Ready™ New York CCLS Practice
English Language Arts

Addresses latest NYS Test updates from 11/20/12
Replaces Practice Test 3
To the Student

*Ready New York CCLS Practice* is a review program for the Common Core Learning Standards for English Language Arts. In this practice test, you will answer 73 ELA questions (63 multiple choice, 8 short response, and 2 extended response).

Your teacher will explain how you will do the practice test and record your answers. Be sure to follow the directions. As you complete the practice test, read the passages and answer the questions carefully. Use the Answer Form on page 57 to record your answers to the multiple-choice questions. Remember to fill in the answer bubbles completely. If you change an answer, you must erase your first answer fully. You will write out your answers to the short- and extended-response questions in the book.

While you work on the practice test, use the Testing Tips below. Read these helpful tips carefully. They can make you a better test taker.

**Testing Tips for Answering Multiple-Choice Questions**

- Read each question carefully before you try to answer it.
- Be sure you know what the question is asking you to do.
- Cross out any answer choices that are not reasonable. Then make your choice from the remaining choices.
- Read the question again. Check that your answer makes sense.

Practice Test

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Read the poem. Then answer the questions that follow.

Autumn Orchards

by Charles V. Ford

I remember lines of bare still trees on flat sandy ground.
There’s a sense of warmth when my thoughts wander back to these orchards of my youth.
I delighted in the order and neatness of my father’s farm.

I loved the rich, dark nights when only the starlight reflected off the branches.
There was a perfect hush and reverence\(^1\) amongst the solid trunks that spanned these fields.
I walked in secret on these long, lone walks, and I walked without purpose or destination.

Loyal animals accompanied me on these excursions through the groves.
There were fast, powerful dogs, and a rainbow of funny feline hunters and loafers.
There was a lost pig and even a turkey that joined the parade for a time.

I listened and learned to return the gentle call of the turtle dove.
The big rigs rattled and whooched by on the highway.
My tread was light and silent in the forgiving sand.

I loved the warm summer nights when onion and garlic fields perfumed the night air.
The smell of burning almond brush in autumn will forever be a comfort and solace\(^2\) to me.

Each season’s breath was a multisensory thrill of moist, rich air.

The orchards captured my imagination and calmed and soothed me.
Old and gray now, but still I’ll steal off by myself into a neighbor’s neat and tidy orchard.
And the trim trees still listen to my ramblings and respond only with silhouettes against a silent moon.

\(^{1}\) reverence: sense of respect, admiration, awe
\(^{2}\) solace: calm, support

Read line 2 from the poem.

There’s a sense of warmth when my thoughts wander back to these orchards of my youth.

How does this sentence help develop the speaker’s feelings about the orchards?

A It establishes that the speaker no longer enjoys wandering through orchards.
B It suggests that the speaker’s memories are of hot weather in the orchards.
C It tells the speaker’s thoughts about the warm colors of orchards.
D It introduces the speaker’s sense of fondness for the orchards.

Go On
According to lines 7–9, what does the poem suggest about the speaker’s walks through the orchard?

A  The speaker would have preferred to walk alone.
B  The speaker viewed the walks as a kind of pleasant celebration.
C  The animals helped break the silence of the night for the speaker.
D  The animals guided the speaker through the dark.

Reread line 12 of the poem.

My tread was light and silent in the forgiving sand.

What does the word “forgiving” suggest about the sand?

A  It felt soft to the speaker.
B  It seemed to excuse the speaker.
C  It seemed to blame the speaker.
D  It felt unsteady to the speaker.

What is the main effect of lines 13–15 in the poem?

A  They remind the speaker of what the orchard looked like in autumn.
B  They show that the speaker’s memories come from various senses and seasons.
C  They provide a review of the speaker’s childhood hopes and dreams of farm life.
D  They explain which are the speaker’s favorite memories.
5 How do the ideas of the last stanza of the poem echo the ideas from the first stanza?
   A In the last stanza, the speaker finds a place where he can express his thoughts freely for the first time.
   B In the last stanza, the speaker finds comfort in the order and clean lines of another orchard.
   C In the last stanza, the speaker finds a real orchard to replace the one from his imagination.
   D In the last stanza, the speaker describes finding a deep sense of peace after the chaos of his childhood.

6 What message or theme does the poet communicate by including sensory details in the poem?
   A Places are best understood when visited at night.
   B Children can experience their surroundings more fully than adults.
   C Memories remain strong even after the passage of time.
   D Growing old can cause you to forget beautiful images of youth.

7 Which is the best summary of the poem?
   A The speaker has a fast, powerful dog and funny cats in many different colors. He also has a pig and even a turkey. He takes these animals for long walks in the orchard.
   B The speaker used to delight in the orderly neat way his father kept the farm. The trees were bare and still and in a straight line. The ground was flat and sandy.
   C The speaker loves rich, dark nights when only moonlight reflects off branches. He walks in the orchard today without purpose or direction. He feels a sense of warmth as he walks along.
   D The speaker recalls the comfort he took from walks long ago in an orchard. He has fond memories of walking there at night with his pets. Now, many years later, he still enjoys walking among trees.
Read the passage. Then answer the questions that follow.

Building a Vivarium

by Anna Lopez

1. A vivarium is a clever way to have a miniature ecosystem in your own home. The word *vivarium* means “place of life” in Latin. A vivarium is like an ecosystem in an enclosed space. An ecosystem is an environment of living things. The area includes plants and animals as well as materials such as rocks, soil, air, and water. Terrariums and aquariums are a type of vivarium. Terrariums contain only plant life. Aquariums contain fish and other water animals.

2. You can build your own desktop vivarium at home. With your vivarium, you can observe small animals such as ants and earthworms or larger animals such as lizards. You can build a vivarium of any size or shape out of many different materials. A glass or plastic box is a good choice because you will want to be able to see inside your vivarium. However, a wooden or metal box with glass or plastic on one side also works well.

3. The floor of a vivarium must be made of a substrate that will support whatever will live in it. Some substrates include soil, pebbles, sand, peat, wood chips, or vegetable matter such as corn or coconut husks. The substrate will help control the moisture in the small new world. It will also give the animals that live there something to live on and dig in.

4. Other things to consider when planning a vivarium are lighting, temperature, and ventilation. You need to make sure the lighting and temperature are appropriate for the species that will live in the space. For instance, earthworms live largely below ground, so they do not need much light. Lizards need heat rocks or heat lamps because they are cold-blooded. Proper ventilation will keep the air moving and prevent mold from growing. All these elements will help the animals in a vivarium stay healthy.

5. When you are ready to build your vivarium, first decide what plants and animals you want to live there. Make sure they can all live in the same environment. For example, a desert plant will not do well in the same conditions that a frog needs to thrive. Desert plants are accustomed to dry conditions, but frogs need lots of moisture. With such things in mind, buy a suitably sized container. Consider how large your plants and animals might get.

6. Once you’ve decided on the plants and animals, start building the environment for the vivarium. Your environment will need a background and a hardscape. For the background, be creative. It can be anything you can dream up to look like the living area you have chosen to model. A hardscape is an artificial surface that will support and contain the substrate on which your plants and animals will live. Make sure that any glue and other products you use will not harm your plants and animals.

7. A vivarium with lots of water and plants will probably need a false bottom beneath the hardscape. A false bottom raises the bottom layer of the environment above the bottom of the container. This creates a space for drainage and prevents the soil and plants on the bottom of the vivarium from becoming waterlogged. A false bottom should be made of a permeable material, which water can flow through.

8. Next, build a top, or lid. You will need to determine how much light and moisture your vivarium will require. Your lid can be made of screen, glass, plastic, or any other material. Be sure you can easily lift the lid to reach the life inside.
If your lid is not clear, you will need to install a light inside the vivarium. Plants and animals require light to remain healthy. At this point, you can add thermometers, heaters, and other instruments needed to keep your vivarium safe and healthy for its inhabitants.

Example of a Vivarium

This is when you add whatever substrate you’ve chosen for the bottom of your vivarium. And, if your vivarium requires it, add water. Make sure the water is not treated with chemicals. Once you have added the substrate and water, turn on all lights and monitors and let this new environment “settle” for at least a day or two.

After the environment has stabilized, it’s time to add your plants and animals. Add them slowly so they have time to adjust to their new home. Remember to feed any animals you place in your vivarium.

A final tip: Don’t overfill your vivarium! Be sure to leave room for the plants and animals to grow. Remember that after a few weeks of growing, your vivarium will mature, or fill in. A mature vivarium looks quite different from a brand new one! Part of the reward of having a vivarium is watching all the growth and change of the life forms within.
8. What purpose do paragraphs 1–4 have in the passage?
   A. They give a list of facts about various kinds of vivariums and what can live in them.
   B. They present useful information about the planning stage of a vivarium.
   C. They offer helpful ideas for designing the background and hardscape of a vivarium.
   D. They provide all necessary instructions for the building stage of a vivarium.

9. In paragraph 4, how does the author help the reader understand why different lighting and temperatures are needed for different vivariums?
   A. by naming different earth materials
   B. by contrasting plant life with animal life
   C. by discussing features of different materials
   D. by discussing the needs of different animals

10. Read this sentence from paragraph 6 of the passage.
     For the background, be creative.
     What does the word “creative” suggest about designing the background of a vivarium?
     A. Much preparation may be involved in the design.
     B. Some imagination may be involved in the design.
     C. The design should be simple.
     D. The design should be elaborate.
What additional information about vivariums can be gained from the labeled diagram?

A. A person can reach inside a vivarium from a side wall, not only from a top lid.
B. A person can see inside some vivariums from all four sides of the container.
C. A vivarium needs a false bottom, which sits above the bottom of the container.
D. Some vivariums use pebbles for substrate, while others use peat or wood chips.

Which sentence from the passage best supports the idea that vivariums provide enjoyment as well as a learning experience?

A. “Remember to feed any animals you place in your vivarium.”
B. “With your vivarium, you can observe small animals such as ants and earthworms or larger animals such as lizards.”
C. “Part of the reward of having a vivarium is watching all the growth and change of the life forms within.”
D. “A vivarium is a clever way to have a miniature ecosystem in your own home.”

Read these words from paragraph 12 of the passage.

A final tip: Don’t overfill your vivarium!

Why did the author probably include this information?

A. Vivariums are usually too large for the plants and animals they contain.
B. Vivariums cannot thrive if the plants and animals they contain are too small.
C. People new to building vivariums don’t know which plants and animals to include.
D. People new to building vivariums are tempted to load them with plants and animals.
14 Which sentence from the passage best supports the idea that carefully planning an environment is very important when designing a vivarium?

A  “For example, a desert plant will not do well in the same conditions that a frog needs to thrive.”

B  “It will also give the animals that live there something to live on and dig in.”

C  “Once you’ve decided on the plants and animals, start building the environment for the vivarium.”

D  “If your lid is not clear, you will need to install a light inside the vivarium.”

15 Which idea should be left out of a summary of the passage?

A  Terrariums are a kind of vivarium, but they contain only plant life.

B  With a vivarium, you can observe plants and animals living in a supportive environment.

C  Decide on features such as lighting, temperature, and ventilation before you begin to build a vivarium.

D  Constructing a vivarium involves a container, hardscape, background, substrate, lid, and false bottom.
Read the speech. Then answer the questions that follow.

Marie Curie Speech:  
The Discovery of Radium

Marie Curie, The Discovery of Radium, Address by Madame M. Curie at Vassar College, May 14, 1921,  
Ellen S. Richards Monographs No. 2 (Poughkeepsie: Vassar College, 1921).

1 I could tell you many things about radium1 and radioactivity2 and it would take a long time. But as we can not do that, I shall only give you a short account of my early work about radium. Radium is no more a baby, it is more than twenty years old, but the conditions of the discovery were somewhat peculiar, and so it is always of interest to remember them and to explain them. 

2 We must go back to the year 1897. Professor Curie and I worked at that time in the laboratory of the school of Physics and Chemistry where Professor Curie held his lectures. I was engaged in some work on uranium3 rays which had been discovered two years before by Professor Becquerel. 

3 I spent some time in studying the way of making good measurements of the uranium rays, and then I wanted to know if there were other elements, giving out rays of the same kind. So I took up a work about all known elements, and their compounds4 and found that uranium compounds are active and also all thorium5 compounds, but other elements were not found active, nor were their compounds. As for the uranium and thorium compounds, I found that they were active in proportion to their uranium or thorium content. The more uranium or thorium, the greater the activity, the activity being an atomic property of the elements, uranium and thorium. 

4 Then I took up measurements of minerals and I found that several of those which contain uranium or thorium or both were active. But then the activity was not what I could expect, it was greater than for uranium or thorium compounds like the oxides6 which are almost entirely composed of these elements. 

5 Then I thought that there should be in the minerals some unknown element having a much greater radioactivity than uranium or thorium. And I wanted to find and to separate that element, and I settled to that work with Professor Curie. We thought it would be done in several weeks or months, but it was not so. It took many years of hard work to finish that task. There was not one new element, there were several of them. But the most important is radium, which could be separated in a pure state. 

1 radium: a rare radioactive metallic element found in in uranium ores  
2 radioactivity: the spontaneous, or unexpected release, of atomic particles  
3 uranium: a dense metallic element that is radioactive and toxic  
4 compounds: a substance made of atoms of two or more different elements not easily separated  
5 thorium: radioactive metallic element  
6 oxides: a compound of oxygen
Now, the special interest of radium is in the intensity of its rays which [are] several million times greater than the uranium rays. And the effects of the rays make the radium so important. If we take a practical point of view, then the most important property of the rays is the production of physiological\(^7\) effects on the cells of the human organism. These effects may be used for the cure of several diseases. Good results have been obtained in many cases. What is considered particularly important is the treatment of cancer. The medical utilization of radium makes it necessary to get that element in sufficient quantities. And so a factory of radium was started to begin with in France, and later in America where a big quantity of ore named carnitite is available. America does produce many grams of radium every year, but the price is still very high because the quantity of radium contained in the ore is so small. The radium is more than a hundred thousand times dearer than gold.

But we must not forget that when radium was discovered no one knew that it would prove useful in hospitals. The work was one of pure science. And this is a proof that scientific work must not be considered from the point of view of the direct usefulness of it. It must be done for itself, for the beauty of science, and then there is always the chance that a scientific discovery may become like the radium a benefit for humanity.

The scientific history of radium is beautiful. The properties of the rays have been studied very closely. We know that particles are expelled from radium with a very great velocity\(^8\) near to that of the light. We know that the atoms of radium are destroyed by expulsion of these particles, some of which are atoms of helium. And in that way it has been proved that the radioactive elements are constantly disintegrating\(^9\) and that they produce at the end ordinary elements, principally helium and lead. That is, as you see, a theory of transformation of atoms which are not stable, as was believed before, but may undergo spontaneous changes.

Radium is not alone in having these properties. Many having other radio-elements are known already, the polonium, the mesothorium, the radiothorium, the actinium. We know also radioactive gases, named emanations. There is a great variety of substances and effects in radioactivity. There is always a vast field left to experimentation and I hope that we may have some beautiful progress in the following years. It is my earnest desire that some of you should carry on this scientific work and keep for your ambition the determination to make a permanent contribution to science.

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\(^7\) physiological: characteristics of normal functioning of living things  
\(^8\) velocity: speed  
\(^9\) disintegrating: to decay and transform

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**From a practical point of view, why is radium valuable?**

A. It is produced in factories.
B. Its particles travel almost as fast as light.
C. Its rays have a unique effect on human cells.
D. It is very similar to gold.
Which statement best reflects the central idea of the speech?

A. Scientific research will continue to lead to great discoveries.
B. Radium is beneficial in part because of its radioactivity.
C. The road to discovering radium was long, but the benefits were worth the effort.
D. The life of a scientist has times of frustration, but it also has times of triumph.

Curie calls radium “dearer than gold” (paragraph 6) because radium

A. is more important than gold in curing disease
B. is more difficult to find than gold
C. has more appealing properties than gold
D. has more value than gold as a form of currency

Why does Curie include the sentence “There is always a vast field left to experimentation and I hope that we may have some beautiful progress in the following years” in the last paragraph of the speech?

A. to explain that radium research is still in the beginning stages
B. to encourage young scientists to make their own discoveries
C. to describe how she came to be inspired by science
D. to illustrate how anyone can enter scientific fields
20 How does the speaker, Marie Curie, convey her \textbf{main} purpose in the speech?
\begin{itemize}
\item[A] by retelling the story of making a big discovery, she conveys excitement
\item[B] by describing the properties of minerals, she imparts knowledge to listeners
\item[C] by describing her research, she inspires others to follow their individual dreams
\item[D] by telling about the future of radium, she imparts a warning against using it
\end{itemize}

21 In paragraph 7, Curie makes the following claim:

\begin{quote}
It must be done for itself, for the beauty of science, and then there is always the chance that a scientific discovery may become like the radium a benefit for humanity.
\end{quote}

Which sentence from the speech \textbf{best} supports this claim?
\begin{itemize}
\item[A] “Now, the special interest of radium is in the intensity of its rays which [are] several million times greater than the uranium rays.”
\item[B] “The medical utilization of radium makes it necessary to get that element in sufficient quantities.”
\item[C] “If we take a practical point of view, then the most important property of the rays is the production of physiological effects on the cells of the human organism.”
\item[D] “But we must not forget that when radium was discovered no one knew that it would prove useful in hospitals.”
\end{itemize}
Read the passage. Then answer the questions that follow.

In 1848, at the age of 13, Andrew Carnegie and his family moved to Allegheny, Pennsylvania. Through various work, Carnegie was able to make investments and eventually own his own business, Carnegie Steel Company. He became one of the richest men in America. Later in life, he donated most of his wealth towards art, public libraries, music, and education, most notably Carnegie Hall and Carnegie-Melon University.

“Pittsburg and Work”


1 I had just completed my thirteenth year, and I fairly panted to get to work that I might help the family to a start in the new land. The prospect of want had become to me a frightful nightmare. My thoughts at this period centered in the determination that we should make and save enough of money to produce three hundred dollars a year—twenty-five dollars monthly, which I figured was the sum required to keep us without being dependent upon others. Every necessary thing was very cheap in those days.

2 The brother of my Uncle Hogan would often ask what my parents meant to do with me, and one day there occurred the most tragic of all scenes I have ever witnessed. Never can I forget it. He said, with the kindest intentions in the world, to my mother, that I was a likely boy and apt to learn; and he believed that if a basket were fitted out for me with knickknacks to sell, I could peddle them around the wharves and make quite a considerable sum. I never knew what an enraged woman meant till then. My mother was sitting sewing at the moment, but she sprang to her feet with outstretched hands and shook them in his face.

3 “What! my son a peddler and go among rough men upon the wharves! I would rather throw him into the Allegheny River. Leave me!” she cried, pointing to the door, and Mr. Hogan went.

4 She stood a tragic queen. The next moment she had broken down, but only for a few moments did tears fall and sobs come. Then she took her two boys in her arms and told us not to mind her foolishness. There were many things in the world for us to do and we could be useful men, honored and respected, if we always did what was right. . . . It was not because the occupation suggested was peaceful labor, for we were taught that idleness was disgraceful; but because the suggested occupation was somewhat vagrant in character and not entirely respectable in her eyes. Better death. Yes, mother would have taken her two boys, one under each arm, and perished with them rather than they should mingle with low company in their extreme youth.

5 As I look back upon the early struggles this can be said: there was not a prouder family in the land. A keen sense of honor, independence, self-respect, pervaded the household. . . .

6 Anything low, mean, deceitful, shifty, coarse, underhand, or gossipy was foreign to that heroic soul. Tom and I could not help growing up respectable characters, having such a mother and such a father, for the father, too, was one of nature's noblemen, beloved by all, a saint.
Soon after this incident my father found it necessary to give up hand-loom weaving and to enter the cotton factory of Mr. Blackstock, an old Scotsman in Allegheny City, where we lived. In this factory he also obtained for me a position as bobbin boy, and my first work was done there at one dollar and twenty cents per week. It was a hard life. In the winter father and I had to rise and breakfast in the darkness, reach the factory before it was daylight, and, with a short interval for lunch, work till after dark. The hours hung heavily upon me and in the work itself I took no pleasure; but the cloud had a silver lining, as it gave me the feeling that I was doing something for my world—our family. I have made millions since, but none of those millions gave me such happiness as my first week’s earnings. . . .

Soon after this Mr. John Hay, a fellow-Scotch manufacturer of bobbins in Allegheny City, needed a boy, and asked whether I would not go into his service. I went, and received two dollars per week; but at first the work was even more irksome than the factory. I had to run a small steam-engine and to fire the boiler in the cellar of the bobbin factory. It was too much for me. I found myself night after night, sitting up in bed trying the steam gauges, fearing at one time that the steam was too low and that the workers above would complain that they had not power enough, and at another time that the steam was too high and that the boiler might burst.

But all this it was a matter of honor to conceal from my parents. They had their own troubles and bore them. I must play the man and bear mine. My hopes were high, and I looked every day for some change to take place. What it was to be I knew not, but that it would come I felt certain if I kept on. Besides, at this date I was not beyond asking myself what Wallace would have done and what a Scotsman ought to do. Of one thing I was sure, he ought never to give up.

Why does the author include the sentence “My thoughts at this period centered in the determination that we should make and save enough of money to produce three hundred dollars a year—twenty-five dollars monthly, which I figured was the sum required to keep us without being dependent upon others” in the first paragraph of the passage?

A to describe what Carnegie earned as a bobbin boy
B to prove that Carnegie’s parents were proud people
C to illustrate how willing Carnegie was to care for his family
D to demonstrate how little goods cost in Carnegie’s boyhood
Read this statement from the passage.

As I look back upon the early struggles this can be said: there was not a prouder family in the land.

Which sentence from the passage could best be used as evidence to support this statement?

A  “I had just completed my thirteenth year, and I fairly panted to get to work that I might help the family to a start in the new land.”

B  “The next moment she had broken down, but only for a few moments did tears fall and sobs come.”

C  “Yes, mother would have taken her two boys, one under each arm, and perished with them rather than they should mingle with low company in their extreme youth.”

D  “In the winter father and I had to rise and breakfast in the darkness, reach the factory before it was daylight, and, with a short interval for lunch, work till after dark.”

Which of the following details from the passage best supports the claim that Andrew Carnegie felt a great sense of responsibility, even as a child?

A  “It was . . . because the suggested occupation was somewhat vagrant in character and not entirely respectable in her eyes.”

B  “Tom and I could not help growing up respectable characters, having such a mother and such a father . . . .”

C  “Soon after this Mr. John Hay, a fellow-Scotch manufacturer of bobbins in Allegheny City, needed a boy, and asked whether I would not go . . . .”

D  “I found myself night after night, sitting up in bed trying the steam gauges, fearing . . . at another time that the steam was too high and that the boiler might burst.”

Which statement best reflects a central idea of the passage?

A  In Carnegie’s boyhood, a family could purchase necessary items without spending a lot of money.

B  Although he did not enjoy the work, Carnegie took pride and pleasure from earning wages at the cotton factory.

C  When Carnegie was a child, his father switched from working at hand-loom weaving to working at a cotton factory.

D  Uncle Hogan’s brother believed that the young Carnegie could earn plenty of money by selling knickknacks.

Go On
26 How does Carnegie illustrate that his father was one of “nature’s noblemen” in the passage?

A by revealing his father’s influence with Mr. Blackstock and Mr. John Hay
B by describing the hard life he and his father lived as factory workers
C by revealing that his father went on to have great financial success
D by describing his father’s reaction to the idea of peddling

27 Which sentence from the passage best conveys Carnegie’s point of view about this part of his life?

A “The prospect of want had become to me a frightful nightmare.”
B “I never knew what an enraged woman meant till then.”
C “They had their own troubles and bore them.”
D “My hopes were high, and I looked every day for some change to take place.”
Read the passage. Then answer the questions that follow.

The History of Aspirin: An Old Remedy Reexamined

by Karen Brinkman

1 Thousands of years ago, a wise man lived in Greece. His name was Hippocrates, and he was widely considered a knowledgeable man of medicine. One day, as he sat under a large shade tree to teach and write, a man approached him, seeking medical advice for a member of his family. The man described the symptoms that his family member experienced: fever, aches, and pain. Hippocrates gave the man some medicine: a powder made from the bark and leaves of a willow tree.

2 Living in the 21st century, this medicine might sound strange to us. Bark and leaves? What possible good could those do anyone? In many ways, it’s true that medicine has changed a great deal since the time of Hippocrates. But in other ways, it hasn’t changed at all. After all, the medicine that Hippocrates prescribed for his patient is something with which you are likely familiar: aspirin.

3 During the time of Hippocrates and even before, people knew that chewing the leaves of the willow tree relieved pain. Evidence shows that Native Americans living in North America, as well as people on the continent of Africa, knew of the willow’s medicinal benefits. In the 1820s, scientists in Europe tried to determine what exactly was in willow leaves that relieved pain. They discovered a chemical that they called salicin. They combined it with an acid to create a powder that they called aspirin.

4 When aspirin was first created, people thought of it as a panacea. However, people soon found that aspirin did not cure everything. For example, some thought it might help eliminate unwanted freckles. Others thought it would cure measles. Still others thought it might cure rabies. It did none of these things, but it did effectively relieve pain.

5 At first, people were thrilled. If they had an ache, pain, or fever, they could go to the doctor and receive relief in the form of a prescription for aspirin. However, most people soon discovered that the acid in aspirin caused an upset stomach. In 1897, a German chemist named Felix Hoffman remedied this problem. He changed the formula slightly so that aspirin would combat pain yet be gentle on the stomach.

6 While not a universal cure-all, aspirin has been found to have other health benefits. In the 1940s, a doctor in California discovered something amazing about aspirin. As he looked over his patients’ charts, he realized that none of the patients who took aspirin regularly for pain had ever had a heart attack. Other patients in his practice, who did not regularly take aspirin, had had heart attacks. He wondered if it was just a coincidence or if aspirin somehow helped his patients to avoid heart attacks. Medical studies over the years have concluded that aspirin does help prevent certain types of heart disease. Aspirin has been found to break up dangerous blood clots and to thin blood in the body. Many patients are now prescribed a low-dose aspirin as a daily supplement to prevent heart attacks.

7 In 1996, the Massachusetts Institute of Technology (MIT) conducted a survey. They asked people “What invention couldn’t you live without?” When given a list of choices, “aspirin” ranked high. That just goes to show that old technology is not necessarily minor and that its value can be enduring.
28. How does the author introduce the key idea that aspirin is a natural remedy?
   A. She explains how aspirin has changed over the years.
   B. She lists the problems people thought aspirin would help cure.
   C. She tells a story about a wise man giving someone some medicine.
   D. She lists the things that a man’s family member suffered from.

29. Which paragraph provides the strongest support for the idea that medicine bears some similarity to what it was in Hippocrates’s time?
   A. paragraph 1
   B. paragraph 3
   C. paragraph 5
   D. paragraph 6

30. What is a “panacea,” as the word is used in paragraph 4 of the passage?
   A. a cure for everything
   B. a cure for headaches
   C. a flourishing disease
   D. a destructive poison
Read this sentence from paragraph 6 of the passage.

While not a universal cure-all, aspirin has been found to have other health benefits.

What idea does this sentence introduce in the passage?

A  Powdered medicines cause upset stomach.
B  Doctors need to find a cure for measles.
C  Aspirin provides relatively little pain relief.
D  Aspirin provides more than just pain relief.

With which statement would the author most likely agree?

A  If Hippocrates were alive today, there would be no disease.
B  Natural medicines are better than modern ones.
C  Aspirin has been used for a long time because it is so effective.
D  People initially get excited about any new medicine.

Which evidence in the passage best supports the idea that aspirin has changed the world in which we live?

A  a study done at MIT
B  the work of a German chemist
C  stories about Native Americans
D  stories about a man in ancient Greece
The chart illustrates that aspirin has some positive effects.

<table>
<thead>
<tr>
<th>Aspirin’s Positive Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>eases aches and pains</td>
</tr>
<tr>
<td>thins blood</td>
</tr>
<tr>
<td>brings fever down</td>
</tr>
</tbody>
</table>

Which effect **best** completes the chart?

A. prevents rabies  
B. cures upset stomach  
C. eliminates unwanted freckles  
D. reduces the risk of heart attack

Which is the **best** summary of the passage?

A. Willow leaves had long been known to relieve pain. In the 1820s, the key agent was discovered, mixed with an acid, and called aspirin. Aspirin is still a popular pain reliever, with additional health benefits as well.

B. Aspirin comes from the bark and leaves of the willow tree. People have used it for thousands of years, since the time of Hippocrates. It can’t cure measles or rabies, but it is good for pain and to help people survive.

C. The most valuable medicine today comes from willow leaves and is called aspirin. It is the best pain reliever available. It used to upset people’s stomachs, but a simple change in formula solved that problem.

D. People, including Hippocrates, used to use willow leaves to relieve pain. Modern people didn’t like chewing leaves, so scientists found the secret of willow and invented aspirin. At first, people were glad to have the new pain reliever.
Read the story. Then answer the questions that follow.

**Work Smarter, Not Harder**

_by Trevor Jackson_

1. Kari wiped sweat from her forehead and stuck the shovel back into the haystack-sized pile of peppermint snow. It wasn’t exactly snow. It was way too warm for it to be frozen water. The one time she licked off some that fell on her hand, she learned that it definitely didn’t taste like peppermint. More like blended asparagus. But the mountain of powdery mush was definitely white with streaks of red swirling up through it. And Kari had to move it all off the wide green field and onto the dirt track around the field. All under the withering gaze of two suns.

2. It was her third day attempting to move the mush. Each day she worked as fast as she could, but she could never quite finish the job before falling down exhausted. She figured that was why each morning the pile was reset, waiting for her to get to work, as if she’d done nothing the day before.

3. Kari wasn’t sure exactly how long she had been in Parival, if that’s even where she really was. Two weeks? A month? Enough details shared by her uncle Otto matched what she had experienced since she fell down the well in the freezing, snow-filled woods behind her grandparents’ house: the feeling of rising and falling at the same time when she first slipped on the well’s rock wall, the way she cast two shadows because of the twin suns in the sky, the birdsongs that sounded more like a baby’s midnight cries for food. Kari had thought these things were just stories, though, even if Otto always protested that they were true. Now she knew.

4. Kari hadn’t been in Parival more than an hour before she’d spotted the big board. It was strung between two branches of an enormous tree, its limbs heavy with a scary-looking red fruit, like giant cherries. The board read, CHORES FOR KARI. She looked around as if there might be someone to explain. The suns beat down on her neck as she stepped closer to examine the chart. Each row gave a title and a brief description followed by a box for a check mark to show Kari had finished.

5. So far each task had proved to be more complicated than it seemed at first. She had to make choices about how she was going to complete each task. A job of collecting and sorting eggs as big as an ostrich’s forced her to use some math skills she didn’t know would ever come in handy. Another job involved her singing a row of musical notes, but she had to sing them from right to left instead of left to right.

6. Exhausted, Kari stopped shoveling the mush and dropped the shovel on the ground. She stamped her foot and gave a loud groan. She thought again about the tasks she had already completed. Each job was a combination of physical activity and some creative thinking. She had been shoveling for days, but had she applied any original thought to the task?

7. That was it! Kari suddenly remembered a magic trick she had performed at her little brother’s birthday party. It had been a sunny day just like this one. Although of course there was only one sun in that sky. Kari’s family and friends had all gathered in the backyard around the small patio table. Plates, cups, and plastic forks and spoons rested on top of a white tablecloth. Kari had grabbed the edges, counted to three, and yanked. Everything on top of the tablecloth stayed in one place, but the tablecloth was liberated. Kari’s family applauded.
The grassy field had felt slippery under her feet while she had worked the last three days. Maybe it wasn’t the peppermint snow that had to move, but the field underneath! Kari kicked the shovel aside and ran to the edge of the field. Sure enough, the edge of the field could be lifted. But the tablecloth had been much smaller and lighter than this grassy field. She would just have to try.

Kari gave the grass in her hands a shake and watched the pile of peppermint snow. The grass ripple she had shaken grew taller and taller as it moved toward the pile in the center. By the time the wave reached the center, it looked like a giant whale. The whale-shaped hump slid right underneath the pile, carrying it high up into the air. Kari saw her chance and pulled hard on the grass. The entire field came flying at her like it weighed no more than that tablecloth had last summer. She ducked as it flew over her head. Then she watched as the pile of snow came falling down to rest on the dirt that had been underneath the grass field. When it touched dirt, the pile vanished.

Kari dusted herself off and headed back to the big chores board. She would get home one way or another.

36 In the first paragraph of the story, what does it mean that Kari has to work “under the withering gaze of two suns”?

A. The two suns disapprove of Kari’s efforts.
B. Kari feels judged by unseen persons in Parival.
C. Kari is very angry at whomever brought her to Parival.
D. The light from the suns is extremely hot and bright.

37 Read this sentence from paragraph 6 of the story.

She stamped her foot and gave a loud groan.

What does this sentence tell the reader about Kari?

A. that she quits when things get hard
B. that she hurt her foot while shoveling
C. that she is discouraged by the task
D. that she has come up with a good idea
38 Read these sentences from paragraph 7 of the story.

Kari had grabbed the edges, counted to three, and yanked. Everything on top of the tablecloth stayed in one place, but the tablecloth was liberated. Kari’s family applauded.

Which other words in the sentences tell the most about the meaning of “liberated” as it relates to the tablecloth?

A grabbed, edges  
B three, tablecloth  
C was, applauded  
D yanked, stayed

39 Which sentence from the passage best explains why Kari has to use her intelligence to finish the chores?

A “It was her third day attempting to move the mush.”  
B “So far each task had proved to be more complicated than it seemed at first.”  
C “Exhausted, Kari stopped shoveling the mush and dropped the shovel on the ground.”  
D “Kari suddenly remembered a magic trick she had performed at her little brother’s birthday.”

40 How has Kari changed from the beginning of the story to the end?

A Kari realizes that she has to take a different approach to her chores in order to succeed.  
B Kari understands that working hard isn’t getting her anywhere, so she decides to search for another way home.  
C Kari quits the task and passes the time by thinking about her family and friends back home.  
D Kari figures out that she has not been working hard enough, so she shovels faster.
41 Which sentence from the passage helps to illustrate the lack of information the narrator shares with the reader?

A “Each day she worked as fast as she could, but she could never quite finish the job before falling down exhausted.”

B “Kari wasn’t sure exactly how long she had been in Parival, if that’s even where she really was.”

C “Each row gave a title and a brief description followed by a box for a check mark to show Kari had finished.”

D “Then she watched as the pile of snow came falling down to rest on the dirt that had been underneath the grass field.”

42 Which of the following is the best summary of the story?

A Kari falls down a well and finds herself in a strange world. She has to figure out ways to complete strange chores so she can get home.

B Kari remembers a trick that was performed at her brother’s birthday party. Then she is able to figure out how to get some powdery mush onto a dirt track.

C Kari has been working for three days to get peppermint-colored snow off a field. Her job is to get the snow off the field and onto a dirt track.

D Kari is not sure how long she has been in another world or even how she got there. She is determined to find her uncle Otto.
Read the story. Then answer the questions that follow.

This is a story about trade on the Silk Road in the thirteenth century.

Trouble on the Silk Road

by E. Khan

1 Omar had a nose for trouble, and he smelled it here in the oasis town of Kashgar. Kashgar was a crossroads in the Silk Road. It was the halfway point where caravans from east and west met. In Kashgar today buyers were few, but sellers were many. Omar left Abdullah to settle the men and camels in the caravanserai while he himself traversed the tangle of narrow alleyways on his way to visit his old friend Kassim.

2 When Omar arrived at the intricately carved door of Kassim’s home, he found a young boy sitting outside. Without a word, the boy bowed and opened the portal. Omar followed the boy from one spacious room to the next until they reached a cool, shady courtyard in the center of Kassim’s home.

3 Kassim had prospered here in Kashgar as a middleman, buying spices and silks from caravans coming from the east and selling the same goods at a profit to other caravans heading west. For Omar, the thrill, the beauty, and yes, the danger of bringing silks from China to Persia and bringing gold and glass from Persia to China was what he lived for, in spite of the risks.

4 Kassim greeted Omar warmly, and the two men chatted of inconsequential things as they drank coffee and nibbled on dates, almonds, and apricots. After the formalities were complete, Omar asked, “So what news have you, my friend?”

5 Kassim shared the rumor that bandits planned to attack Kashgar once the snows in the Pamirs had melted enough for caravans to snake through the narrow mountain passes. Omar had planned to cross the Pamirs in two months when the summer weather made the passes easier to traverse, but with this information from Kassim, he decided he must leave in two weeks. Abdullah would trade their camels for yaks and donkeys, animals better suited for an icy climb in the mountains. And, Omar needed a guide—someone who knew these mountains and could spot landmarks—and dangers—swiftly and accurately. Kassim nodded and then summoned Ahmed, the boy who guarded his door.

6 Upon Kassim’s request, Ahmed quickly but carefully drew a map of the best mountain route. Ahmed’s family had many shepherds and guides. For him, locating mountain passes was as natural as a captain using the stars to guide his ship. Would he be Omar’s guide? Omar had several questions for the young Ahmed, but without fail, Ahmed responded to his satisfaction. After offering his thanks to Kassim, Omar left with his new guide, Ahmed.

7 Fifteen days later, the caravan began to move. Although it was April, deep snow hampered their progress. Animals slipped and fell or got stuck in drifts. Once an avalanche nearly pulled the whole caravan down the mountain.
8 Snow jammed many of the easier passes, so higher and higher they climbed. Food and water became scarce. Days became weeks, and Omar worried that Ahmed might have lost his way. Then one evening, Ahmed pointed to a peak and promised, “In two days we cross the ridge.”

9 For two more days, the caravan pushed on. Deep ravines with sheer sides hampered their progress time and time again. As darkness fell on the second day, Ahmed came to Omar. “We’ll stop here for the night.”

10 Omar hesitated to put his fears into words. But Ahmed understood. As silently as he had once led Omar through Kassim’s home, Ahmed led Omar up a steep trail and around a granite wall. Once Omar rounded the corner, he breathed a sigh of relief. Stretching out before him were the low peaks of the western Pamirs.

11 Omar declared, “You did well, Ahmed. Tomorrow, it’s on to Kokand and beyond.”

43 Read this sentence from the story.

Kassim greeted Omar warmly, and the two men chatted of inconsequential things as they drank coffee and nibbled on dates, almonds, and apricots.

The prefix -in means “without, not,” and the root word “consequence” means “importance, relevance.” The suffix -ial turns a noun into a modifier. What does the word “inconsequential” describe?

A things that have little appeal
B things that are not apparent
C things that are not humorous
D things that have little meaning

44 Which sentence from the story best shows why Omar knows Ahmed would be a good guide?

A “For him, locating mountain passes was as natural as a captain using the stars to guide his ship.”
B “Although it was April, deep snow hampered their progress.”
C “Then one evening, Ahmed pointed to a peak and promised, ‘In two days we cross the ridge.’”
D “Days became weeks, and Omar worried that Ahmed might have lost his way.”
45 What is the best evidence that Omar is a leader who is used to making decisions?
   A  He trades his camels for yaks and donkeys.
   B  He changes his plans quickly to avoid trouble.
   C  He senses that trouble was brewing in Kashgar.
   D  He knows that Kassim would find a good guide.

46 Which is most important in moving the story plot forward?
   A  Kassim prospers as a middleman in the crossroads of Kashgar.
   B  Ahmed guides Omar through the many spacious rooms in Kassim's home.
   C  Abdullah takes care of the other men and camels in Omar's caravanserai.
   D  Ahmed knows how to find and navigate routes through the mountains.

47 How does Ahmed present himself throughout the story?
   A  He seems reliable and capable at first, and he continues to behave that way.
   B  He seems full of enthusiasm at first, and he continues to be full of energy.
   C  He lacks confidence at first, but he is extremely confident by the end of the story.
   D  He is overly shy at first, but he becomes very outgoing by the end of the story.

48 How does the reader primarily learn about the characters in this story?
   A  from what the character Omar says about himself
   B  from the things that Ahmed says directly to Omar
   C  from the descriptions of a narrator who is not part of the story
   D  from the descriptions of a narrator who is a character in the story

Go On
49 Which of the following is the best summary of the story?

A Omar knows that his work is extremely dangerous. Yet he loves the thrill of carrying precious goods along the Silk Road, even when there is the threat of bandits.

B Kassim warns his friend Omar of possible attacks by bandits. Kassim suggests to Omar that the young Ahmed would be a good guide.

C Omar trusts Kassim to find him a good guide through the Pamirs. Ahmed answers all Omar’s questions and agrees to be his guide.

D From his friend Kassim, Omar learns of trouble along the Silk Road. Omar leaves early and relies on Ahmed to guide his caravan through the mountain passes.

50 Which of the following sentences from the story best helps to build the theme of overcoming doubt and disbelief?

A “Omar followed the boy from one spacious room to the next until they reached a cool, shady courtyard in the center of Kassim’s home.”

B “Abdullah would trade their camels for yaks and donkeys, animals better suited for an icy climb in the mountains.”

C “Snow jammed many of the easier passes, so higher and higher they climbed.”

D “Days became weeks, and Omar worried that Ahmed might have lost his way.”
Read the passage. Then answer the questions that follow.

**Biomass Basics**

*by United States Energy Information Association*


1 Biomass is organic material made from plants and animals (microorganisms). Biomass contains stored energy from the sun. Plants absorb the sun’s energy in a process called photosynthesis. The chemical energy in plants gets passed on to animals and people that eat them.

2 Biomass is a renewable energy source because we can always grow more trees and crops, and waste will always exist. Some examples of biomass fuels are wood, crops, manure, and some garbage.

3 When burned, the chemical energy in biomass is released as heat. If you have a fireplace, the wood you burn in it is a biomass fuel. Wood waste or garbage can be burned to produce steam for making electricity, or to provide heat to industries and homes.

**Converting Biomass to Other Forms of Energy**

4 Burning biomass is not the only way to release its energy. Biomass can be converted to other useable forms of energy, such as methane gas or transportation fuels, such as ethanol and biodiesel.

5 Methane gas is the main ingredient of natural gas. Smelly stuff, like rotting garbage, and agricultural and human waste, release methane gas—also called “landfill gas” or “biogas.”

6 Crops like corn and sugar cane can be fermented to produce ethanol. Biodiesel, another transportation fuel, can be produced from left-over food products like vegetable oils and animal fats.

**How Much Biomass Is Used for Fuel?**

7 Biomass fuels provided about 4% of the energy used in the United States in 2011. Of this, about 45% was from wood and wood-derived biomass, 44% from biofuels (mainly ethanol), and about 11% from municipal waste. Researchers are trying to develop ways to burn more biomass and less fossil fuels. Using biomass for energy may cut back on waste and greenhouse gas emissions.

**WOOD & WOOD WASTE**

**Burning Wood Is Nothing New**

8 The most common form of biomass is wood. For thousands of years people have burned wood for heating and cooking. Wood was the main source of energy in the United States and the rest of the world until the mid-1800s. Wood continues to be a major source of energy in much of the developing world.

9 In the United States, wood and wood waste (bark, sawdust, wood chips, wood scrap, and paper mill residues) provide about 2% of the energy we use today.
Using Wood and Wood Waste

10 About 80% of the wood and wood waste fuel used in the United States is consumed by industry, electric power producers, and commercial businesses. The rest, mainly wood, is used in homes for heating and cooking.

11 Many manufacturing plants in the wood and paper products industry use wood waste to produce their own steam and electricity. This saves these companies money because they don’t have to dispose of their waste products and they don’t have to buy as much electricity.

Waste-To-Energy

Energy from Garbage

12 Garbage, often called municipal solid waste (MSW), is the source of about 6% of the total biomass energy consumed in the United States. MSW contains biomass (or biogenic) materials like paper, cardboard, food scraps, grass clippings, leaves, wood, and leather products, and other non-biomass combustible materials, mainly plastics and other synthetic materials made from petroleum.

13 Americans produce more and more waste each year. In 1960, the average American threw away 2.7 pounds of trash a day. Today, each American throws away about 4.4 pounds of trash every day. Of that, about 1.5 pounds are recycled or composted. What do we do with the rest? One option is to burn it. (Burning is sometimes called combustion.) About 85% of our household trash is material that will burn, and most of that is biogenic, or material that is made from biomass (plant or animal products). About 62% of MSW (by weight) is biogenic.

Waste-to-Energy Plants Make Steam and Electricity

14 Today, we can burn MSW in special waste-to-energy plants and use its heat energy to make steam to heat buildings or to generate electricity. There are about 76 waste-to-energy plants in the United States that generate electricity or produce steam. In 2011, these plants generated 14 million kilowatt hours of electricity, about the same amount used by 1.3 million U.S. households. The biogenic material in MSW contributed about 51% of the energy of the MSW that was burned in waste-to-energy facilities. Many large landfills also generate electricity with the methane gas that is produced as biomass decomposes in the landfills.

Waste-to-Energy Plants Also Dispose of Waste

15 Providing electricity is not the major advantage of waste-to-energy plants. It actually costs more to generate electricity at a waste-to-energy plant than it does at a coal, nuclear, or hydropower plant.

16 The major advantage of burning waste is that it reduces the amount of material that we bury in landfills. Waste-to-energy plants burned about 30 million tons of MSW in 2011. Burning MSW reduces the volume of waste by about 87%.
51 Read the following sentence from paragraph 2.

Biomass is a renewable energy source because we can always grow more trees and crops, and waste will always exist.

Why does the author include this sentence in the article?
A to suggest the idea that biomass has many different uses
B to show how biomass could be a better resource than others
C to argue that biomass is an inexpensive source of energy
D to describe how common biomass is used as an energy source

52 Which of the following sentences from the passage best supports the author’s belief that waste is a growing concern?
A “Biomass fuels provided about 4% of the energy used in the United States in 2011.”
B “In the United States, wood and wood waste (bark, sawdust, wood chips, wood scrap, and paper mill residues) provide about 2% of the energy we use today.”
C “Garbage, often called municipal solid waste (MSW), is the source of about 6% of the total biomass energy consumed in the United States.”
D “Today, each American throws away about 4.4 pounds of trash every day.”

53 Which of the following sentences from the passage suggests that there may be drawbacks of using biomass?
A “About 80% of the wood and wood waste fuel used in the United States is consumed by industry, electric power producers, and commercial businesses.”
B “The biogenic material in MSW contributed about 51% of the energy of the MSW that was burned in waste-to-energy facilities.”
C “Many large landfills also generate electricity with the methane gas that is produced as biomass decomposes in the landfills.”
D “It actually costs more to generate electricity at a waste-to-energy plant than it does at a coal, nuclear, or hydropower plant.”
54 How does the author establish the idea that biomass is not a significant energy source in most homes?
   A by explaining the difficulty in obtaining and burning wood  
   B by describing why the use of wood has declined over time  
   C by revealing how much more wood is used by industry  
   D by arguing in favor of increasing the use of wood

55 Which statement best reflects the central idea of the passage?
   A Biomass can be burned, or it can be turned into fuel.  
   B Biomass can be used to create energy and with reduced waste.  
   C Wood has always been the most common form of biomass.  
   D Waste-to-energy plants use biomass and other municipal solid waste.

56 What evidence does the author provide to support the claim that biomass can help companies save money?
   A Biomass can be converted to other useable forms of energy, such as methane gas or transportation fuels, such as ethanol and biodiesel.  
   B About 80% of the wood and wood waste fuel used in the United States is consumed by industry, electric power producers, and commercial businesses.  
   C Many manufacturing plants in the wood and paper products industry use wood waste to produce their own steam and electricity.  
   D There are about 76 waste-to-energy plants in the United States that generate electricity or produce steam.
Which of the following best summarizes the passage?

A  Biomass is organic material that we can burn to create energy. Using different forms of biomass is a practical way to reduce waste, while also gaining electricity.

B  Using different forms of biomass has many advantages for creating energy but comes at a high cost to the environment. Other forms of energy may be just as important.

C  Burning biomass, an organic material, can help our environment. Many manufacturers collect their own biomass waste and burn it to create electricity.

D  Using different forms of biomass to create energy helps companies. Ideally, biomass will become the main energy source used in the United States.
Read the passage. Then answer the questions that follow.

His Wings and Tail

by Olive Thorne Miller

from The Children’s Book of Birds, Houghton Mifflin Company, New York, 1901

1 A bird’s wing does not look much like our arm and hand, yet the bones show that they are the same. The bird has a shoulder, elbow, and wrist, as we have. He even has fingers, though they are so covered up by feathers that one would never know it. He has not so many fingers as we have, and they are not movable like ours.

2 A bird’s wing is a wonderful flying-machine, which men have been trying to imitate these many years. It is made of long stiff feathers, which fold down smoothly over one another at his side when he is resting, but can spread in an instant into a broad fan, to beat the air and carry him away.

3 One would not think that feathers could have so much power; but when the wing is spread, the barbs of the feathers hook together with tiny hooks, so small a microscope is needed to see them; and that, together with the edges lapping over each other, makes them almost like one solid surface.

4 Wings are not alike in shape. The wing of a swallow is long and narrow, while that of a hen or grouse is short and round. We can tell by the shape of a wing how a bird flies.

5 A long, narrow, pointed wing shows that the bird has an easy, skimming flight,—either he flies great distances, or spends hours at a time on wing.

6 The short round wing shows that a bird has a strong flight for short distances. These wings are found mostly on rather heavy birds, like grouse.

7 The longest wings are seen on water birds, such as the petrel and the frigate-bird. The shortest, also, are found among water birds, those who swim more than they fly, as the auks.
All the feathers of the wing are named, and it will be well to remember that the long stiff quills are called remiges or “rowers.” These are firmly rooted in the flesh, and are the hardest to pull out. They are the most important to the safety of the bird.

Birds have also another use for their wings. They are a strong weapon to defend themselves, or to fight others. A large bird can give a severe blow with his wing, and when pigeons fight, it is said they hold up one wing to protect themselves while they strike at the enemy with the other.

Sometimes wings serve as musical instruments. Woodcocks make whistling sounds with their wings as they fly, and mourning doves softly murmuring ones. Ruffed grouse produce with theirs a rolling drum-like effect, and others rattle theirs like castanets.

If wings are not used, they slowly get to be smaller and weaker, each generation having them more and more useless, till after a while they are of no use whatever, and the birds cannot fly at all. This has happened, it is supposed, to the ostrich family and to some birds living in the sea.

The tail of a bird is formed of an equal number of feathers in pairs, most often twelve. When spread they are the shape of a fan, and when closed they lie over each other with the middle pair on top.

The tail feathers are not always of the same length, and that makes a difference in the shape of the end. Sometimes they are even, when the tail is said to be “square.” Sometimes the middle feathers are a little longer than the outside ones, and then it is “rounded” or “pointed.” If the outside feathers are longest, the tail is “forked.”

The feathers of the tail are called rectrices, or “rudders,” because they are supposed to be used to steer, or direct the bird’s course in flying. But the tail is used also as a brake to check the speed in alighting.

The tail is used more than any other organ to express the emotions. Some birds, like the catbird and thrasher, keep it moving nearly all the time, jerking it this way and that, and tossing it upward.

In woodpeckers and swifts the tail feathers are not soft at the end like others, but the stems or shafts project beyond the feathery part, and are stiff like the tail of a sapsucker or sharp like this of the chimney swift. These birds use the tail as a prop to hold them against the tree trunk or chimney wall, and to help them in climbing.

Tail feathers are not so strongly rooted as wing feathers, and are easily pulled out. Sometimes, when a man or boy tries to catch a bird by the tail, the bird will escape, leaving the tail in his hand.
58 Why does the author include the sentence “A bird’s wing is a wonderful flying-machine, which men have been trying to imitate these many years” (paragraph 2) in the passage?

A to describe how birds are different from humans  
B to illustrate how exciting the study of birds’ wings is  
C to introduce how different birds fly in different ways  
D to explain how strong birds’ wing feathers can be

59 Read the sentence from the paragraph 4.

We can tell by the shape of a wing how a bird flies.

Which of the following sentences from the passage best supports this central idea?

A “A bird’s wing does not look much like our arm and hand, yet the bones show that they are the same.”  
B “He even has fingers, though they are so covered up by feathers that one would never know it.”  
C “The shortest, also, are found among water birds, those who swim more than they fly, as the auks.”  
D “Woodcocks make whistling sounds with their wings as they fly, and mourning doves softly murmuring ones.”

60 Based on the passage, why are ostriches unable to fly?

A Ostrich families did not use their wings enough throughout time.  
B Ostrich families spent too much time living near seas.  
C Ostrich families lost their wings through generations of fighting.  
D Ostrich families grew bodies that did not support wings.
Read the sentences from paragraph 14 of the passage.

The feathers of the tail are called rectrices, or “rudders,” because they are supposed to be used to steer, or direct the bird’s course in flying. But the tail is used also as a brake to check the speed in alighting.

As used in the passage, the word “alighting” most closely means

A  landing
B  flying
C  steering
D  jerking

What is most likely the result if a person pulled out a tail feather of a thrasher?

A  The bird may have trouble defending itself.
B  The bird may have trouble creating musical sounds.
C  The bird may have trouble expressing emotions.
D  The bird may have trouble fighting other birds.

Based on the illustrations and on the passage, how are swifts and swallows most likely different?

A  Swallows generally fly shorter distances than swifts do.
B  Swifts are water birds, whereas swallows are not.
C  Swallows have skimming flights, whereas swifts do not.
D  Swifts generally flap their wings more than swallows do.
Read the passages. Then answer the questions that follow.

A Mountain Calling

*by Amy Leinbach Marquis, National Parks*

1. John Muir never liked the word “hike.” Even in the 19th century, American society’s connection to nature had grown increasingly shallow, people’s time outdoors rigid and hasty. Muir, on the other hand, preferred to saunter. “Sauntering meant taking your time, valuing what you see,” says Tad Shay, lead interpretive ranger at John Muir National Historic Site in Martinez, California. “It meant stopping to enjoy the view of a lake, not running past it.”

2. Born in 1838 in the seaside town of Dunbar, Scotland, Muir began his love affair with nature at a young age.

3. In 1849, Muir’s father sacrificed the family’s wealth in Dunbar for a harsh farming life in America, claiming an 80-acre plot of land in central Wisconsin. It was in this pastoral wilderness—its open skies, frozen meadows, and thousands of migrating birds—that Muir found his own religion.

4. Muir was nearly 30 the first time he ventured into California’s Sierra Nevada Mountains. He was overwhelmed by the landscape, scrambling down steep cliff faces to get a closer look at the waterfalls, whooping and howling at the vistas, jumping tirelessly from flower to flower. “We are now in the mountains and they are in us, kindling enthusiasm, making every nerve quiver, filling every pore and cell of us,” he wrote.

5. Muir quickly found work as a sheepherder to keep this precious place near. Guiding his flock through the foothills and into higher elevations, he began his lifelong courtship with the Sierra Nevada. He spent much of his thirties alone in the mountains, carrying a tattered blue journal that he filled with sketches, scientific observations, and soulful writing.

6. Although he preferred living on society’s fringe, he also longed for human companionship. Muir began publishing his writing in 19th-century travel publications that East Coast tourists read on trains bound for the West. Soon, famous scientists and writers joined him in the Sierra Nevada. Ralph Waldo Emerson affected Muir deeply. So did President Teddy Roosevelt, whom Muir invited on a camping trip in the sequoia forest with one stipulation: No politics allowed. Roosevelt went on to establish Yosemite as a national park.

7. “We like to say that Muir got the ball rolling for the National Park System,” Shay says. Four more significant designations would follow, thanks to Muir’s influence: Grand Canyon, Mount Rainier, Petrified Forest, and Sequoia. America would come to know Muir as “The Father of Our National Parks.”

8. In his 76 years, Muir published more than 300 articles and 12 books. He moved a president to create the U.S. Forest Service and co-founded the Sierra Club, which helped establish several new national parks years after his death, and now boasts 1.3 million members.

9. It’s quite a legacy for a man who was so adamant about taking his time.

10. “Our lives are so rapid these days,” Shay says. “Perhaps the best way to honor Muir is simply to slow down and appreciate nature for its beauty.”

1. **adamant**: firmly fixed
Albert Palmer was a companion of John Muir on several memorable “saunterings” through the Sierras. His memoir is a treasure of the early conservation movement in America.

from *The Mountain Trail and Its Message*


1 There is a fourth lesson of the trail. It is one which John Muir taught me [during an early Sierra Club outing].

2 There are always some people in the mountains who are known as “hikers.” They rush over the trail at high speed and take great delight in being the first to reach camp and in covering the greatest number of miles in the least possible time. [They] measure the trail in terms of speed and distance.

3 One day as I was resting in the shade Mr. Muir overtook me on the trail and began to chat in that friendly way in which he delights to talk with everyone he meets. I said to him: “Mr. Muir, someone told me you did not approve of the word ‘hike.’ Is that so?” His blue eyes flashed, and with his Scotch accent he replied: “I don’t like either the word or the thing. People ought to saunter in the mountains—not hike!

4 “Do you know the origin of that word ‘saunter?’ It’s a beautiful word. Away back in the Middle Ages people used to go on pilgrimages to the Holy Land, and when people in the villages through which they passed asked where they were going, they would reply, ‘A la sainte terre,’ ‘To the Holy Land.’ And so they became known as sainte-terre-ers or saunterers. Now these mountains are our Holy Land, and we ought to saunter through them reverently, not ‘hike’ through them.”

5 John Muir lived up to his doctrine. He was usually the last man to reach camp. He never hurried. He stopped to get acquainted with individual trees along the way. He would hail people passing by and make them get down on hands and knees if necessary to see the beauty of some little bed of almost microscopic flowers. Usually he appeared at camp with some new flowers in his hat and a little piece of fir bough in his buttonhole.

6 Now, whether the derivation of saunter Muir gave me is scientific or fanciful, is there not in it another parable? There are people who “hike” through life. They measure life in terms of money and amusement; they rush along the trail of life feverishly seeking to make a dollar or gratify an appetite. How much finer to “saunter” along this trail of life, to measure it in terms of beauty and love and friendship! How much finer to take time to know and understand the men and women along the way, to stop a while and let the beauty of the sunset possess the soul, to listen to what the trees are saying and the songs of the birds, and to gather the fragrant little flowers that bloom all along the trail of life for those who have eyes to see!

7 You can’t do these things if you rush through life in a big red automobile at high speed; you can’t know these things if you “hike” along the trail in a speed competition. These are the peculiar rewards of the man who has learned the secret of the saunterer!

1 *doctrine*: belief
2 *derivation*: origin
3 *parable*: a simple story to illustrate a moral or spiritual lesson about life
The author of the passage, “A Mountain Calling,” suggests that John Muir took his time and valued what he saw in nature. What evidence is given to support this point? Use two details from the passage to support your response.

Write your answer in complete sentences.

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Albert W. Palmer states in paragraph 5 of *The Mountain Trail and Its Message* that “John Muir lived up to his doctrine.” In what ways did Muir do this? Use two details from the passage to support your response.

Write your answer in complete sentences.

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In *The Mountain Trail and Its Message*, how does Albert W. Palmer reveal his point of view regarding those who “hike” through life? Use **two** details from the passage to support your response.

Write your answer in complete sentences.
Planning Page

You may PLAN your writing for question 67 here if you wish, but do NOT write your final answer on this page. Write your final answer on pages 43 and 44.
The authors of “A Mountain Calling” and The Mountain Trail and Its Message both present John Muir’s thoughts on the concept of “sauntering.” From information in both passages, what did “sauntering” mean to Muir and how he lived his life?

In your response, be sure to do the following:
• describe how sauntering is presented in “A Mountain Calling”
• describe how sauntering is presented in The Mountain Trail and Its Message
• combine information from both passages to describe what sauntering meant to Muir
• use details from both passages in your response

Write your answer in complete sentences.
Spies in Petticoats
by Lisa Torrey

1  During the Civil War, thousands of women served as nurses. They worked in hospitals and on the front lines for the Union and the Confederacy. These “angels of the battlefields” hold a well-known place in American history. Less known, however, is the fact that hundreds of women also served in a far different capacity. They risked their lives as undercover spies.

2  These women spies came from a variety of backgrounds—from former slaves to fashionable socialites. Yet these very different women shared some valuable traits. Each had detailed knowledge of daily activities and troop movements in the part of the country where she lived. This knowledge made the women very helpful to military leaders, both Union and Confederate. These women also shared a passion for either the Union or the Confederacy, and they were willing to die for it. Across the country, these female spies worked within carefully constructed networks, gathering information and using various means to relay messages.

3  One of the Union’s top female spies was a Southern woman named Elizabeth Van Lew. Even though Van Lew lived in the South, she was strongly against slavery. She convinced her own family to free their slaves. She was wealthy and well-educated. And she lived in Richmond, Virginia—the capital of the Confederacy. When a Union general asked Van Lew to work as a spy, she readily agreed.

4  Elizabeth Van Lew enlisted the help of other Union supporters in Richmond to become her couriers. These couriers delivered secret information from her to General Grant, who led the Union troops. She also set up relay stations for the couriers at secret meeting points between Richmond and Grant’s headquarters. Van Lew wrote her coded messages in invisible ink. And the messages were often hidden inside hollowed-out vegetables from Van Lew’s garden. Because of Van Lew’s efforts, General Grant learned how the Confederate army was defending Richmond. When General Grant and his Union troops captured Richmond, Elizabeth Van Lew proudly flew the Union flag from the roof of her house. General Grant even visited her at her home. He wanted to thank Van Lew in person for her service to the Union.

5  The former slave Harriet Tubman is celebrated for her work as a “conductor” of the Underground Railroad. She led hundreds of slaves to freedom in the North. And she was also one of the Union’s most valuable spies. Because of her work with the Underground Railroad, Tubman knew firsthand all of the land and waterway transportation routes throughout the South. With this knowledge, she was able to map territory behind enemy lines for the Union. Also because of her work with the Underground Railroad, Tubman had the great respect of many people, especially slaves and former slaves. She enlisted the help of these loyal people as scouts when she set up a vast spy ring for the Union. Led and trained by Tubman, her scouts went on dangerous missions behind enemy lines. Harriet Tubman herself led successful raids along the South Carolina coast in Confederate territory. These raids disturbed supply lines vital to the Confederate army, and they freed hundreds of slaves.
6 While Elizabeth Van Lew, Harriet Tubman, and many other women worked as spies for the Union, other women were actively spying for the Confederacy. One woman in particular was the Confederacy’s master spy. Her name was Rose O’Neal Greenhow. Greenhow was a wealthy widow. She was also a charming hostess. She often invited military and political leaders to her home for social evenings. And she lived in the ideal place for secretly obtaining information about the Union—Washington, D.C. Not only was Washington, D.C., the capital of the United States, it was the headquarters of the Union Army during the Civil War.

7 Rose Greenhow considered herself a Southerner through and through. She would do anything to help the Confederacy win the Civil War. Operating from the Union capital, Greenhow soon organized the war’s largest network of Confederate spies. Writing in secret code, she sent her reports by courier. Each courier passed Greenhow’s reports to the next courier in a relay system known as the “Secret Line.”

8 Rose Greenhow’s messages were highly detailed. They described Union troop movements and strategies, or plans of action. One of these messages gave urgent information about the Union Army’s plan of attack at the First Battle of Bull Run. Greenhow’s accurate information led to a victory for the Confederate Army. In 1861, Rose was placed under house arrest by the newly formed secret service. Even then, the master spy managed to find out Union secrets and send them to Confederate military leaders. After Rose was released from house arrest, she tried to smuggle gold for the Confederate treasury. However, the boat she was in turned over in rough water. Rose drowned, weighed down by the heavy gold.

How does the author illustrate the careful and creative ways Elizabeth Van Lew used to send messages to General Grant? Use two details from the passage to support your answer.

Write your answer in complete sentences.
In paragraph 5 of the passage, the author describes Harriet Tubman’s work as a spy during the Civil War. This evidence suggests that Tubman knew how to make the most of information and people. Use two details from the passage that support this idea.

Write your answer in complete sentences.

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Read the passages. Then answer the questions that follow.

Archimedes and the Siege of Syracuse

by Charles F. Baker, Calliope

INTRODUCTION

1 Syracuse, a peaceful and thriving city on the island of Sicily, a Greek colony off the southern coast of Italy, was the home of the famous mathematician and inventor Archimedes. Under the reign of King Hieron II, Syracuse found itself affected by a fierce conflict involving Rome and Carthage, a powerful city-state on the north coast of Africa.

2 The Romans and the Carthaginians were vying for control of the Mediterranean Sea. Carthage already had colonies in Spain and claimed all of the western Mediterranean and most of Sicily except for Syracuse. Rome’s armies had been capturing the Greek city-states in Italy. It was reasonable to expect that Syracuse, because of its location, would be caught in a war between the rapidly growing powers.

ACT I

3 It is the year 220 B.C. Syracuse has an alliance with Rome, but King Hieron is wondering how long it will last. Carthage has a great fleet of ships, and the Romans are spread out all over the area and cannot be relied on for protection. King Hieron needs a plan to defend his vulnerable city and turns to his longtime friend and kinsman Archimedes for advice and help.

SCENE 1

4 The royal palace of King Hieron. The king and his son, Prince Gelon, have received news that the Romans are angry with the Carthaginians, because they cannot trade in Sicily. Carthage has recently gained control of the Strait of Messina, which separates Sicily and Italy. Hieron has just sent for Archimedes.

5 KING HIERON: My son, I fear for the safety of our city. Rome will not tolerate the aggressive actions of Carthage, and there will be a war.

6 PRINCE GELON: I agree. This is a dangerous situation. Rome will be cut off from its own ports in eastern Italy. The Romans cannot even sail around Sicily because Carthage also controls the western Mediterranean. All-out war is inevitable, and we will be caught in the middle.

7 KING HIERON: We must prepare to defend ourselves, even though we have an alliance with Rome. They could not possibly come to our rescue against the Carthaginians. They are already fighting in many different areas and cannot spare soldiers or ships to protect our city.

8 PRINCE GELON: I would not trust the Romans to continue to be our allies. They are an ambitious people, and I am sure they will want to add our prosperous city to their growing empire.

9 KING HIERON: I think you are right. That is why I want to build up our defenses. It is my hope that I will leave a strong, independent city for you and my grandson, Prince Hieronymos, to inherit. I have sent for Archimedes so that we can discuss this serious situation with him. I value his advice.
PRINCE GELON: I also have great respect for Archimedes, but how can he help defend our city? He is only a mathematician, not a soldier.

(Archimedes enters the royal chamber and hears Prince Gelon’s statement.)

ARCHIMEDES: You are right, Your Royal Highness. Since I returned to Syracuse from Egypt many years ago, I have dedicated my life entirely to mathematical research.

KING HIERON: You know as well as I do, my friend, that you have become famous for your clever mechanical inventions.

ARCHIMEDES: They are only the diversions of geometry at play, and I attach no importance to them. I regard the business of mechanics as vulgar and despicable.

KING HIERON: Syracuse is in danger of becoming involved in the war between Rome and Carthage.

ARCHIMEDES: So I have heard.

KING HIERON: Having been at peace for so many years, we have not bothered to maintain our defenses. We forgot that our city was taken by siege years ago. I do not want that to happen again. Archimedes, I implore you to use your scientific knowledge to prepare offensive and defensive engines for me that can be used in every kind of siege warfare.

ARCHIMEDES: I do not like the idea of using science to destroy people.

KING HIERON: Why can you not use some of your scientific knowledge to defend the city that has sheltered you and given you the freedom to do your mathematical research for so many years? I should think that you would be anxious to prove that science can provide a better means for the defense of Syracuse than an army can.

ARCHIMEDES: You have won. I will begin at once to devise plans for all sorts of engines to use against any besiegers.¹

KING HIERON: We will all be grateful for your expertise.

¹ besiegers: attackers
from *The Sand Reckoner*

*by Gillian Bradshaw*

1 The young man took his compasses out of his mouth and turned, beaming. He was thin, long-limbed, and angular, and the general effect as he twisted about was of a grasshopper preparing to jump. “It’s a hundred and twenty myriads-of-myriads!” he exclaimed in triumph, brushing back a tangle of brown hair and regarding his interrupter with a pair of bright brown eyes. . . .

2 “Marcus,” he said eagerly, “what’s the biggest number you can imagine? The number of grains of sand in Egypt—no, in the world! No! How many grains of sand would it take to fill the universe?”

3 “Can’t say,” replied Marcus shortly. “Sir, we’re in Syracuse. In the Great Harbor. Where we disembark1—remember? I need to pack the abacus.”

4 Archimedes put his hands protectively over the tray of sand—called by the same name as the more familiar reckoning machine—and looked around with dismay. He had come up to the ship’s stern deck when the vessel had sighted the point of Plem-yrion and Marcus had started packing. Syracuse then had been only a patch of red and gold against green slopes; now a whole stretch of time seemed to have vanished into the sand, and Syracuse lay all around him. Here, in its harbor, the city—richest and mightiest of all the Greek cities of Sicily—appeared as nothing but walls. To his right loomed the citadel of Ortygia, a rocky promontory2 enclosed by massive battlements, and before him the seawall swept around in a long curve of gray to end in the tower-studded walls of the fort which commanded the approach from the marshes to the south. Two quinqueremes3 sat . . . ready for sea, their sides feathered white with the triple banks of their shipped oars.

5 Archimedes shot a longing glance at the clear water of the harbor entrance behind the ship. There the Mediterranean stretched open and unbounded as far as the coast of Africa, brilliantly blue and hazy in the bright June afternoon. “Why the Great Harbor?” he asked unhappily. He was Syracusan-born, and the city’s customs were as natural to him as its dialect. Merchant ships like the one on which he and Marcus were passengers usually put into Syracuse’s Small Harbor, on the other side of the promontory of Ortygia. The Great Harbor belonged to the navy.

6 “There’s a war on, sir,” said Marcus patiently. He squatted down beside Archimedes and put out his hands for the box of sand.

7 Archimedes looked down sadly at the twelve billion grains of gleaming sand and his own scratched calculations. Of course. Syracuse was at war, and the Small Harbor was sealed off. All the traffic was forced into the Great Harbor, where the navy could keep an eye on it. He knew about the war: it was one of the reasons he had come home. The small farm his family owned lay to the north of the city, well beyond any possible zone of defense, and it was unlikely that there would be any income from it this year. His father was ill and could not practice his usual occupation as a teacher. Archimedes was the only son of the house, and supporting the family and protecting it through what was likely to be a very bad war was now his responsibility. It was time to give up mathematical games and find some real work. Walls, he thought miserably; unbreachable4 walls, closing in.

1 *disembark*: go ashore
2 *promontory*: something that projects, protrudes, or juts out
3 *quinqueremes*: a type of large war ship
4 *unbreachable*: unable to be broken through
Slowly, he took his hands off the notched rim of the abacus. Marcus picked it up, found the lid, and closed the reckoning box away. He slid it into its canvas sack and walked off with it. Archimedes sighed and sat back, hands dangling over his knees. The compasses slipped from his limp fingers and impaled themselves in the deck. He stared at them blankly for a moment, then pulled up one side of the instrument and swept it around, scratching a circle in the rough wood. Let the area of the circle be $K$—No. He folded the compasses and pressed the cool double bar against his forehead. No more games.

impaled: stuck like a spear

At the beginning of the scene from “Archimedes and the Siege of Syracuse,” King Hieron has a problem. Tell what the problem is and how he tries to solve it. Use two details from the passage to support your response.

Write your answer in complete sentences.
Closely reread these lines that Marcus says in paragraph 2 of *The Sand Reckoner*.

“Can’t say,” replied Marcus shortly. “Sir, we’re in Syracuse. In the Great Harbor. Where we disembark—remember? I need to pack the abacus.”

How do Marcus’s words about needing to disembark contribute to the plot? Use **two** details from the story to support your response.

Write your answer in complete sentences.

In *The Sand Reckoner*, what does Archimedes realize about the Great Harbor that turns the story toward its resolution? Use **two** details from the passage to support your response.

Write your answer in complete sentences.
Planning Page

You may PLAN your writing for question 73 here if you wish, but do NOT write your final answer on this page. Write your final answer on pages 54 and 55.
In both “Archimedes and the Siege of Syracuse” and The Sand Reckoner, Archimedes was faced with the reality of wartime. How did he feel about this initially? Did his attitude change? Describe how Archimedes reacted to the reality of wartime in both passages.

In your response, be sure to do the following:
• describe how Archimedes reacted to the reality of wartime in “Archimedes and the Siege of Syracuse”
• describe how Archimedes reacted to the reality of wartime in The Sand Reckoner
• explain the similarity or difference in his final reaction to wartime in both passages
• use details from both passages in your response

Write your answer in complete sentences.
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