for the unknown values. Formulas for Ohm's law can be found on the previous Student Activity Sheet or in the textbook.

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|---------------------|-------------|---------------|
| 1. _____ volts | 3 Ω | 5 A |
| 2. _____ Ω | 12 <i>E</i> | 6 A |
| 3. _____ A | 6 emf | 24 Ω |
| 4. _____ potential | 20 <i>R</i> | 2 A |
| 5. _____ resistance | 0.25 A | 12 V |
| 6. _____ amperes | 100 Ω | 24 <i>E</i> |
| 7. _____ <i>E</i> | 1000 Ω | 0.01 A |
| 8. _____ ohms | 18 V | 0.025 amperes |
| 9. _____ V | 2200 Ω | 0.05 <i>I</i> |
| 10. _____ <i>I</i> | 6 volts | 100 ohms |