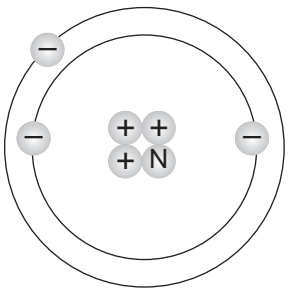
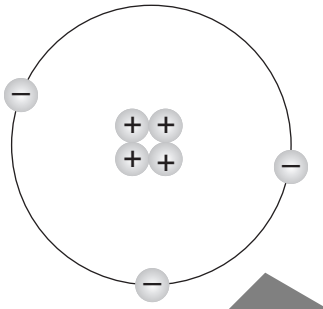
8.3B; 8.5A (M)

1. Look at the Periodic Table on page 4. Based on information in the table, which diagram best shows one helium atom?

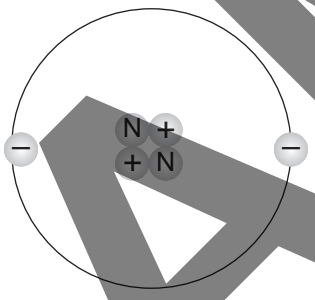
A



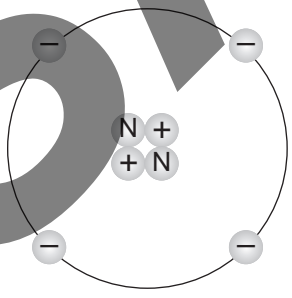
B



C



D



8.5B (M)

2. Describe the properties of an element.

For each blank, write the correct answer from the options below to complete the sentence. Not all answers will be used.

chemical reaction physical change

stable electrons valence electrons

In an atom, _____ are electrons that can be gained or lost in a _____.

Use the Periodic Table on page 4 to answer questions 3–4.

8.5C (H)

3. Which two elements in the Periodic Table have the same number of electrons in their outer orbitals?

Select **TWO** correct answers.

- ☐ Fluorine
- ☐ Lithium
- ☐ Magnesium
- ☐ Neon
- ☐ Sodium

8.5C (H)

4. An element in the Periodic Table has three orbitals in its electron cloud and two electrons in the outer orbital. What element is this?

A Boron
B Calcium
C Lithium
D Magnesium

6.6A (M)

1. Use the Periodic Table on page 4 to answer the following question. This question has two parts. First, answer Part A. Then, answer Part B.

Part A

Which of the following elements should be the best conductor of electricity?

A Argon
B Bromine
C Lithium
D Radon

Part B

Which statement supports the answer to Part A?

A Protons are able to move freely in order to conduct electricity.
B Electrons are able to move freely in order to conduct electricity.
C The element is able to conduct electricity because there are no free protons.
D The element is able to conduct electricity because there are no free electrons.

8.5E (M)

2. Which of the following is an example of a chemical change?

A Cracking an egg
B Baking bread or cookies
C Cutting paper to wrap a gift
D Hammering a nail into wood

6.6A (M)

3. Which of the following is **NOT** a physical property of metals?

A Low density
B Shiny appearance
C High melting point
D Good conductors of heat

8.5D (M)

4. Ammonium sulfate, $(NH_4)_2SO_4$, is commonly used in fertilizers. How many hydrogen atoms are represented in the formula for ammonium sulfate?

A 2
B 4
C 6
D 8

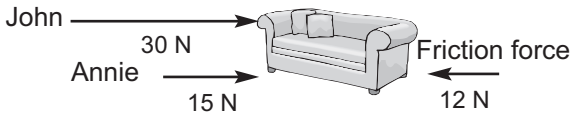
6.6B (M)

5. A science teacher asked her students to calculate the density of a toy block. The mass of the block was 110 grams. The volume of the block was 8 cubic centimeters. What was the density of the block, expressed in grams per cubic centimeter?

Record your answer in the space provided.

8.3B; 8.6A (M)

1. The diagram below shows forces acting on a couch as it is moved across a room.



What is the net force, in newtons, applied to the couch?

Record your answer in the space provided.

8.6C (M)

2. Donna slid her textbook across a table to her friend. The book stopped about halfway across the table. Which of the following best explains why the book stopped moving?

A The book's mass slowed the book to a stop.

B The force of friction caused the book to stop.

C The force of gravity pulled down on the book.

D The upward force of the table stopped the book.

8.6C (L)

3. Alex wants to test the four bowling balls shown below. Each bowling ball is a different color and has a different mass.

Alex throws each bowling ball with the same net force. What is the order of the bowling bowls from the greatest acceleration to the least acceleration?

Complete the list by writing the correct answer from the options below in each blank.

Blue Black Green Red

Greatest Acceleration

_____

_____

_____

_____

Least Acceleration

6.9C (M)

4. Which of the following energy transformations occurs when someone watches a television program?

A Electrical energy is converted into light and sound energy.

B Chemical energy is converted into light and sound energy.

C Heat energy is converted into light and mechanical energy.

D Electrical energy is converted into mechanical and light energy.

8.7A (L)

1. Which of the following provides the definition of one day on Earth?

A Equal periods of daylight and darkness on Earth

B The time needed for Earth to rotate once on its axis

C The period of time that Earth is tilted toward the Sun

D The time needed for Earth to revolve once around the Sun

8.7B (M)

2. Which of the following best describes the positions of Earth, the Moon, and the Sun during the full-moon phase?

A The Sun and Moon form a 45° angle with Earth.

B The Sun and Moon form a 90° angle with Earth.

C Earth is located directly between the Moon and the Sun.

D The Moon is located directly between Earth and the Sun.

8.8A (M)

3. Which statements about comets are correct?

Select **TWO** correct answers.

☐ All comets originate in the Oort cloud.

☐ Comets orbit the Sun in elliptical orbits.

☐ Comets are made entirely of space dust.

☐ All comets orbit the Sun in 76-year cycles.

☐ Comets are composed of dust, rock, and ices.

8.8C (M)

4. Scientists use a spectroscope to measure the bands of light or radiation produced by an object in the universe. The most important use of a spectroscope is to determine an object's—

A physical characteristics

B position in the universe

C movement through space

D primary colors and shapes

6.11B (H)

5. The Sun is only an average-sized star when compared to other stars in the universe. However, for Earth and other planets in the solar system, the Sun is very important. Why is the Sun a critical part of the solar system? Provide a description with your answer.

Think about the question carefully. Then, record your answer in the box provided.

