



Name \_\_\_\_\_

## Author's Viewpoint

Read the passage. Then read each question and fill in the circle next to the best answer.

### Sybil Ludington

On a cold night in 1777, two thousand British soldiers attacked the town of Danbury, Connecticut. Danbury was very important to the colonial army because it was a storage place for food, clothing, and medicine. Unfortunately, only 150 colonial soldiers were available to defend the town. The small army needed help!

A messenger quickly left on horseback to ask Colonel Henry

Ludington to bring more troops. However, when the rider arrived at Ludington's farm, he learned that Ludington's men had gone home.

Who could round up the soldiers in the dead of night? Ludington thought of his 16-year-old daughter, Sybil. He knew she could do this dangerous job. In an instant, Sybil saddled her horse Star and rode into the frozen dark. She bravely galloped from farm to farm. She followed twisting, muddy roads across the countryside. Along the way, she shouted the news of the attack. She warned families to be ready to flee if the British should come their way.

Sybil arrived home early the next morning. When she got there she saw more than 400 men preparing to leave for the twenty-five-mile journey to Danbury. Colonel Ludington was very grateful that she had helped.

Today, people remember Sybil's courageous ride. A statue of Sybil and Star stands in the town of Carmel, Connecticut. Sybil has also been honored by having her picture on a postage stamp.



1. What is the author's viewpoint in this article?

- ☐ A. Sybil's ride was the most important event in the American Revolution.
- ☐ B. Ludington's soldiers should have been ready for battle.
- ☐ C. Sybil was too young to make such a dangerous ride.
- ☐ D. Sybil Ludington's bravery helped the colonial soldiers.

2. Which statement reflects the author's opinion?

- ☐ F. Sybil Ludington was a very brave girl.
- ☐ G. Danbury was a storage place for food, clothing, and medicine.
- ☐ H. More than 400 men went to help the troops in Danbury.
- ☐ J. A statue of Sybil and Star stands in the town of Carmel.

3. How do you know that the following statement is a fact, and not the author's viewpoint?

*On a cold night in 1777, two thousand British soldiers attacked the town of Danbury, Connecticut.*

- ☐ A. The author is reliable.
- ☐ B. The statement can be proven.
- ☐ C. Detailed information is given.
- ☐ D. The statement is easy to believe.

4. Why did the author most likely write this article?

- ☐ F. to entertain the reader with a story about a girl and a horse
- ☐ G. to inform the reader about events during the colonial period
- ☐ H. to describe the Connecticut countryside
- ☐ J. to persuade the reader to visit the statue of Sybil

5. Which of these phrases shows that the author respects Sybil Ludington?

- ☐ A. shouted the news
- ☐ B. muddy roads
- ☐ C. dangerous job
- ☐ D. twenty-five-mile journey

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(RI.6.6)

Toliver-Day 7



Name \_\_\_\_\_

Greek & Latin Roots

TDIVER: L.L.440

Day 7

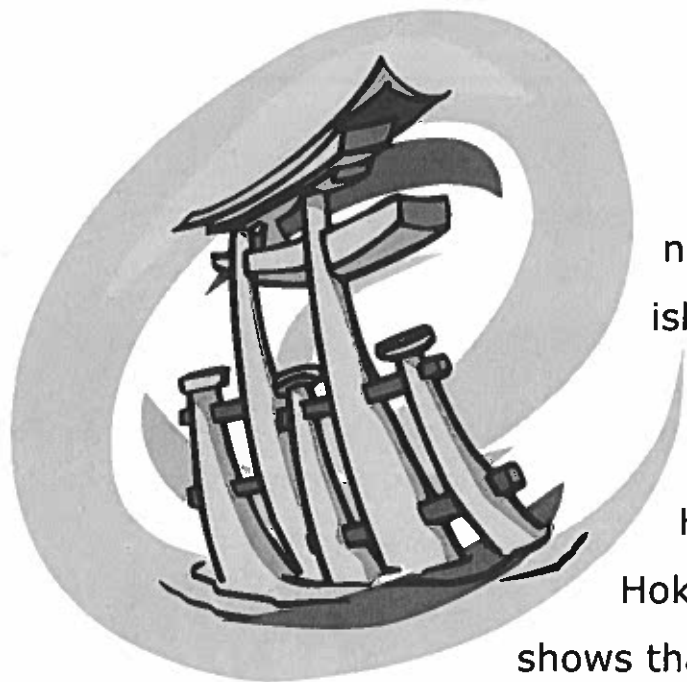
## Prefixes *re-*, *mis-*, *ex-*

Choose the correct meaning for each underlined word.

Fill in the circle next to the best answer.

1. Kim feared she would misspell her next word.
  - ☐ A. spell quickly
  - ☐ B. spell again
  - ☐ C. spell wrong
  - ☐ D. spell carefully
2. Kim slowly exhaled and spelled the word.
  - ☐ F. breathed out
  - ☐ G. breathed back
  - ☐ H. breathed again
  - ☐ J. breathed badly
3. She reminded herself to take a deep breath.
  - ☐ A. put out of the mind
  - ☐ B. put into mind again
  - ☐ C. did not mind
  - ☐ D. used the mind
4. "What if I mispronounce the word?" she worried.
  - ☐ F. pronounce incorrectly
  - ☐ G. pronounce again
  - ☐ H. pronounce correctly
  - ☐ J. try to pronounce
5. "You've won the spelling bee!" the judge exclaimed.
  - ☐ A. cried quickly
  - ☐ B. cried badly
  - ☐ C. cried again
  - ☐ D. cried out





### **Ancient Japan**

Modern Japan is an island nation composed of about 3,000 islands with 600 being inhabited.

Almost all the population lives on the four main islands of Honshu, Kyushu, Shikoku, and Hokkaido. The archaeological record

shows that the first civilization on the Japanese islands began around 30,000 BCE. At that time the land of Japan was still connected to the Asian continent. The Japanese islands formed about 11,000 BCE, after the last ice age

Some of the oldest pottery in the world comes from ancient Japan. Since these ancient Japanese people were isolated on islands, their civilization did not progress along with neighboring civilizations like China on the Asian mainland. Around 300 BCE ancient people from Korea, also on the Asian mainland, invaded the Japanese islands, bringing with them cultural advances such as agriculture and metal-working. Historians do not know whether the immigrants replaced or mixed in with the native people but historians mark the time period of 300 BCE as the beginning of Japanese culture.

The first Japanese people lived in clans, each with its own leader and god that represented a force of nature. Around 200

CE the first organized state appeared in Japan in an area on the Yamato peninsula on the island of Honshu, close to the Chinese mainland. This civilization is known as the Kofun. The rulers of the Kofun period built huge, elaborate burial mounds that still stand. In the sixth century Japanese leaders interacted with Korea and China, bringing artists and craftsmen to the islands. The Japanese also imported writing and the religions of Buddhism and Confucianism about this time.

In 604 CE the Japanese Prince Shotoku adopted a constitution for Japan based upon the Chinese style of government. The document is called the Seventeen Article Constitution. The goal of the constitution was to unify the clans in Japan and create a single government for the islands. The Japanese constitution includes the belief of the Confucian religion that the universe is composed of three realms: Heaven, Man, and Earth and established the emperor as the supreme leader of Japan. The emperor is placed in charge of Man by the power of Heaven. The Japanese emperor remained the political leader of Japan until the end of World War II in 1945.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Multiple Choice Questions

Circle the correct answer.

1. The islands of Japan are part of which continent?
  - a. North America
  - b. South America
  - c. Europe
  - d. Asia
2. The Japanese islands formed due to
  - a. An earthquake
  - b. A volcanic eruption
  - c. The last ice age
  - d. A tsunami
3. Ancient Japanese culture changed when the islands were invaded by people from
  - a. China
  - b. Korea
  - c. Vietnam
  - d. Indonesia
4. A main religion in ancient Japan was
  - a. Buddhism
  - b. Hinduism
  - c. Jainism
  - d. All of the above
5. The Kofun era in ancient Japanese history is characterized by burial
  - a. Pyramids
  - b. Chambers
  - c. Mounds
  - d. Vaults
6. The Japanese Seventeen Article Constitution established the Japanese
  - a. President
  - b. King
  - c. Prime Minister
  - d. Emperor

AnswersUse  $>$ ,  $<$  or  $=$  to compare.

$-96$  \_\_\_\_\_  $99$

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$-82$  \_\_\_\_\_  $85$

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1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

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10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

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14. \_\_\_\_\_

15. \_\_\_\_\_

16. \_\_\_\_\_

17. \_\_\_\_\_

18. \_\_\_\_\_

19. \_\_\_\_\_

20. \_\_\_\_\_

## Lesson 4.1

## The Restless Continents

**ridge:** a line of hills or mountains

**magma:** rock from deep inside Earth that has turned to liquid because of high temperatures and pressure

**boundaries:** dividing lines or borders between two areas

**lithosphere:** the layer of Earth's structure that is broken into tectonic plates; it sits on a layer of molten, or melted, rock that allows the plates to move

**mantle:** the largest of the three major layers that make up Earth's structure; the other two layers are the crust and the core

Most volcanoes are located where plates meet because magma has the best chance of reaching Earth's surface through these cracks in the crust.

Tectonic plates move very slowly—only a few centimeters per year. Over a period of 130 million years, though, the Atlantic Ocean was formed as the Americas slowly moved away from Europe and Africa.

*How were Wegener's ideas about continental drift proven correct?*

When Alfred Wegener introduced his idea of continental drift in 1915, he was met with ridicule. Scientists didn't believe something as massive as a continent could move around Earth's surface. Even if continents could move, they asked, how did it happen? Wegener admitted he didn't have the answer.

Then, in the 1950s, scientists used new technologies to map the ocean floor. They soon discovered a gigantic, undersea mountain range in the Atlantic Ocean. It stretched almost the entire length from the North to the South Poles. They named it the *Mid-Atlantic Ridge*.

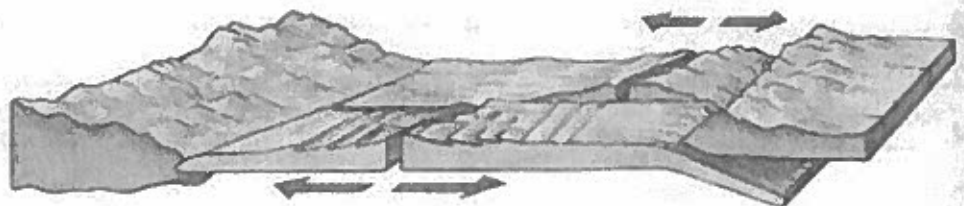
Scientists learned that this **ridge** formed—and was still growing—because **magma** rose through a crack in Earth's surface and then cooled. As the ridge grew wider, it pushed Earth's crust away in opposite directions—a process called *seafloor spreading*. Scientists had just discovered one of the many **boundaries** between Earth's plates. By the 1960s, more of these boundaries had been discovered, and the theory of plate tectonics was born.

Earth's **lithosphere**—a layer that includes the crust and the upper part of the **mantle**—is broken into several large sections, called *plates*. Because Earth's surface isn't solid, magma rises to the surface in the cracks between plates. Wherever the rising magma causes seafloor spreading, the plates are pushed away from each other. Wegener didn't live to see it, but this process answered the question of how Earth's continents moved.

Wegener's theory of continental drift wasn't exactly right, though. The continents move, but a continent is just one part of a much larger plate—the part that rises above sea level.

Earth's plates are packed tightly together. Whenever two plates are pushed away from each other, their edges press against the edges of other plates. In some places, plates push directly against each other, and the land buckles and rises at the edges to form mountains. In other places, the edge of one plate is driven underneath the other plate. This is called *subduction*.

Wherever plates meet, there's a good chance for geological activity. This is because plates don't slide smoothly past each other. Instead, friction causes pressure to build as the plates try to move. After enough pressure has been created, the plates will break free and move in one sudden motion. This powerful movement is felt on Earth's surface as an earthquake.





Circle the letter of the best answer to each question below.

1. What is magma?
  - a. rocks found in Earth's crust
  - b. liquid rock formed deep below Earth's surface
  - c. the largest type of tectonic plate
  - d. a mountain range found deep under the ocean
2. Seafloor spreading causes the surrounding plates to
  - a. move away from each other.
  - b. crash into each other.
  - c. slide along next to each other.
  - d. break up into smaller plates.

Write your answers on the lines below.

3. Explain why the discovery of how the Mid-Atlantic Ridge formed was important to developing the theory of plate tectonics.

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4. Wegener thought continents drifted through the oceans. Why is this idea incorrect?

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5. What part of Wegener's theory of continental drift was correct?

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### Unifying Concepts and Processes

Review the definitions of potential and kinetic energy from the previous chapter. Explain the role each type of energy plays in the cause and occurrence of earthquakes.

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Name \_\_\_\_\_

Toliver-Day8

(L.6.5b)

## Vocabulary Synonyms

Read each sentence. Choose the word that means the same as the underlined word. Fill in the circle next to the best answer.

1. The old trunk was cherished by the family.  
☐ A. opened  
☐ B. moved  
☐ C. stored  
☐ D. loved
2. Mrs. Harrison kept cloth in the trunk.  
☐ F. clothes  
☐ G. fabric  
☐ H. books  
☐ J. odds and ends
3. Like the furnishings in the house, the trunk was plain.  
☐ A. simple  
☐ B. heavy  
☐ C. fancy  
☐ D. broken
4. The British soldiers pushed past the woman into the house.  
☐ F. rolled  
☐ G. skipped  
☐ H. strolled  
☐ J. shoved
5. She grew uneasy when the soldiers opened the trunk.  
☐ A. difficult  
☐ B. angry  
☐ C. nervous  
☐ D. cautious



Name \_\_\_\_\_

Greek & Latin Roots

~~TO LIVE L.L. 40~~  
**Prefixes pre-, con-, com-**

**Day 8**

Choose the correct meaning for each underlined word.  
Fill in the circle next to the best answer.

1. The Actors' Club will have a preview of the new play.
  - ☐ A. a showing before others see it
  - ☐ B. a showing after others see it
  - ☐ C. a showing with others
  - ☐ D. a showing apart from others
2. Should they combine the play with a musical show?
  - ☐ F. put under
  - ☐ G. put over
  - ☐ H. put together
  - ☐ J. put into
3. They formed a committee to solve the problem.
  - ☐ A. person in charge of a group
  - ☐ B. group members working apart
  - ☐ C. member of a group
  - ☐ D. group that works together
4. The actors will concentrate on remembering their lines.
  - ☐ F. let go of their attention
  - ☐ G. bring together their attention
  - ☐ H. ask to pay attention
  - ☐ J. pay attention later
5. Can they predict how many people will come to the play?
  - ☐ A. know afterwards
  - ☐ B. know during
  - ☐ C. know later
  - ☐ D. know before





## Ancient Japan

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

**Short Answer Questions**

(choose 2 of them & answer those 2)

1. Explain why in its earliest days the culture of Japan did not keep pace with its neighbors like Korea and China.

2. Name the four islands of Japan and locate them on a map of the world.

~~3. Do some research and write a short report about the Kofun burial mounds. Include pictures with your report.~~

~~4. What is the Seventeen Article Constitution of Japan and why is it important?~~

5. List types of Japanese food that are popular in the United States.

~~6. Calligraphy was introduced to Japan in the seventh century CE. What is calligraphy? Find some Japanese calligraphy symbols and make your own copies of them.~~

7. Poetry is important in Japanese culture. One form of Japanese poetry is haiku. What is haiku? Write your own haiku poem.

## Lesson 4.2

## Carving Out the Grand Canyon

**erosion:** the movement of rock and soil by natural means, such as wind and rain

**sediments:** soil or other matter that has settled at the bottom of a liquid

**plateau:** a high flat land; tableland; also called a *mesa* in Spanish

**strata:** layers

**marine:** of the sea

**iron oxide:** iron that has reacted chemically with oxygen, better known as *rust*

Arizona is very dry, and much of the land there is desert, so how does erosion occur? The rain that does fall comes in big, powerful storms that dump a lot of water onto the land at once. Desert plants have short roots that help them absorb this water as it floods the desert's surface, but these shallow roots don't hold the soil in place. The rushing water carries some of the desert away with it.

*How did a river form one of the biggest canyons in the world?*

The Grand Canyon is one of America's most famous landmarks. This enormous canyon stretches for 277 miles through northwest Arizona and is nearly a mile deep in most parts. The colorful layers of rock that line the canyon walls were exposed by the Colorado River as it carved out the canyon over a period of millions of years. This mighty river still flows through the bottom of the canyon today.

About 60 million years ago, movement of Earth's tectonic plates formed the Rocky Mountains rising to the north of the Grand Canyon. Every spring since then, the mountain snows melt, and water runs downhill in streams and rivers. About six million years ago, **erosion** formed the Colorado River. The river carried its **sediments** downstream, and they wore away at the landscape and slowly dug out the canyon.

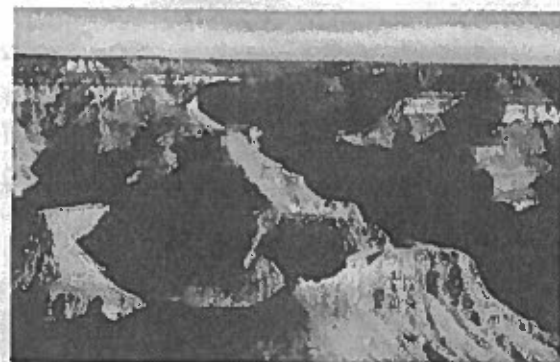
As the river began to carve its path, the land around it was also rising because of movement in Earth's crust. Between five and 10 million years ago, the land west of the Rocky Mountains formed a high, flat area called a **plateau**. This rising land made the river deeper. It also made the Northern Rim of the Grand Canyon more than one thousand feet higher than the Southern Rim.

The Northern Rim is not only higher, but also colder than the Southern Rim. The two sides have very different environments—forests grow to the north, but the south is a desert.

All the water from the north side drains into the canyon. Some flows into cracks in the rocks. In winter, this water freezes and expands, causing rocks to break off and fall into the canyon—another form of erosion.

Over time, the growing canyon exposed about 20 **strata**, or layers, of different colored rock. Each layer was formed by sediment that turned into rock hundreds of millions of years ago. Most of it is **marine** sediment, which tells geologists that the land was once under water. Some of the layers even contain fossils of sea creatures, including sharks and squid.

The red layers in the canyon contain **iron oxide**, and the bottom layer is black rock from about two billion years ago. Scientists think this rock may have once been a mountain range that was even bigger than the Rockies. As old as the Colorado River is, it's quite young compared to the black rocks at the canyon's bottom.





Circle the letter of the best answer to each question below.

1. Over a period of millions of years, erosion caused by the \_\_\_\_\_ carved out the Grand Canyon.
  - a. Arizona River
  - b. Colorado River
  - c. Grand River
  - d. Rocky Mountains
2. Much of the water that flows through the canyon starts as
  - a. sediment.
  - b. erosion.
  - c. snow.
  - d. iron oxide.
3. What did geologists conclude based on the fossils and sediments found in the canyon's different layers of rock?
  - a. The fossils were carried there by the Colorado River.
  - b. The fossils became buried in sediment when the Rocky Mountains formed.
  - c. The Northern Rim is much older than the Southern Rim.
  - d. The area where the Grand Canyon formed used to be undersea.

Write your answers on the lines below.

4. What role did plate tectonics play in forming the Grand Canyon?

\_\_\_\_\_

5. Do you think the Grand Canyon is still growing? Explain your answer.

\_\_\_\_\_

\_\_\_\_\_

### Unifying Concepts and Processes

If the layer of black rocks at the bottom of the Grand Canyon is two billion years old, what does this tell you about how old Earth is?

\_\_\_\_\_

## Answers

1. \_\_\_\_\_

- 2, \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

- 5.

- 6.

- 7.

- 8.

- 9

- 10



Name \_\_\_\_\_

## Cause and Effect

Read the passage. Then read each question and fill in the circle next to the best answer.

### Just Like Father

Jeremy watched as his father poured the British soldier a drink of water. The soldier hurriedly drank the water and left. "A simple 'Thank you' would have been nice," Jeremy thought grumpily.

Jeremy's father owned an inn in Boston. Months earlier, King George had decided to send soldiers from England to the colonies. The king had ordered the colonists to provide the soldiers food and housing. As a result, Jeremy's father worked very hard. In return for this work, he received only a little money from the city.

After the British soldier drank the water, he walked into the street to join his regiment for inspection. Each morning every soldier had to shave, powder his hair with flour, and polish his boots. Soldiers who did not pass inspection were punished.

As the soldier walked along, a colonist ran by shouting angrily. "Go home, Redcoat!" Most colonists hated having British soldiers in their towns. The soldiers' presence made the tension between England and the colonies worse.

The soldier grumbled, "I hate this job! The colonists hate me, and I have to wear this hot and itchy red jacket. For this, I only get paid eight pence a day! I wish I was back in London!"

When the soldier returned to the inn that evening, Jeremy was struck by the very sad expression on the soldier's face. Instead of a soldier in uniform, Jeremy saw a human being with feelings. "Good evening, sir," Jeremy said.

The warm greeting lifted the soldier's spirits. Jeremy and the soldier began to talk. The soldier told Jeremy about the son he had left behind in London. Later, when Jeremy went to bed, he thought about the British soldiers. "They're men struggling to make their way, just like Father," he decided.



1. Why did Jeremy's father provide food and housing for British soldiers?  
☐ A. King George offered to pay him well for several rooms at the inn.  
☐ B. King George ordered the colonists to provide the soldiers room and board.  
☐ C. King George asked all innkeepers in Boston to help the British soldiers.  
☐ D. King George sent Jeremy's father a letter asking him for his help.
2. Why did the colonist shout at the British soldier to go home?  
☐ F. The British soldier didn't thank Jeremy's father for the drink of water.  
☐ G. The British soldier didn't have his boots polished.  
☐ H. The British soldiers' presence made the tensions in Boston worse.  
☐ J. The British soldier didn't like his job.

3. For British soldiers, which was an effect of not passing inspection?

- ☐ A. They were punished.  
☐ B. They were fired.  
☐ C. They were forced to work in an inn.  
☐ D. They had to apologize to a British officer.

4. Which of these was an effect of the conversation between Jeremy and the soldier?

- ☐ F. Jeremy began to hate British soldiers.  
☐ G. Jeremy wanted to become a British soldier.  
☐ H. Jeremy began to understand the British soldiers.  
☐ J. Jeremy became angry with his father.

5. Which of these was a reason that the British soldier did not like his job?

- ☐ A. He did not like being in Boston.  
☐ B. He did not like carrying a gun.  
☐ C. He did not like not going to school.  
☐ D. He did not get much money.

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TO Deliver - Day 9

RL.6.5 Text  
Structure: Cause  
& Effect

Name: \_\_\_\_\_

Greek & Latin Roots

TOLIVER: L. 6. 410

## Vocabulary Dictionary: Suffixes -ful, -less, -ly

Choose the correct meaning for the underlined word.

Fill in the circle next to the best answer.

Day 9

1. People are not always successful at keeping their spirits high.

- ☐ A. without success
- ☐ B. full of success
- ☐ C. lacking success
- ☐ D. nearly having success

2. Sometimes people feel lonely.

- ☐ F. in an alone way
- ☐ G. wanting to be alone
- ☐ H. not alone
- ☐ J. nearly alone

3. Getting a new pet can help them feel cheerful.

- ☐ A. in a cheery way
- ☐ B. needing cheer
- ☐ C. without cheer
- ☐ D. full of cheer

4. Adopting a homeless puppy is a nice thing to do.

- ☐ F. like a home
- ☐ G. without a home
- ☐ H. for a home
- ☐ J. in a home

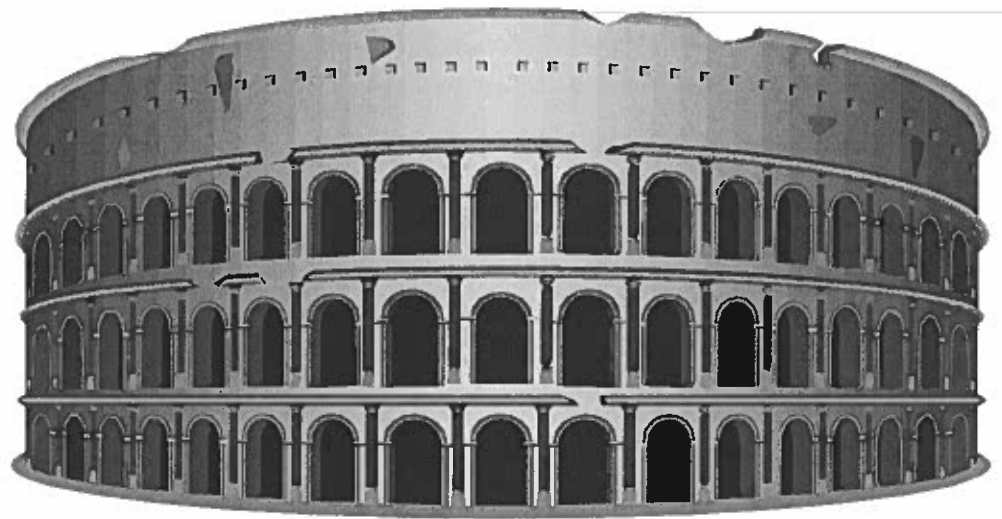
5. A joyful puppy brings fun to any home.

- ☐ A. hardly having joy
- ☐ B. almost having joy
- ☐ C. without joy
- ☐ D. filled with joy



**Ancient Rome**  
Roman  
civilization and  
the Roman  
Empire

controlled much  
of Europe and  
the Mediterranean region for



centuries, from 625 BCE until 476 CE. The Empire began in the west with Britain and Spain to Turkey in the east, southward through Syria and Israel, and along the entire Mediterranean coast of Africa. This vast area now has thirty countries. All of the Roman Empire was ruled from the city of Rome, located in central Italy.

Ancient Roman society had three classes: patricians, plebeians and slaves. Patricians were the descendents of the wealthy families from Rome's earliest days and they formed the upper class. Only patricians could serve in the Roman Senate, the ruling body of Rome. Plebeians were the ordinary citizens of Rome and slaves were captured people who worked in homes or at dangerous jobs.

The Romans acquired new territories by invasion rather than diplomacy. The Roman Army conquered new lands and then remained to control and subdue the people of the conquered land. Once territories were conquered they were

required to pay taxes to Rome. With some of the taxes the Roman Emperors kept Roman citizens fed and entertained at the Colosseum, a giant stadium, to keep peace in the capital.

The Ancient Romans excelled at engineering. The Romans were great road builders, using the roads to link their empire together. Good roads allowed the Roman Army to march into any part of the Empire. The roads were also used to transport goods and people throughout the Empire. Portions of these ancient roads can still be found and now highways take the same routes as the old Roman roads. The Romans built stone bridges and aqueducts to bring water to cities; these structures are still in use because of the strength on the Roman arch. The Ancient Romans also invented the first concrete around 200 BCE.

The Ancient Romans were great admirers of Greek culture and they copied Greek architectural and artistic styles, especially for statues that adored public buildings and squares. The Romans were able to use their arch design and concrete to build magnificent domed structures. A uniquely Roman piece of architecture is the triumphal arch which was built to celebrate great military victories. Some of these triumphal arches remain today.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Multiple Choice Questions

Circle the correct answer.

1. What was the westernmost part of the Roman Empire?
  - a. Italy
  - b. Britain
  - c. Syria
  - d. Turkey
  
2. Which social class in Ancient Rome could serve in the Senate?
  - a. Patricians
  - b. Plebeians
  - c. Slaves
  - d. All of the above
  
3. Ancient Rome acquired new territories by
  - a. Negotiating treaties
  - b. Diplomacy
  - c. Invasion
  - d. All of the above
  
4. Ancient Romans copied the art and architecture of which other ancient culture?
  - a. Greek
  - b. Egyptian
  - c. Turkish
  - d. All of the above
  
5. Ancient Romans excelled at building
  - a. Roads
  - b. Aqueducts
  - c. Arches
  - d. All of the above
  
6. Ancient Romans invented
  - a. Asphalt
  - b. Concrete
  - c. Both a. and b. above
  - d. None of the above

## Lesson 4.4

## A Watery Landscape

**crust:** the outermost of the three layers that make up Earth's structure; the mantle lies below the crust, and the core is at Earth's center

**submarine:**  
underwater

**subduction:** the process by which one plate will be pushed underneath the other plate when two opposing plates meet

**oceanic trenches:** deep areas in the ocean created by subduction

Not all islands are located where plates meet. For example, undersea volcanoes formed the Hawaiian Islands, but they aren't anywhere near the edge of a tectonic plate. These volcanoes are located over vents that feed magma to the surface with enough pressure to break through the plate. The magma still cools when it hits the water, though, and slowly builds a mountain.

Measured from its base on the ocean floor, the Hawaiian mountain Mauna Kea is taller than Mount Everest.

*What does Earth look like deep below the oceans?*

Earth's oceans are deep. On average, the ocean floor is more than two miles below sea level. Eight Empire State Buildings could be stacked on top of each other and still not break the surface. Of course, that depth is just an average. The ocean floor is anything but flat. It rises and falls just like all the land in Earth's crust.

The crust is much thinner under the oceans than it is on land, though. This means magma coming up from Earth's mantle doesn't have far to travel to reach the surface. Undersea mountain ranges, called *mid-ocean ridges*, are formed where magma steadily rises through the spaces between tectonic plates. When the magma emerges, it hits water and quickly cools, adding another layer to the ridge.

Sometimes, the peaks of these mountains rise above the ocean's surface to form islands. For example, the East Pacific Rise is the mid-ocean ridge running off the western coast of South America. Near Ecuador, the peaks are tall enough to poke up out of the waves, and the mountaintops form the Galápagos Islands.

Volcanoes are the most common way that magma reaches Earth's surface. As you might expect, they're usually located at plate boundaries because that's where magma can find its way through the crust. Almost three-quarters of the magma that reaches Earth's surface travels through submarine volcanoes. They usually don't explode like volcanoes on land, though. Deep below the ocean's surface, high pressure is created by the weight of all that water, so magma oozes out of the crust instead.

Earth's mid-ocean ridges form a continuous chain of undersea mountains and volcanoes wrapping around Earth. Imagine the seams on a baseball, and you'll get an idea of how they circle the planet. As the magma flows out, the ridges continue to grow, and they cause seafloor spreading. This process pushes Earth's plates around the planet and into each other.

When tectonic plates are driven into one another, one plate will slide underneath the other. This process, called **subduction**, creates deep **oceanic trenches** where the plates meet. These undersea valleys are the deepest spots in Earth's crust. The Marianas Trench, located south of Japan in the Pacific Ocean, is the deepest on Earth.

The ocean floor there is more than six-and-a-half miles below the surface.



Circle the letter of the best answer to each question below.

1. In places where seafloor spreading is occurring, you would expect to see
  - a. a mid-ocean ridge.
  - b. an oceanic trench.
  - c. volcanoes.
  - d. Both a and c
2. Volcanoes are \_\_\_\_\_ found where two plates meet.
  - a. never
  - b. rarely
  - c. often
  - d. always
3. Earth's crust is \_\_\_\_\_ under the oceans than it is on land.
  - a. thicker
  - b. thinner
  - c. more solid
  - d. Both a and c

Write your answers on the lines below.

4. Explain why submarine volcanoes seldom erupt with an explosion.

\_\_\_\_\_

5. Where are oceanic trenches located? Be specific.

\_\_\_\_\_

\_\_\_\_\_

6. Mauna Kea rises about 14,000 feet above sea level, but Mount Everest rises about 29,000 feet above sea level. Why does the author say that Mauna Kea could actually be considered the tallest mountain on Earth?

\_\_\_\_\_

## Answers

$3^5$

$7^2$

$3^2$

$4^5$

$9^3$

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

$$) 4^2$$

$$) \ 9^2$$

$$) 3^3$$

$$) 2^3$$

$\cdot 9^3$

9) What is 6 squared?

) What is 8 cubed?

3) What is 5 squared?

9) What is 7 cubed?

9) What is 8 squared?

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

13.

14. \_\_\_\_\_

15. \_\_\_\_\_

16. \_\_\_\_\_

17. \_\_\_\_\_

18. \_\_\_\_\_

19. \_\_\_\_\_

20. \_\_\_\_\_



Name \_\_\_\_\_

Toliver-Day 10

(L.6.5b)

**Vocabulary Antonyms**

Read each sentence. Choose the word that means the opposite of the underlined word. Fill in the circle next to the best answer.

1. The British soldiers were rude when they entered our house.

☐ A. mean☐ C. generous☐ B. rough☐ D. polite

2. They were quite noisy as they searched the house.

☐ F. chatty☐ H. slow☐ G. silent☐ J. awkward

3. I felt upset to have soldiers in my home.

☐ A. worried☐ C. calm☐ B. excited☐ D. bored

4. They hoped to capture an important patriot leader.

☐ F. catch☐ H. discover☐ G. release☐ J. replace

5. When they left, the house was very messy.

☐ A. neat☐ C. untidy☐ B. cluttered☐ D. small



Name \_\_\_\_\_

Greek & Latin roots

Day 10

Prefixes **re-, dis-, un-**;

Suffixes **-ness, -ment, -ful, -less**

Choose the correct meaning for each underlined word.

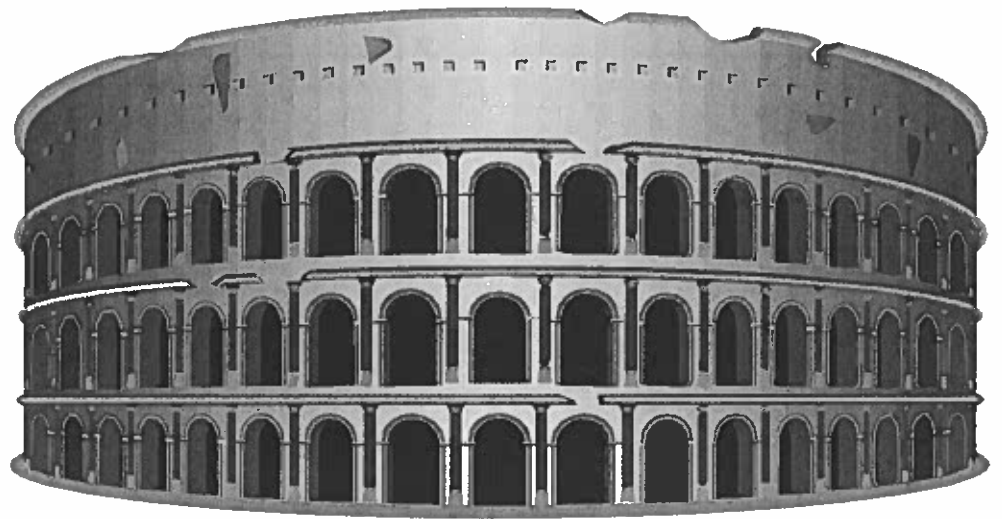
Fill in the circle beside the best answer.

1. Our class is reading the story of a fearless hero.  
☐ A. full of fear                      ☐ C. without fear  
☐ B. causing fear                      ☐ D. one who is feared
2. The hero saves a village from an unjust ruler.  
☐ F. not just                              ☐ H. acting justly  
☐ G. very just                              ☐ J. with justice
3. The ruler leaves the village in disgrace.  
☐ A. in a graceful way                      ☐ C. full of grace  
☐ B. giving grace                              ☐ D. the opposite of grace
4. The people of the village were grateful to the hero.  
☐ F. without gratitude                      ☐ H. in a grateful way  
☐ G. full of gratitude                              ☐ J. needing gratitude
5. This story reminds me of another story about a hero.  
☐ A. uses the mind                              ☐ C. without the mind  
☐ B. in a mindful way                              ☐ D. brings back to mind





**Ancient Rome**  
Roman  
civilization and  
the Roman  
Empire  
controlled much  
of Europe and



the Mediterranean region for

centuries, from 625 BCE until 476 CE. The Empire began in the west with Britain and Spain to Turkey in the east, southward through Syria and Israel, and along the entire Mediterranean coast of Africa. This vast area now has thirty countries. All of the Roman Empire was ruled from the city of Rome, located in central Italy.

Ancient Roman society had three classes: patricians, plebeians and slaves. Patricians were the descendents of the wealthy families from Rome's earliest days and they formed the upper class. Only patricians could serve in the Roman Senate, the ruling body of Rome. Plebeians were the ordinary citizens of Rome and slaves were captured people who worked in homes or at dangerous jobs.

The Romans acquired new territories by invasion rather than diplomacy. The Roman Army conquered new lands and then remained to control and subdue the people of the conquered land. Once territories were conquered they were

required to pay taxes to Rome. With some of the taxes the Roman Emperors kept Roman citizens fed and entertained at the Colosseum, a giant stadium, to keep peace in the capital.

The Ancient Romans excelled at engineering. The Romans were great road builders, using the roads to link their empire together. Good roads allowed the Roman Army to march into any part of the Empire. The roads were also used to transport goods and people throughout the Empire. Portions of these ancient roads can still be found and now highways take the same routes as the old Roman roads. The Romans built stone bridges and aqueducts to bring water to cities; these structures are still in use because of the strength on the Roman arch. The Ancient Romans also invented the first concrete around 200 BCE.

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

Short Answer Question  
(Choose 2 & answer them)

1. Using a map of the Roman Empire and a current map of the area around the Mediterranean Sea, list as many countries as you can that now exist in lands that were once part of the Roman Empire.

2. Draw a map of Italy and show the location of the city of Rome.

3. In Ancient Rome only members of the patrician class could serve in the Senate. Look up the requirements for being a Senator in the U.S. Congress.

4. The Pont du Gard aqueduct in France is a World Heritage Site. Do some research and write a short report about the Pont du Gard.

5. Aqueducts remain a means of getting water to metropolitan areas. Do some research and write a short report about the Governor Edmund G. Brown California Aqueduct.

6. Do some research on the Internet and explain what the keystone is in a Roman arch.

7. Do some research on the Internet to gather pictures of Roman arches. Make a poster or collage of your pictures. Be sure to label each picture.

## Lesson 4.6

## A Sky Full of Lights

**aurora borealis:**  
colorful lights that stream across the sky in the northern hemisphere; the result of solar wind colliding with Earth's gases

**solar wind:** a stream of charged particles that the sun constantly emits

**magnetosphere:**  
Earth's magnetic field

The electrical energy in the atmosphere during auroras can cause electrical disturbances on Earth. For example, it can cause power outages and interfere with satellites, TV transmissions, pagers, and cell phones.

Earth isn't the only planet to experience auroras. They occur on other planets that have an atmosphere and a magnetic field, such as Jupiter, Mars, Uranus, and Neptune. Auroras even occur on Io, one of Jupiter's moons. The Hubble Space Telescope has taken images of these auroras.

The aurora borealis can generally be seen in the northern parts of the United States, Canada, Russia, and Nordic countries, like Norway and Finland.

*What causes the northern lights, and where can they be seen?*

Imagine looking up on a clear night and seeing streaks of red, purple, and green shimmer and dance across the sky. It might seem hard to believe, but this colorful light show is put on by nature. The northern lights, also called the **aurora borealis**, can usually be seen during the spring and fall in northern parts of the world. The aurora can also be seen in the southern hemisphere. There, they are called the *aurora australis*. The southern and northern lights together are known as *aurora polaris*, which means "polar lights." Ever since human beings first caught sight of these colorful lights in the sky, they have been creating myths and legends to explain them. Today, a more scientific answer is available.

The sun plays an important role in the creation of the auroras. **Solar wind** is a stream of gas containing electrically charged particles. Although it moves extremely quickly—at speeds of more than a million miles per hour—it still takes two to three days for solar wind to travel the 93 million miles to Earth.

Earth's core is like a giant magnet. At either end of the planet are Earth's magnetic poles. They create a magnetic field called the **magnetosphere** that captures the solar particles as they approach Earth. Earth's atmosphere serves as a sort of shield or defense against solar wind. When the gases in the atmosphere come in contact with the charged solar particles, a collision occurs, which produces light. If this happened only once, the light wouldn't be visible. Because there are millions of collisions at once, though, enough light is generated to see the aurora from Earth.

No two auroras are ever alike. They can take a number of shapes, such as an arch, a band, curtains, and streamers. The colors that are produced have to do with what types of gas the particles strike and where in the atmosphere the collision occurs. Remember, Earth's atmosphere is made almost completely of nitrogen and oxygen. Green and red auroras tend to be the result of collisions with oxygen atoms. Blue and purple lights are usually created when the solar particles hit nitrogen atoms. Auroras can last from a few seconds to a few hours, depending on the conditions.

If you're ever lucky enough to see an aurora, try to capture a photograph of it. People often travel long distances with the hope that they'll get a chance to witness one of nature's most beautiful spectacles.



Circle the letter of the best answer to each question below.

1. In which of the following places would you be most likely to see the aurora borealis?
  - a. Virginia
  - b. New Mexico
  - c. Maine
  - d. Louisiana
2. What does a planet need to have in order for auroras to take place?
  - a. a moon
  - b. a magnetic field
  - c. an atmosphere
  - d. Both b and c
3. Which of the following statements is true?
  - a. The color of an aurora depends on what type of gas the solar particles hit.
  - b. Auroras can be seen only in the northern hemisphere.
  - c. It takes solar wind nearly a week to reach Earth.
  - d. Another name for aurora borealis is aurora australis.

Write your answers on the lines below.

4. What is solar wind?

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5. What effect can auroras have on Earth?

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6. What happens when solar wind approaches Earth's atmosphere?

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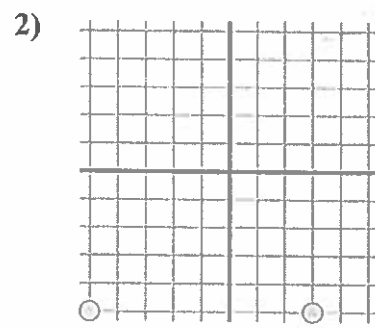
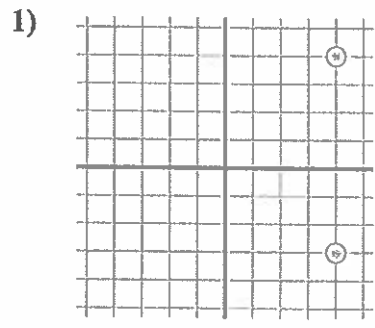
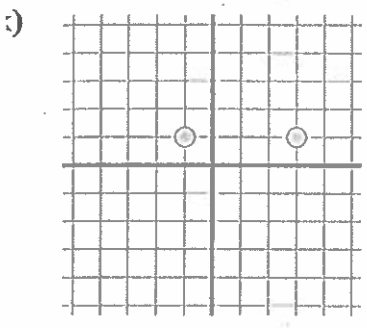
7. Why do you think no two auroras are ever the same?

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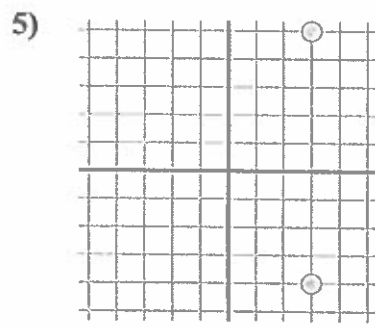
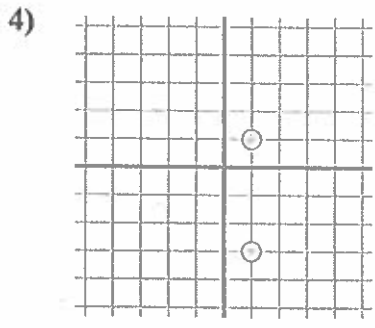
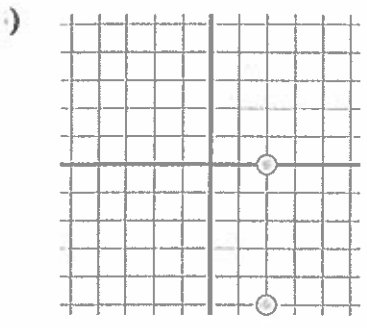


Find the distance between points.

**Answers**



Ex. 4



1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

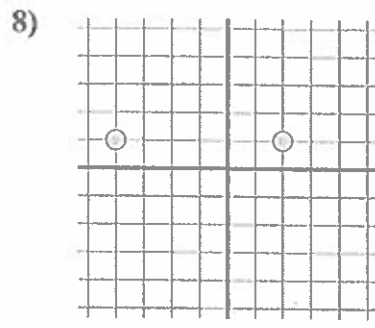
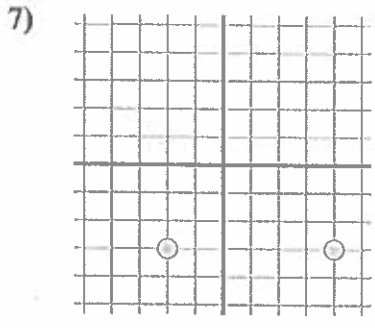
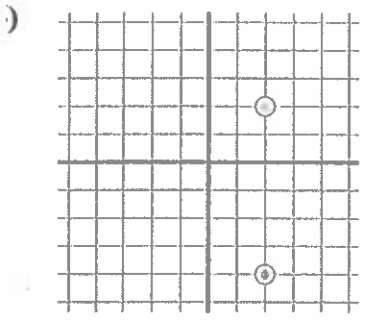
5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_

9. \_\_\_\_\_



10. \_\_\_\_\_

11. \_\_\_\_\_

