

**Reflection and Self-Assessment****Part 1:** Circle the statement that best describes how you completed the practice:

- I answered all questions without using the online solutions. I checked my answers against the key at the back of the practice and was able to determine my mistakes and correct them without referring to the online solutions.
- I answered most questions correctly without using the online solutions. I used the online solutions to help me with some questions and was able, with help from the online solutions, to understand every question and answer them correctly.
- I used the online solutions to help me with most of the questions. I was able, with help from the online solutions, to understand each question and answer them correctly.
- Even using the online solutions, I was not able to fully understand the solution to some problems. The questions I had trouble with were:

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- I did not attempt all the questions on the practice.

**Part 2:** Circle the statement that best describes your confidence in answering questions of this type in the future.

- I am confident I can answer nearly any question of this type correctly without using notes or other assistance.
- I am confident I can answer **MOST** questions of this type correctly without using notes or other assistance.
- I am **NOT** confident I can answer most questions of this type correctly without using notes or other assistance.

**Part 3:** Circle the statement below that best describes the total amount of time you spent actively working on this practice:

Less than an hour	Between one and two hours	Between two and three hours	Between three and four hours	More than four hours
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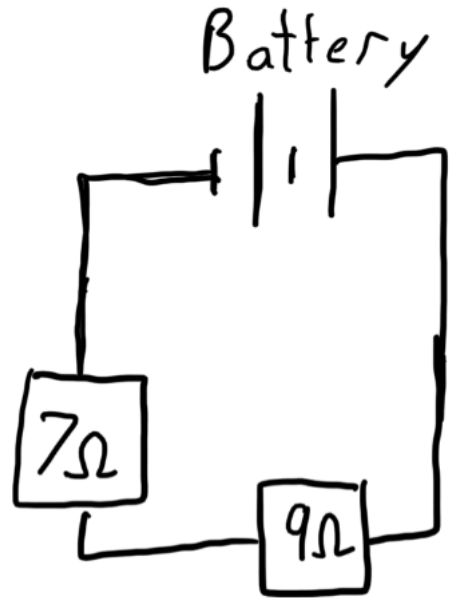
1. A battery has two terminals, a negative and a positive, they are connected with a wire. What type of particles will flow through the wire and which direction will they go?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
2. A charge of 1800 coulombs was passed through a wire in 2.0 minutes. What was the average current in that interval?
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
3. A steady current of 0.50 A flows through a wire. How many electrons pass through a point in the wire each second?

4. A current of 3.60 A flows for 15.3 s through a conductor. Calculate the number of electrons that pass through a point in the conductor in this time.
5. How long would it take  $2.0 \times 10^{20}$  electrons to pass through a point in a conductor if the current was 10.0 A?
6. A current of 2.0 A flows through a  $28 \Omega$  load. What is the potential difference (voltage) across the load?



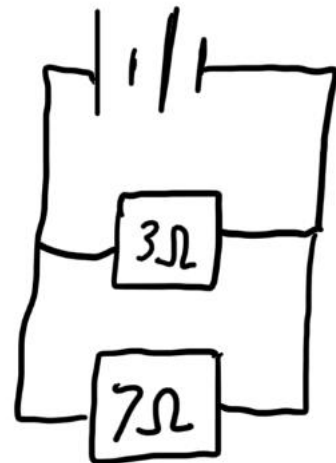
10. A battery is connected to a  $7.0\ \Omega$  and  $9.0\ \Omega$  load in series. The current through the whole circuit is 1.3 amps.

- What is the potential difference across the  $9\ \Omega$  load?
- What is the potential difference across the  $7\ \Omega$  load?



11. A battery is connected to a  $3.0\ \text{ohm}$ , and a  $7.0\ \text{ohm}$  load in parallel. The voltage across each load is 5.9 volts.

- What is the current passing through the  $3\ \text{ohm}$  load?
- What is the current passing through the  $7\ \text{ohm}$  load?



12. A 25 watt lightbulb is connected to a 120 volt power source. What current passes through the lightbulb?

13. A current of 5.0 A passes through a load which is drawing 150 watts of power. What is the potential difference across the load?

14. A 1600 watt appliance is connected to a 120 volt power source, how much current is it drawing?

15. A microwave connected to 120 V power source draws 9.2 amps of power.

a. How much power does it draw?

b. How much energy in joules does it use in 15 seconds?

16. An electric motor is connected to 240 volt power source, it draws 4.5 amps of current. How fast will the motor be able to lift a 500.0 kg object if it is 100% efficient?

17. An electric heating element has a resistance of  $85\Omega$ , it is connected to a 6.0V battery.

a. What current passes through the heating element?

b. What is the power the heating element is drawing?

c. How much energy does the element use in 25 seconds?



<b>Answer Key</b>				
1) Electrons, negative to positive	2) 15 A	3) $3.1 \times 10^{18}$ electrons per second	4) $3.4 \times 10^{20}$ electrons	5) 3.2 seconds
6) 56 V	7) $2.0 \times 10^1 \Omega$	8) 0.48 A	9a) 0.18 A	9b) 0.090 A
10a) 12V	10b) 9.1V	11a) 2.0 A	11b) 0.84 A	12) 0.21 A
13) $3.0 \times 10^1$ V	14) 13 A	15a) 1100 watts	15b) 17000 J	16) 0.22 m/s
17a) 0.071 amps	17b) 0.42 watts	17c) 11 J		