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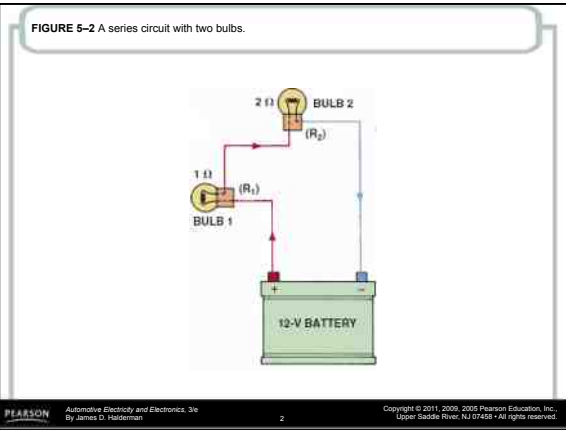
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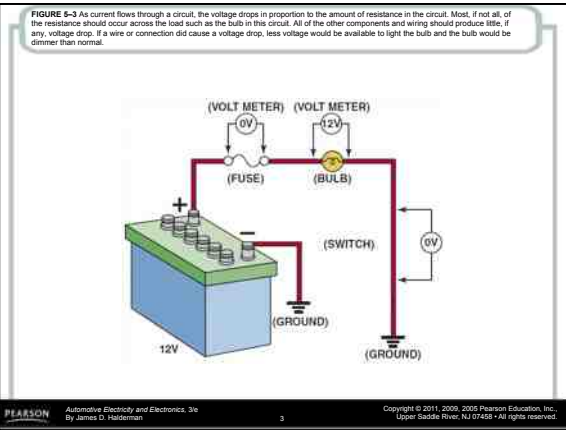
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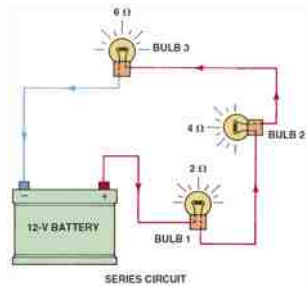
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**FIGURE 5-4** In a series circuit, the voltage is dropped or lowered by each resistance in the circuit. The higher the resistance is, the greater the drop in voltage.




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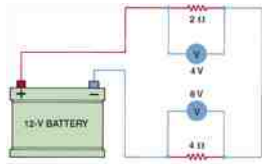
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**FIGURE 5-5** A voltmeter reads the differences of voltage between the test leads. The voltage read across a resistance is the voltage drop that occurs when current flows through a resistance. A voltage drop is also called an "IR" drop because it is calculated by multiplying the current (I) through the resistance (electrical load) by the value of the resistance (R).



- A.  $I = E/R$  (TOTAL "R" = 6 Ω)  
 $= 12/6 = 2A$
- B.  $E = IR$  (VOLTAGE DROP)  
AT 2 Ω RESISTANCE =  
 $E = 2 \times 2 = 4V$   
AT 4 Ω RESISTANCE =  
 $E = 2 \times 4 = 8V$
- C.  $4 + 8 = 12V$   
SUM OF VOLTAGE DROP  
EQUALS APPLIED VOLTAGE

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**FIGURE 5-6** In this series circuit with a 2 ohm resistor and a 4 ohm resistor, current (2 amperes) is the same throughout, even though the voltage drops across each resistor are different.




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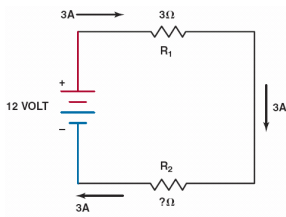
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FIGURE 5-7 Example 1.



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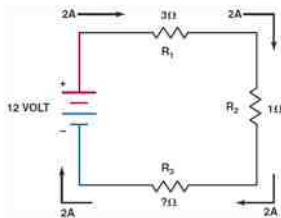
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FIGURE 5-8 Example 2.



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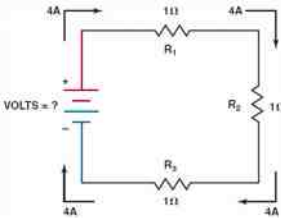
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FIGURE 5-9 Example 3.



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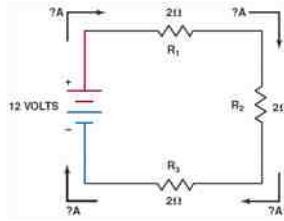
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FIGURE 5-10 Example 4.



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