



Chapter 25
Practice Test 2

Reasoning Through Language Arts

Welcome!

Here is some information that you need to know before you start this test:

- You should not spend too much time on a question if you are not certain of the answer; answer it the best you can, and go on to the next question.
- If you are not certain of the answer to a question, you can mark your answer for review and come back to it later.
- This test has three sections.
- You have **35 minutes** to complete Section 1.
- When you finish Section 1, you may review those questions.
- You may not go back to Section 1 once you have finished your review.
- You have **45 minutes** to complete the Extended Response question in Section 2.
- After completing Section 2, you may take a 10-minute break.
- You have **60 minutes** to complete Section 3.
- When you finish Section 3, you may review those questions.

Turn the page to begin.

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Questions 1 through 8 refer to the following passage.

Niagara by Mark Twain

- 1 Niagara Falls is a most enjoyable place of resort. The hotels are excellent, and the prices not at all exorbitant. The opportunities for fishing are not surpassed in the country; in fact, they are not even equaled elsewhere. Because, in other localities, certain places in the streams are much better than others; but at Niagara one place is just as good as another, for the reason that the fish do not bite anywhere, and so there is no use in your walking five miles to fish, when you can depend on being just as unsuccessful nearer home. The advantages of this state of things have never heretofore been properly placed before the public.
- 2 The weather is cool in summer, and the walks and drives are all pleasant and none of them fatiguing. When you start out to “do” the Falls you first drive down about a mile, and pay a small sum for the privilege of looking down from a precipice into the narrowest part of the Niagara River. A railway “cut” through a hill would be as comely if it had the angry river tumbling and foaming through its bottom. You can descend a staircase here a hundred and fifty feet down, and stand at the edge of the water. After you have done it, you will wonder why you did it; but you will then be too late.
- 3 Then you drive over to Suspension Bridge, and divide your misery between the chances of smashing down two hundred feet into the river below, and the chances of having the railway-train overhead smashing down onto you. Either possibility is discomforting taken by itself, but, mixed together, they amount in the aggregate to positive unhappiness.
- 4 When you have examined the stupendous Horseshoe Fall till you are satisfied you cannot improve on it, you return to America by the new Suspension Bridge, and follow up the bank to where they exhibit the Cave of the Winds.
- 5 Here I followed instructions, and divested myself of all my clothing, and put on a waterproof jacket and overalls. This costume is picturesque, but not beautiful. A guide, similarly dressed, led the way down a flight of winding stairs, which wound and wound, and still kept on winding long after the thing ceased to be a novelty, and then terminated long before it had begun to be a pleasure. We were then well down under the precipice, but still considerably above the level of the river.
- 6 We now began to creep along flimsy bridges of a single plank, our persons shielded from destruction by a crazy wooden railing, to which I clung with both hands—not because I was afraid, but because I wanted to. Presently the descent became steeper and the bridge flimsier, and sprays from the American Fall began

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to rain down on us in fast increasing sheets that soon became blinding, and after that our progress was mostly in the nature of groping. Now a furious wind began to rush out from behind the waterfall, which seemed determined to sweep us from the bridge, and scatter us on the rocks and among the torrents below. I remarked that I wanted to go home; but it was too late. We were almost under the monstrous wall of water thundering down from above, and speech was in vain in the midst of such a pitiless crash of sound.

- 7 In another moment the guide disappeared behind the deluge, and, bewildered by the thunder, driven helplessly by the wind, and smitten by the arrowy tempest of rain, I followed. All was darkness. Such a mad storming, roaring, and bellowing of warring wind and water never crazed my ears before. I bent my head, and seemed to receive the Atlantic on my back. The world seemed going to destruction. I could not see anything, the flood poured down savagely. I raised my head, with open mouth, and the most of the American cataract went down my throat. If I had sprung a leak now I had been lost. And at this moment I discovered that the bridge had ceased, and we must trust for a foothold to the slippery and precipitous rocks. I never was so scared before and survived it. But we got through at last, and emerged into the open day, where we could stand in front of the laced and frothy and seething world of descending water, and look at it. When I saw how much of it there was, and how fearfully in earnest it was, I was sorry I had gone behind it.

- The author's overall tone in paragraph 1 is one of
 - fearful prediction.
 - ironic contrast.
 - appreciative description.
 - satisfied recollection.
- Read this sentence from paragraph 2.

After you have done it, you will wonder why you did it; but you will then be too late.

Why does the author choose to conclude the paragraph with this sentence?
 - to show how important it is to arrive at the falls on time
 - to offer advice to any readers who might consider visiting Niagara Falls
 - to show the narrator's acquaintance with the motives of the reader
 - to predict a tourist's feelings about the effort needed to view the site
- Which quotation from the passage stands out in direct contrast to the main theme of the passage?
 - "The weather is cool in summer, and the walks and drives are all pleasant and none of them fatiguing."
 - "You can descend a staircase here a hundred and fifty feet down, and stand at the edge of the water."
 - "Either possibility is discomfoting taken by itself, but, mixed together, they amount in the aggregate to positive unhappiness."
 - "Here I followed instructions, and divested myself of all my clothing, and put on a waterproof jacket and overalls."

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4. In paragraph 6, the narrator says, "I remarked that I wanted to go home." Which characteristic does this remark reveal about the narrator?
- A. homesickness
 - B. melancholy
 - C. apprehension
 - D. nostalgia

5. Read the following sentences from paragraph 7.

Such a mad storming, roaring, and bellowing of warring wind and water never crazed my ears before. I bent my head, and seemed to receive the Atlantic on my back.

This detailed description of the author's surroundings enhances the story by

- A. revealing the author's predicament after falling into the Atlantic.
 - B. further emphasizing the flimsy nature of the bridges the author must cross.
 - C. showing the fury of the storm that catches the author off guard.
 - D. using exaggeration to illustrate the volume of water the author experiences.
6. Which definition best matches the use of the phrase "in earnest" in paragraph 7?
- A. serious
 - B. vigorous
 - C. sincere
 - D. ardent

7. Drag and drop the events into the chart to show the order in which they occur in the excerpt. (For this practice test, write the event letters in the chart.)

Order of Events



(a) Horseshoe Fall is included as a stop in the visit.

(b) The Suspension Bridge is described.

(c) The narrator mentions a view of the river.

(d) The narrator goes behind the falls.

8. Which fact can the reader infer about Niagara Falls?
- A. Part of it is located outside the United States.
 - B. It is a good spot for fishing.
 - C. It is a short drive from the exhibit of the Cave of the Winds.
 - D. Hotels there are expensive.

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Questions 9 through 16 refer to the following passage.

Should American Cities Adopt a Commission Form of Government?

by Leverett S. Lyon

The Affirmative:

- 1 During the last quarter-century, municipal organization has trended toward concentration of powers. Some cities have recognized the wisdom of such action, but have unwisely attempted to concentrate only the executive power whereas the real solution lies in concentrating all governmental authority in one responsible body.
- 2 So evident is the need for this solution that there is now a charter revision committee meeting in New York to consider eliminating the separate council entirely, and creating in its place a small commission possessing both legislative and administrative authority.
- 3 What is true of New York is true of scores of other cities. Within the past two years more than a dozen states have provided for a commission form of government, while within the past year more than a dozen cities have thrown away their old forms and assumed the commission system.
- 4 The success of a separate legislative body in state and national government is the only excuse for its retention in our cities, yet such a government is unsuited to modern municipalities. Unlike the state, the work of a city is largely administrative and of a business character, and does not require a separate council to legislate. We do not find, as in the state, the necessity of a large and separate body to represent the various localities. The city has a large population living in a restricted territory; in the state it is scattered.
- 5 The present principle of separation makes possible concentration of power, without a corresponding concentration of responsibility. When one branch of the government dominates, checks and balances between the departments are lost. The system of checks and balances failed in New York, where the mayor is supreme, and where the city has been plundered of sums estimated at 7 percent of the total valuation of real estate. It failed in St. Louis, where the council dominated, and where "Boss Butler" paid that body \$250,000 to pass a street railway franchise. Neither did it work in Philadelphia, which has been plundered of an amount equal to 10 percent of her real estate valuation.

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- 6 Therefore, we must concentrate municipal authority; we must co-ordinate departments, eliminate useless boards and committees and fix individual responsibility. This, we propose to do by establishing a commission form of government, where all governmental authority is vested in one small body of men, who individually act as the heads of administrative departments, but who collectively pass the needed legislation. Thus, instead of a council with restricted powers and divided authority, we have a few men assuming positions of genuine responsibility, as regards both the originating and enforcing of laws.

The Negative:

- 7 We do not defend the evils of present city organization. We believe that far-reaching reforms must be instituted. The issue then is, does the commission form offer a satisfactory solution of our municipal problems?
- 8 In many forms today, as the gentlemen have depicted, the relations between the legislative and executive departments are such that responsibility cannot be fixed. But every conspicuous example of municipal success is based upon the proper correlation between these departments. Municipal success in Europe is an established fact. There we find the cabinet form, in which governing power is vested in the legislative body, which then delegates administrative functions to the cabinet. Charleston, S. C., Elmira, New York, Los Angeles, Cal., are a few of the typical American cities which have successfully adopted the mayor and council form by utilizing the model charter of the National Municipal League.
- 9 Therefore, in whatever form, the principle of a proper division of functions must be embodied. The Affirmative must admit that, after fifteen years of misrule under the commission form in Sacramento, the freeholders by unanimous choice again adopted distinct legislative and administrative bodies; and that the commission form has lately operated but a few years in a few small cities.
- 10 Evils in our cities are due to bad social and economic conditions, and to state interference in purely local affairs. In the United States the city may not act except where authorized by the state. In Europe the city may do anything it is not forbidden to do, and municipal success there is based on this freedom. The European city makes its own local laws, not in conflict with, but in addition to, state law. But in the United States the state legislature failed to distinguish between matters of interest to the state government and those of exclusive interest to the cities.
- 11 The remedy lies in restoring to the city its proper field of legislation. Already thirty states have passed constitutional amendments granting greater legislative powers to the cities. Five states now allow cities to amend their own charters. But in

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direct opposition to this movement for municipal home rule, the commission form takes the last step in the destruction of the city's legislative body and fosters continued state interference. President Eliot says that the functions of the commissioners will be defined by the state.

- 12 We have shown the real causes of municipal evils, and they are to be remedied without tampering with the fundamental principles proved by time and experience. The Affirmative say: change the fundamental principle. The Negative say: retain the principle of distinct legislative and administrative bodies, but observe a proper correlation between them. We would remedy bad social and economic conditions, and, most important of all, give the city greater freedom in powers of local self-government.

Source: Adapted and abridged from *Elements of Debating*, by Leverett S. Lyon, 1919.

9. What evidence does the Affirmative use to support their claims? Drag and drop four pieces of evidence into the chart. (For this practice test, write the statement letters in the chart.)

Claim	Evidence	Evidence
The need for concentrating all power into a commission is evident.		
When one branch of the government dominates, checks and balances between the departments are lost.		

(a) There is a charter revision committee meeting in New York.

(b) More than a dozen cities have thrown away their old forms.

(c) Some cities have lost funds due to a corrupt administration.

(d) The city has a large population living in a restricted territory; in the state it is scattered.

(e) The council in St. Louis took a bribe to pass a street railway franchise.

(f) During the last quarter-century, municipal organization has trended toward concentration of powers.

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10. Which idea about city government is included in the Affirmative?
- A. City governments require a separate council to legislate business and administrative concerns.
 - B. The deplorable conditions of the cities are caused by economic and social factors.
 - C. Checks and balances between departments are the only way to guarantee successful government.
 - D. Many cities have completely revised the structure of their municipal governments.

11. Which conclusion is supported by the argument of the Negative?
- A. The cabinet form of city government is currently found only in Europe.
 - B. The cabinet form of city government is preferable to the mayor and council form.
 - C. Separation of departments is partly responsible for corruption in city government.
 - D. There are guidelines to help cities set up a successful form of government.

12. Read the following sentence from paragraph 11:

Already thirty states have passed constitutional amendments granting greater legislative powers to the cities.

What idea mentioned by the Negative does this sentence support?

- A. The remedy is to give the city greater freedom in powers of local self-government.
- B. In Europe the city may do anything it is not forbidden to do.
- C. Retain the principle of distinct legislative and administrative bodies.
- D. Far-reaching reforms must be instituted.

13. Which detail in the Negative's argument supports the idea that there are disadvantages associated with the commission form of government?

- A. "...a few of the typical American cities which have successfully adopted the mayor and council form by utilizing the model charter of the National Municipal League..." (paragraph 8)
- B. "...the freeholders by unanimous choice again adopted distinct legislative and administrative bodies..." (paragraph 9)
- C. "...Evils in our cities are due to bad social and economic conditions..." (paragraph 10)
- D. "...the commission form has lately operated but a few years in a few small cities..." (paragraph 9)

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14. How does the Negative build the argument that the Affirmative's position is incorrect?
- A. The Negative brings up alternative city models that the Affirmative fails to acknowledge.
 - B. The Negative denies the Affirmative's assertion that general city government is in need of reform.
 - C. The Negative calls into question the use of the sample cities presented by the Affirmative.
 - D. The Negative demonstrates that the Affirmative is uninformed about the true workings of city government.
15. How are the conclusions of the Affirmative and the Negative similar?
- A. Both base their conclusions on the premise that current city conditions are problematic and need to be addressed.
 - B. Both convey a dedication to the fundamental principles on which the broader U.S. government is based.
 - C. Both advocate for the concentration of municipal power into one unified body with full responsibility.
 - D. Both conclude that the balancing of powers is essential to the proper workings of city government.
16. Based on the information in the two articles, the Affirmative and the Negative share which perspective?
- A. There is one form of government that is best suited to cities.
 - B. The states interfere too much into matters best left to local policymakers.
 - C. The current conditions in the cities are in serious need of reform via the commission model.
 - D. The city has concerns distinct from those of the state.

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17. The passage below is incomplete. For each "Select" option, choose the option that correctly completes the sentence. (For this practice test, circle your selection.)

September 20, 2011

Ms. Celine Margot
Chair, AIM Foundation
1235 Deer Park Road
Rochester, NY

Dear Ms. Margot,

I was so honored to meet you last week at the AIM Foundation Benefit. When I walked in the door, I had no idea I was about to be introduced to a Phi Kappa sister: Although, I should not really have been surprised; the members of our sorority

Select...	▼
are known nationwide, not only for their business success but also for	
is known nationwide, not only for their business success but also for	
is known nationwide, not only for its business success but also for	
are known nationwide, not only for business success, but also for	

their works of charity. I was touched to hear the outreach that AIM is doing, helping poor villages in several countries have access to clean water. Clearly, your foundation has a commitment to bettering the lives of those communities who live closest to subsistence level.

As we discussed that night, my company, Clear Image has great experience helping organizations

Select...	▼
to maintain a positive online reputation, for over 5 years	
to maintain a positive online reputation for over 5 years	
to maintain a positive online reputation. For over 5 years	
to maintain for over 5 years a positive online reputation.	

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we have been at the forefront of social media and viral image marketing and during that time the clients we have had range from Fortune 500 companies to philanthropic fraternities. We produce content highlighting your activities via blogs and user

Select...	▼
profiles, maintain a watch on major search engines for traffic to your site,	
profiles, maintain a watch on major search engines for traffic to your site, and	
profiles, maintaining a watch on major search engines for traffic to your site,	
profiles, major search engines are maintained on watch for traffic to your site, and	

collect news reports with a bearing on your organization's goals.

After we connected at the fundraiser, it occurred to me that with AIM approaching 10 whole years of community service, the time would be right for a major media push touting AIM's accomplishments to date. We have, in fact, initiated special media events for several companies. As AIM's 10th anniversary nears, your board of directors has probably been considering ways to make that anniversary special. To that end, I suggest we meet so that I could present some of the promotional work we have done and give you a sense of the nuances of what

Select...	▼	offer. Clear Image might be the perfect partner to
it		
they		
to		
we		

handle the celebration of "10 Years of AIM."

Feel free to call me at 748-555-2398 if you'd like to explore how Clear Image can make AIM more prominent in the world of philanthropy.

Yours truly,

Misha Ayakusi

Coordinator, Philanthropy & Social Service Image Enhancement

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Extended Response Answer Guidelines

Please use the guidelines below as you answer the Extended Response question on the Reasoning Through Language Arts test. Following these guidelines as closely as possible will ensure that you provide the best response.

1. **You will have up to (but no more than) 45 minutes to complete this task.** However, don't rush through your response. Be sure to read through the passage(s) and the prompt. Then think about the message you want to convey in your response. **Be sure to plan your response before you begin writing.** Draft your response and revise it as needed.
2. As you read, think carefully about the **argumentation** presented in the passage(s). "Argumentation" refers to the assumptions, claims, support, reasoning, and credibility on which a position is based. Pay close attention to **how the author(s) use these strategies to convey his or her (their) positions.**
3. When you write your essay, be sure to
 - **determine which position presented** in the passage(s) is **better supported** by evidence from the passage(s)
 - **explain why the position you chose is the better-supported one**
 - **remember, the better-supported position is not necessarily the position you agree with**
 - **defend your assertions with multiple pieces of evidence** from the passage(s)
 - **build your main points thoroughly**
 - **put your main points in logical order** and tie your details to your main points
 - **organize your response carefully** and consider your **audience, message, and purpose**
 - **use transitional words and phrases** to connect sentences, paragraphs, and ideas
 - **choose words carefully** to express your ideas clearly
 - **vary your sentence structure** to enhance the flow and clarity of your response
 - **reread and revise your response** to correct any errors in grammar, usage, or punctuation

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The following article presents both the benefits and drawbacks of a possible minimum wage increase. Proponents and critics disagree about the results of a minimum wage increase.

In your response, analyze both positions presented in the article to determine which one is best supported. Use relevant and specific evidence from the article to support your response.

Type your response, if a computer is available. Otherwise, write your response on paper. This task may require approximately 45 minutes to complete.

Assessing the Proposed \$10.10 Minimum Wage

- 1 The minimum wage (first introduced as law in 1938) is the lowest hourly wage that employers may legally pay to workers. During the historic 1963 civil rights march on Washington, Bayard Rustin, a march organizer, called to increase the minimum wage from \$1.15 an hour to \$2 “so that men may live in dignity.” Adjusted for inflation, \$2 an hour in 1963 would be equivalent to \$13.39 an hour in 2014.
- 2 Recently there has been debate about whether the minimum wage of workers should be raised. Present-day minimum-wage workers seek a raise from \$7.25 an hour (established in 2009) to \$10.10 an hour.

How raising the minimum wage might harm workers

- 3 While there has been much talk about increasing the minimum wage to \$10.10, it is important to examine who exactly is earning minimum wage. The majority of minimum wage earners work in the service industry or fast food industry, for large nationwide food chains or big-box store corporations. So far, the demand for a higher wage seems reasonable: couldn’t these multibillion-dollar corporations afford to pay their employees more? However, the truth is that many of these corporations are made up of innumerable small franchises, and the franchises are the true employers of the minimum-wage workers.
- 4 Each franchise operates as a very small independent company with little overhead to meet unexpected expenses. If these franchises were forced to pay a \$10.10 wage, layoffs would likely occur, if there were not sufficient funds to retain all the employees. The remaining employees would then have to do extra work to compensate for their fired coworkers.
- 5 Even if the franchise finds it can “make do” with fewer workers, those laid off due to the wage increase are unlikely to

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be rehired. If a franchise does try to retain all its workers with a \$10.10 wage, then it must struggle to remain in business, risking the jobs of all its employees in the process. Businesses in this situation also have no financial room to create new jobs, causing stagnation in the economy. And any jobs that remain are now priced out of the reach of unskilled workers, pushing them further into poverty.

- 6 Additionally, many economists feel that \$10.10 represents too much compared to other wages in the economy. The current median wage in the U.S. is a bit less than \$17 per hour, so this proposed increase would make the minimum wage nearly 60% of the median. Canadian studies show that workers lose jobs and have increased workloads when the minimum wage is more than half the median wage. In these studies, the lost jobs might have meant a franchise that migrated to the U.S., or the hiring of undocumented workers at a substandard wage.
- 7 But the same studies showed that a minimum wage of less than 45% of the median would have almost none of those undesired results. The current federal minimum wage of \$7.25 is 43% of the median. So, opponents claim, according to the Canadian studies, maintaining the current minimum wage would be the best measure to guarantee jobs. Opponents of the \$10.10 an hour minimum wage claim that guaranteeing jobs in the long term should outweigh any short-term gains from a severe hike in pay, and any rise in the minimum wage should follow an upward trend in national wages overall.

How an increase in the minimum wage benefits the economy

- 8 Supporters of the \$10.10 minimum wage point out that the wages earned by minimum workers are much more likely to return to the economy than wages earned by those in higher-income brackets. From 2002 to 2012, wages have stagnated or declined for those at the bottom of the wage ladder, which translates to stifled spending. As time goes on, a greater percentage of available jobs become low-wage jobs, as jobs for the middle class are gradually lost. Some economists estimate that by 2020, 48% of U.S. jobs will be retail, food services, domestic services, and health-care support, the core fields that employ minimum-wage workers. Often, these are jobs that can be neither outsourced nor automated, contradicting the objection that a wage increase would force employers to shed workers or relocate.
- 9 Those in higher economic brackets don't spend the same proportion of their income as minimum wage workers do, and they don't spend it on the same types of goods. Rich people can afford not to spend: when they do spend, they buy luxury items from luxury sellers. By contrast, poor people dedicate most or

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all of their income to subsistence-level items and in the process contribute to the salaries of other low-wage earners: grocery clerks and gas station attendants. In this model of “parallel economies,” wealth does not “trickle down” to minimum-wage earners; instead, funds cycle rapidly in the “poor economy” with some funds moving upwards to the “rich economy.” So, supporters argue, increasing the minimum wage increases the health of the economy overall, enabling more people to buy cars, clothing, and food from our nation’s businesses.

- 10 Another argument in support of raising the minimum wage is the large number of minimum-wage workers who are also receiving benefits from social services to fill in the gaps left by their small incomes. The Congressional Budget Office report in 2012 indicates that the lowest-income households receive about \$8,800 in annual assistance from the federal government, for a total of \$316 billion spent on social service programs annually. This assistance translates to basic food and medical care for employees of those mega-corporations that choose to pay their employees as little as possible. In essence, these corporations shift their labor costs to the taxpayers. With a higher minimum wage, supporters say, the government would experience significant relief from these payouts, and put the duty of providing a living wage on the shoulders of the employers.

You may take a 10-minute break before proceeding to Section 3.

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Questions 18 through 25 are based on the following passage.

“The Wives of General Houston”
From *Famous Affinities Of History: The Romance Of*
Devotion Volume III of IV
by Lyndon Orr

- 1 In 1828 Governor Houston was obliged to visit different portions of the state, stopping, as was the custom, to visit at the homes of “the quality,” and to be introduced to wives and daughters as well as to their sportsman sons. On one of his official journeys he met Miss Eliza Allen, a daughter of one of the “influential families” of Sumner County, on the northern border of Tennessee. He found her responsive, charming, and greatly to be admired. She was a slender type of Southern beauty, well calculated to gain the affection of a lover, and especially of one whose associations had been chiefly with the women of frontier communities.
- 2 To meet a girl who had refined tastes and wide reading, and who was at the same time graceful and full of humor, must have come as a pleasant experience to Houston. He and Miss Allen saw much of each other, and few of their friends were surprised when the word went forth that they were engaged to be married.
- 3 The marriage occurred in January, 1829. They were surrounded with friends of all classes and ranks, for Houston was the associate of Jackson and was immensely popular in his own state. He seemed to have before him a brilliant career. He had won a lovely bride to make a home for him, so that no man seemed to have more attractive prospects. What was there which at this time interposed in some malignant way to blight his future?
- 4 It was a little more than a month after his marriage when he met a friend, and, taking him out into a strip of quiet woodland, said to him:

5 “I have something to tell you, but you must not ask me anything about it. My wife and I will separate before long. She will return to her father’s, while I must make my way alone.”
- 6 Houston’s friend seized him by the arm and gazed at him with horror.
- 7 “Governor,” said he, “you’re going to ruin your whole life! What reason have you for treating this young lady in such a way? What has she done that you should leave her? Or what have you done that she should leave you? Every one will fall away from you.”

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- 8 Houston grimly replied:
- 9 "I have no explanation to give you. My wife has none to give you. She will not complain of me, nor shall I complain of her. It is no one's business in the world except our own. Any interference will be impertinent, and I shall punish it with my own hand."
- 10 "But," said his friend, "think of it. The people at large will not allow such action. They will believe that you, who have been their idol, have descended to insult a woman. Your political career is ended. It will not be safe for you to walk the streets!"
- 11 "What difference does it make to me?" said Houston, gloomily. "What must be, must be. I tell you, as a friend, in advance, so that you may be prepared; but the parting will take place very soon."
- 12 Little was heard for another month or two, and then came the announcement that the Governor's wife had left him and had returned to her parents' home. The news flew like wildfire, and was the theme of every tongue. Friends of Mrs. Houston begged her to tell them the meaning of the whole affair. Adherents of Houston, on the other hand, set afloat stories of his wife's coldness and of her peevishness. The state was divided into factions; and what really concerned a very few was, as usual, made everybody's business.
- 13 There were times when, if Houston had appeared near the dwelling of his former wife, he would have been lynched or riddled with bullets. Again, there were enemies and slanderers of his who, had they shown themselves in Nashville, would have been torn to pieces by men who hailed Houston as a hero and who believed that he could not possibly have done wrong.
- 14 However his friends might rage, and however her people might wonder and seek to pry into the secret, no satisfaction was given on either side. The abandoned wife never uttered a word of explanation. Houston was equally reticent and self-controlled. In later years he sometimes drank deeply and was loose-tongued; but never, even in his cups, could he be persuaded to say a single word about his wife.

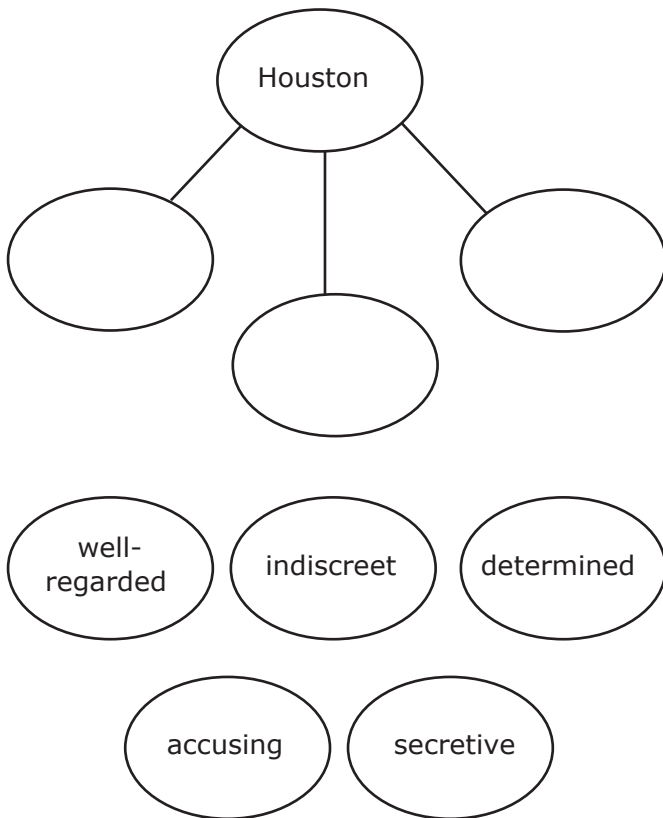
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18. Which definition best matches the use of the word "refined" in paragraph 2?

- A. processed, distilled
- B. purified, cleansed
- C. delicate, intricate
- D. cultivated, civilized

19. Drag and drop each word that describes Houston into the character web. (For this practice test, write each word into the web.)



20. Read the following sentences from paragraph 3.

He seemed to have before him a brilliant career. He had won a lovely bride to make a home for him, so that no man seemed to have more attractive prospects. What was there which at this time interposed in some malignant way to blight his future?

The detailed description of Houston's situation enhances the story by

- A. elaborating on Houston's character with details from his life.
- B. providing a contrast to the story development in the following paragraphs.
- C. comparing Houston to other politicians of his time.
- D. adding to the narrative by revealing the fact of Houston's marriage.

21. What can readers infer about Houston?

- A. His frequent drinking contributed to the break-up of his marriage.
- B. Unlike his wife, he was not widely read.
- C. He was loose-tongued about the details of his separation.
- D. He held public office in Tennessee.

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22. Which quotation from the story supports the inference that Houston was not accustomed to “refined” society?
- A. “In 1828 Governor Houston was obliged to visit different portions of the state, stopping, as was the custom, to visit at the homes of “the quality,” and to be introduced to wives and daughters as well as to their sportsman sons.”
 - B. “There were times when, if Houston had appeared near the dwelling of his former wife, he would have been lynched or riddled with bullets.”
 - C. “He had won a lovely bride to make a home for him, so that no man seemed to have more attractive prospects.”
 - D. “She was a slender type of Southern beauty, well calculated to gain the affection of a lover, and especially of one whose associations had been chiefly with the women of frontier communities.”
23. In paragraph 11, Houston says, “What difference does it make to me?” What characteristic does this reveal about Houston?
- A. indifference about the consequences of the separation from his wife
 - B. sadness so extreme that the loss of his career appears of little importance
 - C. curiosity about the effect that the separation will have on him
 - D. irritation at his friend’s repeated protests
24. Why does the author use the phrase “gazed at him with horror” in paragraph 6?
- A. to illustrate how unexpected and unbelievable the news was to Houston’s friend
 - B. to emphasize how afraid of him Houston’s friend was
 - C. to inform the reader that Houston’s appearance had become grotesque
 - D. to show that the friend has become speechless
25. Based on the details in the story, what can readers conclude about the marriage between Houston and Eliza Allen?
- A. Only the “influential families” were present at the wedding.
 - B. Because of their different backgrounds, their friends were surprised to hear of the marriage.
 - C. The marriage helped Houston’s public image.
 - D. Eliza Allen did not want the marriage as much as Houston did.

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Questions 26 through 33 are based on the following article.

Excerpt from “How To Tell a Story”

by Mark Twain

- 1 I do not claim that I can tell a story as it ought to be told. I only claim to know how a story ought to be told, for I have been almost daily in the company of the most expert story-tellers for many years.
- 2 There are several kinds of stories, but only one difficult kind—the humorous. I will talk mainly about that one. The humorous story is American, the comic story is English, the witty story is French. The humorous story depends for its effect upon the manner of the telling; the comic story and the witty story upon the matter.
- 3 The humorous story may be spun out to great length, and may wander around as much as it pleases, and arrive nowhere in particular; but the comic and witty stories must be brief and end with a point. The humorous story bubbles gently along, the others burst.
- 4 The humorous story is strictly a work of art—high and delicate art—and only an artist can tell it; but no art is necessary in telling the comic and the witty story; anybody can do it. The art of telling a humorous story—understand, I mean by word of mouth, not print—was created in America, and has remained at home.
- 5 The humorous story is told gravely; the teller does his best to conceal the fact that he even dimly suspects that there is anything funny about it; but the teller of the comic story tells you beforehand that it is one of the funniest things he has ever heard, then tells it with eager delight, and is the first person to laugh when he gets through. And sometimes, if he has had good success, he is so glad and happy that he will repeat the “nub” of it and glance around from face to face, collecting applause, and then repeat it again. It is a pathetic thing to see.
- 6 Very often, of course, the rambling and disjointed humorous story finishes with a nub, point, snapper, or whatever you like to call it. Then the listener must be alert, for in many cases the teller will divert attention from that nub by dropping it in a carefully casual and indifferent way, with the pretense that he does not know it is a nub.
- 7 Artemus Ward used that trick a good deal; then when the belated audience presently caught the joke he would look up with innocent surprise, as if wondering what they had found to laugh at. Dan Setchell used it before him, Nye and Riley and others use it to-day.

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- 8 But the teller of the comic story does not slur the nub; he shouts it at you—every time. And when he prints it, in England, France, Germany, and Italy, he italicizes it, puts some whooping exclamation-points after it, and sometimes explains it in a parenthesis. All of which is very depressing, and makes one want to renounce joking and lead a better life.

Source: *How To Tell A Story And Other Essays*, Mark Twain, 1897, Harper & Brothers.

26. Drag and drop two statements that express Twain’s purposes for writing the essay into the empty boxes. (For this practice test, write the statement letters in the boxes.)

Twain’s Purpose

(a) To compare the techniques of storytelling from different cultures

(b) To criticize the rambling and disjointed humorous story

(c) To relate the practices of the world’s most expert storytellers

(d) To satirize the habits of comic storytellers, whether writing or speaking

(e) To defend humorous and comic storytelling as a work of art

27. Read this sentence from paragraph 8.

All of which is very depressing, and makes one want to renounce joking and lead a better life.

Why does the author conclude the essay with this sentence?

- A. to show that the methods of comic storytelling are counterproductive
- B. to give insight into the mental state of the author and instill empathy in the reader
- C. to subtly criticize humorous storytelling as immoral
- D. to give an alternative to the career of a professional storyteller

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28. Why does the author describe the humorous story as “difficult”?
- A. Because attempting to tell a humorous story is so strenuous it can result in depression
 - B. Because, if done incorrectly, the audience will view the teller as pathetic
 - C. Because it is a form that requires patience and self-control
 - D. Because it takes many years of study to fully master the form
29. Which statement expresses the central theme of this essay?
- A. Humor is more a matter of style than of substance.
 - B. No story is truly humorous that is not based on truth.
 - C. Anybody can be humorous, as long as you tell the story with delight.
 - D. Humor is a universal human characteristic, found throughout the world.

30. Drag and drop the sentences into the correct location in the chart. (For this practice test, write the sentence letters in the boxes.)

The humorous story	The comic story

(a) It compares the techniques of storytelling from different cultures.

(b) It never has a point.

(c) It is told seriously.

(d) Anybody can tell it.

(e) The listener must be alert at the end.

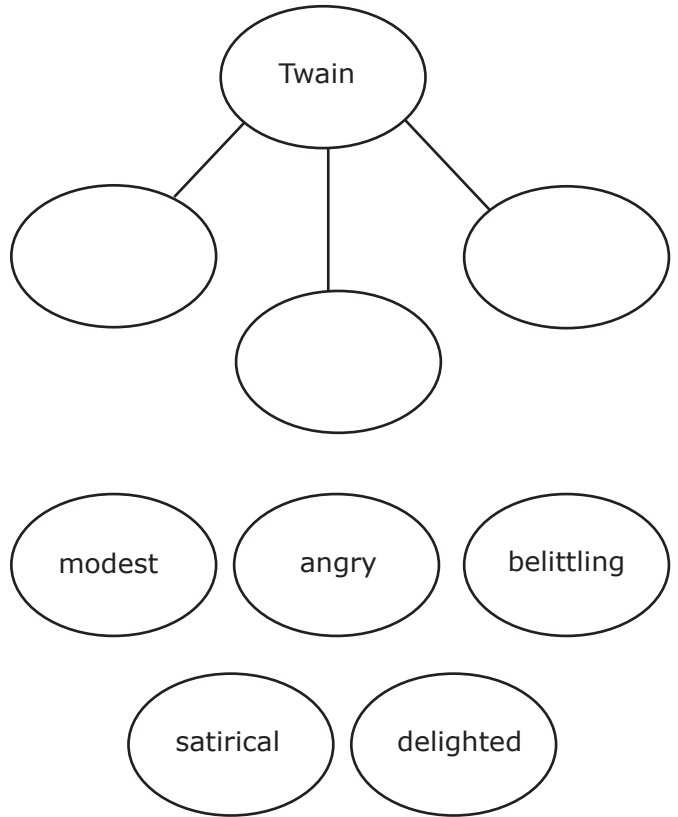
(f) It is pathetic to hear.

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31. What technique does the author use to make his point about the different types of stories?
- A. The author draws an analogy between the stories of America and those of England and France.
 - B. The author uses exaggerated imagery to highlight a contrast between the methods of storytelling.
 - C. The author cites storytelling experts from each type of story tradition.
 - D. The author draws from his own history and experience with storytelling.
32. What can the reader infer about the author's feelings regarding writers and tellers of comedic stories in England, France, and Germany?
- A. The author appreciates that they go out of their way to make the story seem exciting with punctuation.
 - B. The author feels they overemphasize the ending of a joke too much, so that the humor in the story is not allowed to stand on its own.
 - C. The author applauds them for originating the modern comedic story form, which has taken root in America.
 - D. The author is critical of them for telling a story too gravely, rambling, and never getting to the point.

33. Drag and drop each word that applies to the author into the character web. (For this practice test, write the statement letters in the boxes.)



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Questions 34 through 41 are based on the following passage.

Excerpt from *Steve and the Steam Engine* by Sara Ware Bassett

- 1 The Hollow for which they were bound lay in a deserted stone quarry where a little arm of the river had penetrated the barrier of rocks and, gradually flooding the place, made at one end a deep pool; from this point the water spread itself over the meadows in a large, shallow pond. Had the spot been nearer the town it would doubtless have been overrun with skaters; but as it was isolated, and there was a larger lake near the center of the village, few persons took the trouble to seek out this remote stretch of ice.
- 2 This morning it lay desolate like a gleaming mirror, not a human being marring its solitude.
- 3 “We shall have the place all to ourselves!” exclaimed Mr. Ackerman. “There will be no spectators to watch me renew my youth, thank goodness!”
- 4 Quickly the skates were strapped on and the young people shot out into the sunshine and began to circle about. More cautiously Mr. Tolman and his guest followed.
- 5 “I wouldn’t go into the quarry,” shouted Mr. Tolman, “for I doubt if it has been cold enough yet to freeze the ice very solidly there. There are liable to be air holes where the river makes in.”
- 6 “Oh, we fellows have skated in the quarry millions of times, Dad,” Stephen protested. “It is perfectly safe.”
- 7 “There is no way of telling whether it is or not,” was the response, “so suppose for to-day we keep away from it.”
- 8 “But—”
- 9 “Oh, don’t argue, Stevie,” called Doris. “If Dad doesn’t want us to go there that’s enough, isn’t it?”
- 10 “But half the fun is making that turn around the rocks,” grumbled Stephen, in a lower tone. “I don’t see why Dad is such a afraid-cat. I know this pond better than he does and—”
- 11 “If your father says not to skate there that ought to go with you,” cut in Dick. “He doesn’t want you to—see? Whether it is safe or not has nothing to do with it.”
- 12 “But it’s so silly!” went on Stephen. “Why—”

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- 13 “Oh, cut it out! Can it!” exclaimed the East Side lad. “Your dad says *No* and he’s the boss.”
- 14 The ungracious retort Steve offered was lost amid the babble of laughter that followed, and the skaters darted away up the pond. Indeed, one could not long have cherished ill humor amid such radiant surroundings. There was too much sunshine, too much sparkle in the clear air, too much jollity and happiness. Almost before he realized it Stephen’s irritation had vanished and he was speeding across the glassy surface of the ice as gay as the gayest of the company.
- 15 He never could explain afterward just how it happened that he found himself around the bend of the quarry and sweeping with the wind toward its farther end. He had not actually formulated the intention of slipping away from the others and invading this forbidden spot. Nevertheless, there he was alone in the tiny cove with no one in sight. What followed was all over in a moment,—the breaking ice and the plunge into the frigid water. The next he knew he was fighting with all his strength to prevent himself from being drawn beneath the jagged, crumbling edge of the hole. To clamber out was impossible, for every time he tried the thin ice would break afresh under his hands and submerge him again in the bitter cold of the moving stream. Over and over he tried to pull himself to safety but without success. Then suddenly he felt himself becoming numb and helpless. His teeth chattered and he could no longer retain his hold on the frail support that was keeping his head above water. He was slipping back into the river. *He was not going to be able to get out!*
- 16 With a piercing scream he made one last desperate lunge forward, and again the ice that held him broke and the water dashed over his ears and mouth.
- 17 When he next opened his eyes it was to find himself in his own bed with a confusion of faces bending over him.
- 18 “There!” he heard some one say in a very small, far-away voice. “He is coming to himself now, thank God! It was chiefly cold and fright. He is safe now, Tolman. Don’t you worry! You’d better go and get off some of your wet clothing, or you will catch your death.”

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34. Drag and drop the events into the chart to show the order in which they occur in the excerpt. (For this practice test, write the event letters in the chart.)

Order of Events



(a) The lake ice breaks.

(b) Stephen objects to his father.

(c) Stephen is at home.

(d) The quarry is deserted.

35. What can readers infer about the skating trip?
- A. Stephen deliberately planned to disobey his father by skating around the quarry.
 - B. Stephen's father was the one who pulled him from the water.
 - C. The quarry was deserted because it had a reputation for being unsafe.
 - D. The trip was planned for the purpose of restoring Mr. Ackerman's health.

36. Which quotation from the story best supports the idea that Dick's father is not the only adult in the skating party?

- A. "There will be no spectators to watch me renew my youth, thank goodness!"
- B. "Quickly the skates were strapped on and the young people shot out into the sunshine and began to circle about."
- C. "If your father says not to skate there that ought to go with you," cut in Dick."
- D. "He is safe now, Tolman. Don't you worry!"

37. Which definition best matches the use of the word "cherished" in paragraph 14?

- A. preserved
- B. embraced
- C. harbored
- D. honored

38. Based on the details in the story, what can readers tell about Dick?

- A. He is Stephen's brother, and warns Stephen to obey their father.
- B. He is the son of Mr. Ackerman, who is friends with Stephen's father.
- C. He disagrees with Stephen about whether the quarry is safe to skate around.
- D. He and Stephen have different views of parental authority.

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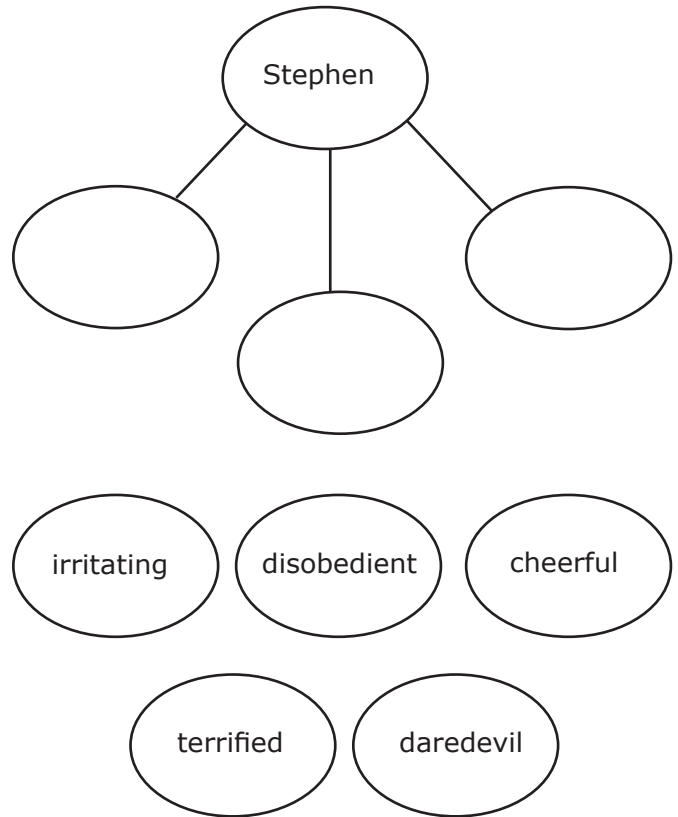
39. Read the following sentences from paragraph 1.

The Hollow for which they were bound lay in a deserted stone quarry where a little arm of the river had penetrated the barrier of rocks and, gradually flooding the place, made at one end a deep pool; from this point the water spread itself over the meadows in a large, shallow pond.

The detailed description of the landscape enhances the story by

- A. giving some evidence for the claim that some parts of the ice may be safer than others.
- B. establishing the geological history of The Hollow.
- C. introducing the skating area that lies near the village.
- D. showing that the group had to cross a river before arriving at the skating area.

40. Drag and drop each word that describes Stephen into the character web. (For this practice test, write each word into the web.)



41. Why does the narrator use the phrase "a confusion of faces"?
- A. to show that Tolman is disoriented by the lake experience
 - B. to emphasize that the people caring for Stephen are confused by his condition
 - C. to represent Stephen's mental state after the skating trip
 - D. to indicate that the people Stephen sees are strangers to him

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42. The passage below is incomplete. For each "Select" option, choose the option that correctly completes the sentence. (For this practice test, circle your selection.)

To: All Personnel
Billie Tanker Pipe and Supply
From: Billie Tanker
Date: March 18, 2013
Subject: Farewell to Ron Jensen

Here at Billie Tanker Pipe and Supply, we take pride in our unparalleled customer service and the unquestionable quality of our work. Though we have expanded our operations from one small storefront to a county-wide franchise, we continue to see all our workers, from truck drivers to senior management, as members of one large family. Therefore, it is with a mixed sense of pride and sadness that I congratulate Ron Jensen on his retirement.

Ron started at our company fifteen years ago and was a part of growth from making small business "housecalls" to servicing major corporations in our city. Many customers got to know Ron by name and asked for him personally when they needed an estimate. Ron's service record is outstanding. His work one-on-one with clients and the knowledge he's gained from a decade and a half in the field

Select...	▼
earn him	
earns him	
earn them	
earns them	

valued customers. While many of his peers went on to positions in management, Ron remained at the "front lines," where he could "get his hands dirty" with the renovations and retrofits that he preferred to desk work.

At his retirement

Select...	▼
party, ceremoniously, Ron will present the password for his workstation	
party Ron's presentation of the password for his workstation will be ceremonial	
party, Ron will ceremoniously present the password for his workstation	
party, Ron's workstation will have its password ceremoniously presented	

to his colleague of many years, Belle Sanchez. His coworkers will then stage a humorous "This Was Your Life" retrospective,

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highlighting Ron’s career successes, and relating humorous anecdotes about his adventures in engineering.

Ron plans to retain a consultant relationship with our company to

best serve his

Select...	▼
colleagues and project managers and his	
colleagues and project managers. His	
colleagues, his project managers, and, his	
colleagues, his project managers, and his	

long-time clients, providing guidance necessary to make his transition to retirement as smooth as possible for all parties. Ron will work with new technicians as they take over existing projects, to ensure our

Select...	▼
-----------	---

 best performance.

Company,
company’s
companies’
companies

Please join me in thanking Ron for his outstanding tenure of service and commending him on a successful career. All employees are invited to Ron’s retirement party on Friday, at 7pm, in the main conference room of our downtown office location: 2121 Main Street. Come wish him a happy retirement.

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Questions 43 through 50 refer to the following articles.

Addresses and Proceedings of the Second National Conservation Congress

Held At Saint Paul, Minnesota September 5–8, 1910

Article 1: Address by the President of the United States by President William Howard Taft

- 1 We have, then, excluding Alaskan forests, a total of about 144,000,000 acres of forests belonging to the Government, which are being treated in accord with the principles of scientific forestry. The law now prohibits the reservation of any more forest lands in Oregon, Washington, Idaho, Montana, Colorado and Wyoming, except by act of Congress. I am informed by the Department of Agriculture that the Government owns other tracts of timber lands in these States which should be included in the forest reserves. I expect to recommend to Congress that the limitation herein imposed shall be repealed. In the present forest reserves there are lands which are not properly forest land, and which ought to be subject to homestead entry. We are carefully eliminating such lands from forest reserves or, where their elimination is not practicable, listing them for entry under the forest homestead act.
- 2 The Government timber in this country amounts to only one-fourth of all the timber, the rest being in private ownership. Only three percent of that which is in private ownership is looked after properly and treated according to modern rules of forestry. The usual destructive waste and neglect continue in the remainder of the forests owned by private persons and corporations. It is estimated that fire alone destroys \$50,000,000 worth of timber a year. The management of forests not on public land is beyond the jurisdiction of the Federal Government. If anything can be done by law, it must be done by the State legislatures. I believe that it is within their constitutional power to require the enforcement of regulations, in the general public interest, as to fire and other causes of waste in the management of forests owned by private individuals and corporations.
- 3 Exactly how far these regulations can go and remain consistent with the rights of private ownership, it is not necessary to discuss; but I call attention to the fact that a very important part of Conservation must always fall upon the State legislatures, and that they would better be up and doing if they would save the waste and denudation and destruction through private greed or accidental fires that have made barren many square miles of the older States.

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- 4 I have shown sufficiently the conditions as to Federal forestry to indicate that no further legislation is needed at the moment except an increase in the fire protection to National forests and an act vesting the Executive with full power to make forest reservations in every State where Government land is timber-covered, or where the land is needed for forestry purposes.

**Article 2: Report of the Western
Forestry and Conservation Association
by E. T. Allen, Forester**

- 5 Let us not, during excursions into Constitutional problems, State rights, and other bewildering issues, forget that first of all comes protection from destruction and waste! The great danger now is that our resources will disappear while we are deciding to whom they shall belong.
- 6 In our five States from Montana to California stands half the merchantable timber in the United States, the majority in private hands. To preserve it for the fullest use, to replace it when used, if possible—this is the timber-owner’s duty. Nowhere else has he realized this so promptly and acted so adequately as in the Pacific Northwest.
- 7 You have all read of the recent fires in our northwestern country. They have been greatly exaggerated, the area injured really being very limited. Nevertheless, while we talk here of generalities, bands of weary, half-blind men are still battling to prevent fresh outbreaks; the smoke still curls over the blackened forms of those who met a fearful death to save the lives of others; scores who fought till they could fight no more still lie bandaged and sightless in the extremity of mortal agony. We of the West owe a sacred debt to them, one and all, and not least to the men of the Forest Service whose training made them as efficient as they were brave. But side by side with the bravest, equally efficient, equally trained and disciplined, worked the patrolmen of our fire associations. Conservationists are employed by private effort. In the Coeur d’ Alene fires alone, a single one of our Associations put 850 men in the field.
- 8 The way to prevent fire is to prevent it, not fight it when almost or quite beyond control. The only solution of the fire question is better enforcement of better laws, better public sentiment, and better patrol. It is in this that our Associations now lead all other agencies. They handle the fire situation in a much better and more comprehensive manner than even the Government

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has ever done, because they spend three times as much money per acre for patrol. Thoroughly excellent as are the methods in the National Forests—they are identical with those of the most progressive practical timberman—Congress does not sustain them adequately.

- 9 Our own system is by no means perfect yet. We need more men and more money from our own brethren, and heartier cooperation from public, State, and Government. And when, as already in Washington last year, one Association protects 8,000,000 acres with a loss of but 1,000 acres; when this small loss was caused by less than 6 fires out of 1,200 extinguished; when in this historic year of 1910 we have controlled our countless fires so that actual disasters can be counted on the fingers, and our loss as a whole is insignificant—we feel that no one has done more to prove his willingness and competence to practice Conservation that counts than the northwestern forest owner.

43. President Taft mentioned the fraction of timber owned by public organizations in order to
- A. show that waste and neglect of forests is mostly due to private owners.
 - B. emphasize that not enough forested land was designated for public use.
 - C. support the idea that some lands are not properly forest lands, and should be re-categorized.
 - D. prove that federal laws about management of forests not on public land should not be enacted because the fraction is so small.
44. What approach did the author of the report by the Western Forestry and Conservation Association take to support the idea that northwestern forest owners have effective conservation practices?
- A. The author explored several different definitions of “conservation” and evaluated them.
 - B. The author offered statistics to illustrate the effectiveness of the private associations in protecting private forest lands.
 - C. The author compared the number of Forest Service members to the number of members in fire patrols of the private associations.
 - D. The author offered a critique of the government’s conservation methods.

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45. Read this quotation from the report:

“...we feel that no one has done more to prove his willingness and competence to practice Conservation that counts than the northwestern forest owner.”

Why does E. T. Allen, in responding to President Taft, conclude the report with this sentence?

- A. to counter the idea that private owners of forested lands are guilty of waste and neglect
- B. to clearly define the kind of Conservation “that counts”
- C. to prove that Congress does not adequately maintain the forested lands
- D. to show that the private owners can protect their forested lands without further laws

46. Drag and drop the phrases into the correct location on the chart. (For this practice test, write the phrase letters in the chart.)

President Taft’s Address	E. T. Allen’s Report

(a) There are lands which should be removed from the forest reserves.

(b) States should make laws for fire safety.

(c) Private fire patrols are more costly per acre than National Forest patrols.

(d) The private Northwest forest owners have an imperfect fire safety system.

47. How does Article 1 (the president’s address) relate to Article 2 (the excerpt of the report by E. T. Allen)?

- A. The president’s address mentions the limitations on national reserved forests, and the report by E. T. Allen defends these limitations.
- B. The president’s address calls for more laws regarding fire safety, and the report by E. T. Allen denies the necessity of such laws.
- C. The report by E. T. Allen calls for laws to enforce fire safety, while the president’s address discusses how those laws impact property rights.
- D. The president’s speech spends equal time on the classification of forests and problems of regulation, while the report by E. T. Allen gives priority to the details of forest protection.

48. Based on Article 1, what was President Taft’s attitude about laws regarding the regulation of forested lands?

- A. No further legislation is currently needed.
- B. The states do not have constitutional power to require the enforcement of such regulations.
- C. The laws regarding limitations on forested reserves should remain.
- D. The federal government should not make laws about forests that are not public.

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49. Which quotation expresses the primary purpose of President Taft's address?
- A. "I call attention to the fact that a very important part of Conservation must always fall upon the State legislatures."
 - B. "We have, then, excluding Alaskan forests, a total of about 144,000,000 acres of forests belonging to the Government, which are being treated in accord with the principles of scientific forestry."
 - C. "The usual destructive waste and neglect continue in the remainder of the forests owned by private persons and corporations."
 - D. "No further legislation is needed at the moment except an increase in the fire protection to National forests and an act vesting the Executive with full power to make forest reservations."
50. What can readers infer about the forest homestead act?
- A. The act was passed to make sure pioneers could have homesteads in the forests.
 - B. The act was passed to reallocate the forest lands that had been restricted in the northwest states.
 - C. The act provided another way of categorizing government forest lands that had been assigned to the forest reserve.
 - D. The act applied to one-fourth of the timber in the country.

END OF TEST

Mathematical Reasoning

Welcome!

Here is some information that you need to know before you start this test:

- You should not spend too much time on a question if you are not certain of the answer; answer it the best you can, and go on to the next question.
- If you are not certain of the answer to a question, you can mark your answer for review and come back to it later.
- You have **115 minutes** to complete this test.
- This test has two parts.
- When you finish Part 1, you may review those questions.
- You may not go back to Part 1 once you have finished your review.
- You may not use a calculator in Part 1. You may use a calculator in Part 2.

Turn the page to begin.

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Mathematics Formula Sheet

Area of a:

square	$A = s^2$
rectangle	$A = lw$
parallelogram	$A = bh$
triangle	$A = \frac{1}{2}bh$
trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$
circle	$A = \pi r^2$

Perimeter of a:

square	$P = 4s$
rectangle	$P = 2l + 2w$
triangle	$P = s_1 + s_2 + s_3$
Circumference of a circle	$C = 2\pi r$ OR $C = \pi d$; $\pi \approx 3.14$

Surface Area and Volume of a:

rectangular prism	$SA = 2lw + 2lh + 2wh$	$V = lwh$
right prism	$SA = ph + 2B$	$V = Bh$
cylinder	$SA = 2\pi rh + 2\pi r^2$	$V = \pi r^2 h$
pyramid	$SA = \frac{1}{2}ps + B$	$V = \frac{1}{3}Bh$
cone	$SA = \pi rs + \pi r^2$	$V = \frac{1}{3}\pi r^2 h$
sphere	$SA = 4\pi r^2$	$V = \frac{4}{3}\pi r^3$

(p = perimeter of base B ; $\pi \approx 3.14$)

Data

mean	mean is equal to the total of the values of a data set, divided by the number of elements in the data set
median	median is the middle value in an odd number of ordered values of a data set, or the mean of the two middle values in an even number of ordered values in a data set

Algebra

slope of a line	$m = \frac{y_2 - y_1}{x_2 - x_1}$
slope-intercept form of the equation of a line	$y = mx + b$
point-slope form of the equation of a line	$y - y_1 = m(x - x_1)$
standard form of a quadratic equation	$y = ax^2 + bx + c$
quadratic formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Pythagorean Theorem	$a^2 + b^2 = c^2$
simple interest	$I = prt$ (I = interest, p = principal, r = rate, t = time)
distance formula	$d = rt$
total cost	total cost = (number of units) \times (price per unit)

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Mathematical Reasoning, Part 1

You may NOT use a calculator in Part 1.

1. The Great Pyramid in Egypt has a height of approximately 150 meters and a base of 50,000 square meters. In cubic meters, what is its approximate internal volume?
- A. 7,500,000
B. 5,000,000
C. 2,500,000
D. 750,000
2. If a woman sleeps only 6 hours per night and spends $\frac{4}{9}$ of her waking hours at work, then what fraction of the total 24-hour day (on a work day) is the woman at work?
- A. $\frac{1}{9}$
B. $\frac{1}{3}$
C. $\frac{4}{9}$
D. $\frac{3}{4}$
3. A class with 87 students has an average test score of 76 points. The number of students who scored above the average score is less than the number of students who scored below the average test score. Only 1 student scored exactly 76 points. It follows that the median student score

Select...	▼	76.
\leq		
$<$		
$=$		
$>$		
\geq		

4. A moving company charges \$50 per hour for each person working, plus an additional \$.50 per mile driven. If Fritz hires 3 movers for 2 hours of work apiece and the total distance driven is 40 miles, which of the following represents the equation for his total cost?
- A. $\$50 \times 3 + 40 \times (\$.5) \times 2$
B. $\frac{\$50 \times 3}{2} + 40 \times (\$.5)$
C. $\$50 \times 3 \times 2 + 40 \times (\$.5)$
D. $\$50 \times 3 \times 2 + \frac{40}{(\$.5)}$
5. Mindy invested \$500 in a savings account. After one year, her account balance was \$515. What percent yearly interest did her bank pay?

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Mathematical Reasoning, Part 2

You MAY use a calculator in Part 2.

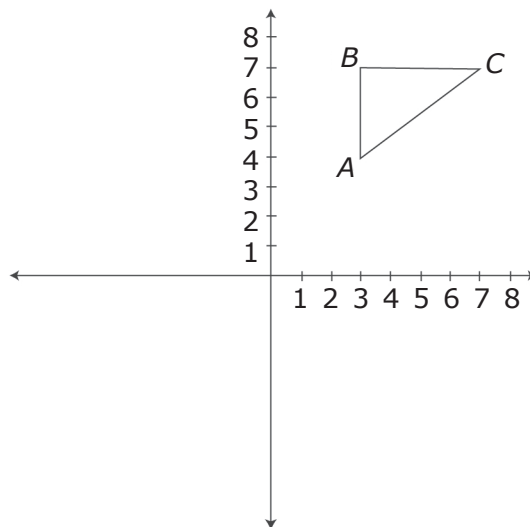
6. By law, a bus driver may drive a maximum of 9 hours per day. If the speed limit is 65 miles per hour and if a driver needs to cover 4,287 miles, then what is the minimum number of days in which the driver can make the trip?

A. 7
B. 8
C. 25
D. 66

7. Zarbini's gourmet grocery buys pickles in barrels that are 4 feet tall and measure 24 inches in diameter. What is the approximate volume (in cubic feet) of pickles that will fill a barrel with these dimensions?

A. 4
B. 12.6
C. 25.2
D. 150.7

Questions 8 and 9 refer to the following diagram.



8. The sum of the lengths of line segments AB and BC is

greater than
less than
equal to
equal to the square of

the length of line segment AC .

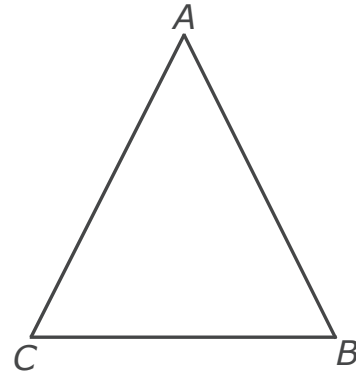
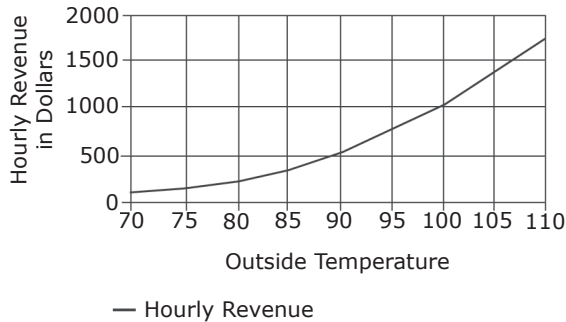
9. What is the difference between the area of the triangle and the length of the hypotenuse of the triangle?

A. 1
B. 5
C. 6
D. 7

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Mathematical Reasoning, Part 2

Questions 10 and 11 refer to the following graph. Question 12 refers to the following diagram.

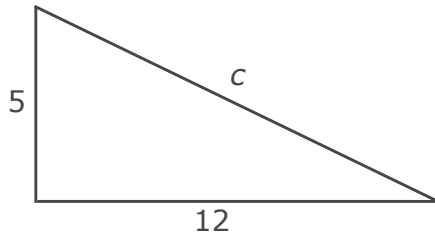


10. A shaved ice stand located near a beach records its hourly revenue as well as the temperature outside, as shown on the graph above. Approximately how much more revenue would be expected during a 3-hour shift with a temperature of 100° than at a shift of the same duration with a temperature of 90° ?
- A. \$150
B. \$500
C. \$750
D. \$1,500
11. The owner of the shaved ice stand institutes a policy to close the stand on any day on which the average revenue is likely to fall below \$250 per hour as predicted by the graph. On a given day, the temperature at the beginning of the shift is 70° and the temperature is expected to rise at a constant rate to 95° . Should the owner close the ice stand?
- A. No, because the average temperature during the day will be greater than 80° so the stand is likely to make more than \$250 per hour.
B. No, because the sum of the revenue at the beginning of the day and the revenue at the end of the day will be more than \$250 per hour.
C. Yes, because the midpoint between the revenue at the beginning of the day and the revenue at the end of the day is less than \$250 per hour.
D. Yes, because for at least half the day, the stand will be bringing in less than \$250 per hour.
12. For the triangle shown in the diagram above, both angle A and angle C measure 60° . If side AB has a length of 4 inches, what is the sum (in inches) of sides AC and BC?
- A. 12
B. 10
C. 8
D. 6

GO ON TO THE NEXT PAGE

Mathematical Reasoning, Part 2

Question 13 refers to the following diagram.



13. A triangular loading ramp has the dimensions shown in the figure above. Side c is the length. If a new ramp is made for a dock that is twice as high off the ground as the one with length c but with the same incline, what will the new ramp's length be (in feet)?
- A. 6.5
 - B. 13
 - C. 17
 - D. 26

Questions 14 and 15 refer to the following graph.

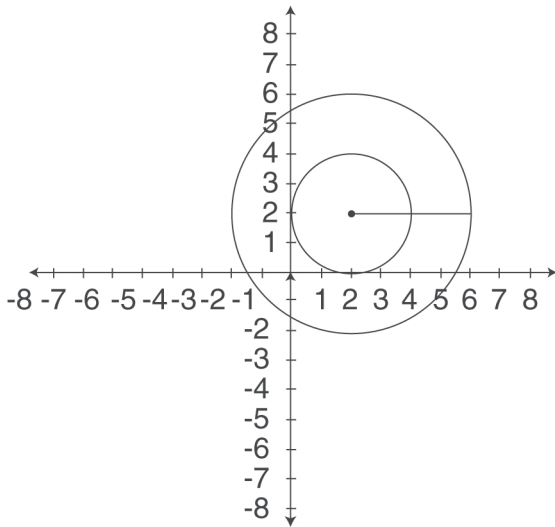


14. Indicate on the revenue line the minimum number of widgets that must be sold in order to avoid losing money. (For this practice test, write an X on the revenue line.)
15. Indicate on the revenue line the quantity sold for which the profit will be \$2,000. (For this practice test, write an X on the revenue line.)

GO ON TO THE NEXT PAGE

Mathematical Reasoning, Part 2

Questions 16 and 17 refer to the following graph.



16. The larger circle has

Select...	▼
twice	
three times	
four times	

the diameter and

Select...	▼
twice	
four times	
eight times	

the area of the smaller circle.

17. If a represents the point on the larger circle with the largest y -value, and if b represents the point on the smaller circle with the smallest y -value, then what is the distance from point a to point b ?
- A. 2
B. 4
C. 6
D. 8

18. If a plane travels at 280 miles per hour, how many miles will it travel in 12 minutes?
- A. 56
B. 45
C. 36
D. 28
19. A can of fruit weighs w ounces. The fruit itself, without the can, weighs f ounces. Which equation can be used to find C , the weight of the empty can?
- A. $C = w + f$
B. $C = w - f$
C. $C = f - w$
D. $C = f$
20. A square has sides that measure 5 inches. The square is then divided in half vertically and horizontally, creating 4 smaller squares. What would the total perimeter of the 4 smaller squares be (in inches)?
- A. 5
B. 6.25
C. 25
D. 40
21. If $\frac{1}{5}$ of $x = 15$, what is $\frac{4}{3}$ of x ?
- A. 4
B. 25
C. 75
D. 100

GO ON TO THE NEXT PAGE

Mathematical Reasoning, Part 2

22. A jar of marbles contains two sizes of marbles: normal and jumbo. There are 84 normal size marbles. If $\frac{2}{9}$ of the marbles are jumbo size, then how many marbles total are in the jar?

A. 19
 B. 103
 C. 108
 D. 378

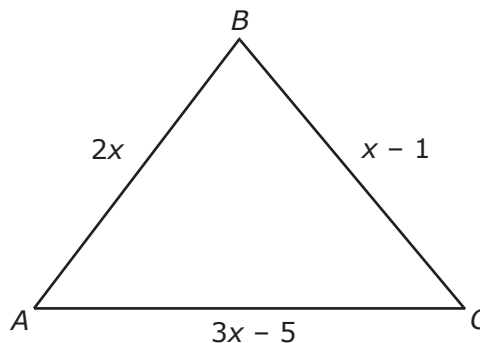
23. For her first 3 years with a company, Marissa earned \$45,200 each year. For the next 5 years she earned \$55,400 per year. What was the average amount that Marissa earned per year over the 8-year period?

A. \$49,075
 B. \$50,300
 C. \$51,575
 D. \$52,100

24. To rent a convention hall costs a \$400 base fee, plus an additional \$5 per attendee. If x legionnaires are attending an event, which of the following equations indicates (in dollars) the average cost per legionnaire C of renting the hall?

A. $C = 400 + 5x$
 B. $C = \frac{400 + 5x}{x}$
 C. $C = \frac{400 + 5x}{5}$
 D. $C = \frac{400 + 5x}{400}$

Questions 25 and 26 refer to the following diagram.



25. In the figure above, if the perimeter of triangle ABC is 27, what is the value of x ?

26. Given that the perimeter of the triangle is 27, indicate below the correct relationship among the 3 angles of the triangle. (For this practice test, circle your selections.)

Select... ▼		Select... ▼	
A		A	
B	<	B	<
C		C	

Select... ▼
 A
 B
 C

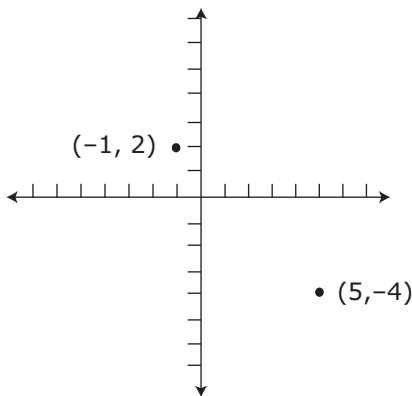
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Mathematical Reasoning, Part 2

27. A farmer purchases 200 lbs. of feed each month to support 35 cows. How much total feed (in lbs.) will he need per month, at this rate, if he acquires an additional 245 cows?
- A. 43
 B. 243
 C. 1,400
 D. 1,600

28. To rent a community center for a school prom costs a base fee of \$550 and an additional fee of \$6 per person in attendance. The organizers expected 350 attendees, but in fact a total of 377 people attended. How much greater was the actual fee than the fee the organizers had expected to pay?
- A. \$162
 B. \$712
 C. \$2,262
 D. \$2,812

Questions 29 and 30 refer to the following coordinate axis.



29. What are the coordinates of the midpoint of the two points shown on the coordinate axis above?
- A. (2, -1)
 B. (3, -3)
 C. (3, -1)
 D. (2, -2)

30. Which of the following equations represents the line that passes through the two given points?

- A. $y = 2x - 14$
 B. $y = 2x + 3$
 C. $y = -x - 1$
 D. $y = -x + 1$

31. At a law firm, new associates earn an average of \$2,800 more per month than new paralegals do. The firm employs 15 new associates and z more new associates than new paralegals. If the the average pay for a new paralegal is represented by p , then use numbers and variables from the figure bank to indicate the correct equation for the total monthly payroll of these new employees. (For this practice test, write the figures in the boxes.)

$$\text{Total} = (\boxed{} \times (\boxed{} + p)) + ((15 + \boxed{}) \times \boxed{})$$

p

12

z

2,800

15

32. The scale on a map of the moon's surface indicates that 0.4 inches = 100 miles. Sen wants to know the distance between two large craters. If on the map, the distance between the two craters is 7.4 inches, then what is the actual distance, in miles, between the two craters?

- A. 74 miles
 B. 296 miles
 C. 1,850 miles
 D. 2,960 miles

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Mathematical Reasoning, Part 2

Questions 33 through 35 refer to the following table.

Migration Sightings			
Bird Type	2008	2009	2010
Cardinal	24	31	
Finch	40	37	
Grosbeak	19	23	
Harrier	31	38	
Sparrow	28	24	

33. Choose from the figure box below to indicate the correct relationship among the three types of birds that showed an increase in the number of sightings from 2008 to 2009. The bird types are to be ordered from least percent increase in sightings to greatest percent increase in sightings. (For this practice test, circle your selections.)

% increase of Select... ▼

Cardinal
Finch
Grosbeak
Harrier
Sparrow

< % increase of Select... ▼

Cardinal
Finch
Grosbeak
Harrier
Sparrow

< % increase of Select... ▼

Cardinal
Finch
Grosbeak
Harrier
Sparrow

34. Considering only these 5 bird types, what was the total percentage increase in sightings from 2008 to 2009? (Round your answer to the nearest integer.)

- A. 7%
- B. 8%
- C. 14%
- D. 18%

35. Assume that in 2010, the new sightings levels for each bird type increased or decreased by identical amounts as they had from 2008 to 2009. Select the appropriate sightings numbers from the figure box below, and write them in the 2010 column to complete the chart. (Not all of the numbers will be used, but all of the empty boxes should be filled).

20	26	27	30
33	34	38	45

36. One year ago Harold invested \$24,000 in a bank bond that offers 3% annual interest. At the same time, Maude invested $\frac{1}{3}$ that amount in a fund that produced an annual yield of 8%. At the end of the year, what was the difference between Harold's interest earnings and Maude's gains from her investment yield?

- A. \$80
- B. \$240
- C. \$640
- D. \$5,040

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Mathematical Reasoning, Part 2

37. Each number below is a possible solution for $2x^2 - 3 \leq 15 - x$ EXCEPT
- A. -3
 - B. 0
 - C. 1
 - D. 3
38. A pizza store sells two sizes of pizzas, one with a circumference of 22π inches and a larger with a circumference of 27π inches. Each pizza is cut from edge to center into 8 identical slices and the length of the smaller slice (measured along the edge from the tip to the end of the crust) is compared to the length of the larger slice. How much longer, in inches, is the edge of the larger pizza slice?
- A. 2.5
 - B. 3
 - C. 5
 - D. 5π
39. 384 conference attendees need to take tour shuttles into the city. If each bus can carry a maximum of 26 passengers, then what is the minimum number of shuttle trips required to transport all the passengers?

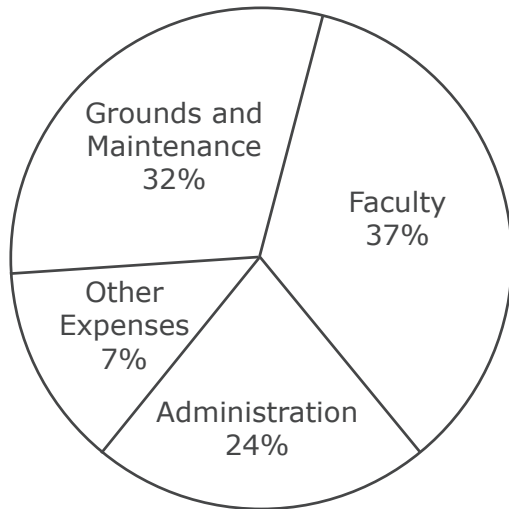
40. A small copy shop spent 24% of its monthly revenue on supplies, 17% on renting the building, and 33% on payroll and taxes. If after paying these expenses, \$7,384 dollars in profit is left, then how much did the copy shop spend on rent?
- A. \$3,976
 - B. \$4,828
 - C. \$19,198
 - D. \$28,400
41. If $x^2 - x = 12$, then which of the following could be the value of x^2 ?
- A. 1
 - B. 9
 - C. 36
 - D. 144

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Mathematical Reasoning, Part 2

Questions 42 and 43 refer to the following pie chart.

2012 Allocation of Endowment Funds for University X



42. If the total income from the endowment in 2012 was \$1.2 million, then how much more money went to Faculty salaries than to Administration?
- A. \$130,000
B. \$156,000
C. \$180,000
D. \$684,000
43. If in 2013, the income from the endowment increases from \$1.2 million to \$1.6 million, and the percentage distribution remains constant, then by how much will the funds available for "other expenses" increase? (Enter your result in dollars.)
44. Currently a sports league has 33 teams with 24 players each. If the membership of each team is going to be reduced to 18 players, then how many additional teams will need to be formed to include all the remaining players?
45. If the equation of two lines is given by $y = -28x - 4$ and $y = 2x + 11$, then at which of the following points do the two lines intersect?
- A. $\left(-\frac{9}{2}, 2\right)$
B. $(2, 15)$
C. $\left(-\frac{1}{2}, 10\right)$
D. $(-26, 7)$
46. A bell rings every 2 hours. A second bell rings every 3 hours. A third bell rings every 4 hours. If all three bells ring at 9:00 am, when will all three bells ring again?
- A. 12:00 pm
B. 2:00 pm
C. 6:00 pm
D. 9:00 pm

END OF TEST

Social Studies

Welcome!

Here is some information that you need to know before you start this test:

- You should not spend too much time on a question if you are not certain of the answer; answer it the best you can, and go on to the next question.
- If you are not certain of the answer to a question, you can mark your answer for review and come back to it later.
- You have **70 minutes** to complete this test.

Turn the page to begin.

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Social Studies

Questions 1 and 2 refer to the following interpretation of the U.S. Constitution.

The first ten amendments to the U.S. Constitution are called the Bill of Rights. They were originally added to grant both individual citizens and states certain rights that could not be violated by the federal government. The 14th Amendment, which was adopted in 1868 as part of the settlement of the Civil War, widened the applications of the Bill of Rights. One sentence of this amendment states: "No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty or property, without due process of law, nor deny to any person...equal protection under the law."

This amendment has since been interpreted as protecting the individual citizen's rights from encroachment by the states.

1. Which of the following descriptions of the authors of the amendments to the Constitution is supported by the passage?
 - A. They were legal scholars.
 - B. They believed that the government and the church should be united.
 - C. They believed that the best type of government would have ultimate authority.
 - D. They were wary of giving the government too much power over individual rights.

2. All of the following actions by a particular state would violate the 14th Amendment EXCEPT
 - A. a zoning law prohibiting naturalized citizens from operating ethnic restaurants.
 - B. legislation requiring citizens to pay taxes regardless of their beliefs.
 - C. a bill requiring children of citizens of a particular ethnic origin to attend separate public schools.
 - D. sentencing a person accused of murder without a trial.

Question 3 refers to the following statement about Amelia Earhart.

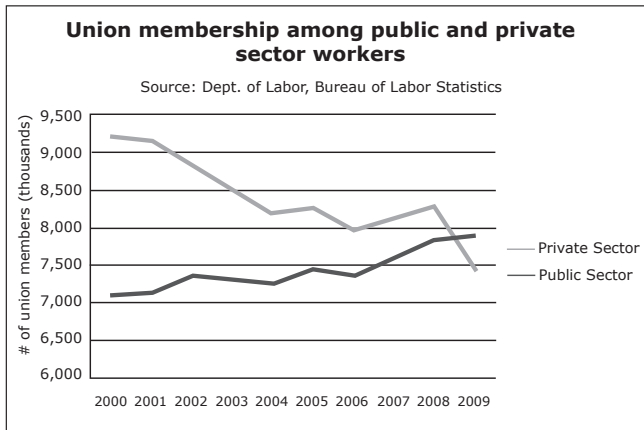
When Amelia Earhart made her first successful trip across the Atlantic with her colleague, Captain Manning, she was greeted on arrival by the mayor of Southampton in England. Despite most of the favorable reactions of the press to her accomplishment, one of the London papers stated that she was "a pleasant young woman who should be capable of spending her time to better advantage in domestic pursuits." Many members of the American press characterized her as a "foolhardy girl" and as a publicity seeker. Perhaps as a result, Earhart resolved to tackle her next mission alone.

3. In the author's opinion, what factor contributed to Amelia Earhart's decision to fly alone?
 - A. a love of her country
 - B. the public's ignorance of aviation
 - C. the patriotism of the British
 - D. a lack of respect by some members of the press for women's abilities

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Social Studies

Question 4 refers to the following chart.

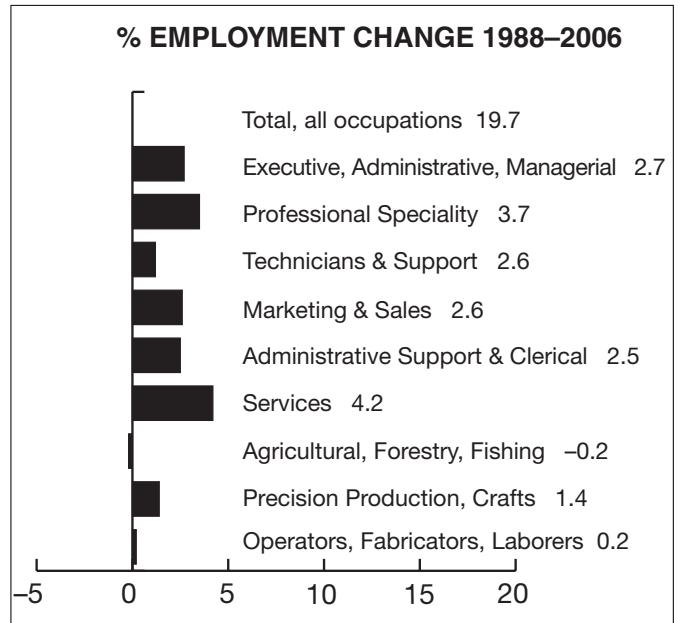


4. Determine whether or not each statement below is supported by the information in the graph. Drag the statements into the "Yes" box if so and the "No" box if not. (For this practice test, write the statement letter in the correct box.)

Yes	No

- (a) "There were about 7,500,000 public sector union members in 2007."
- (b) "There were about 9,000,000 private sector employees in 2002."
- (c) "There was an increase in both private and public sector union membership from 2006 to 2008."
- (d) "For the years shown, the number of public sector employees peaked in 2009."
- (e) "Combined union membership in both public and private sectors generally decreased from 2000 to 2009."

Question 5 refers to the following chart.

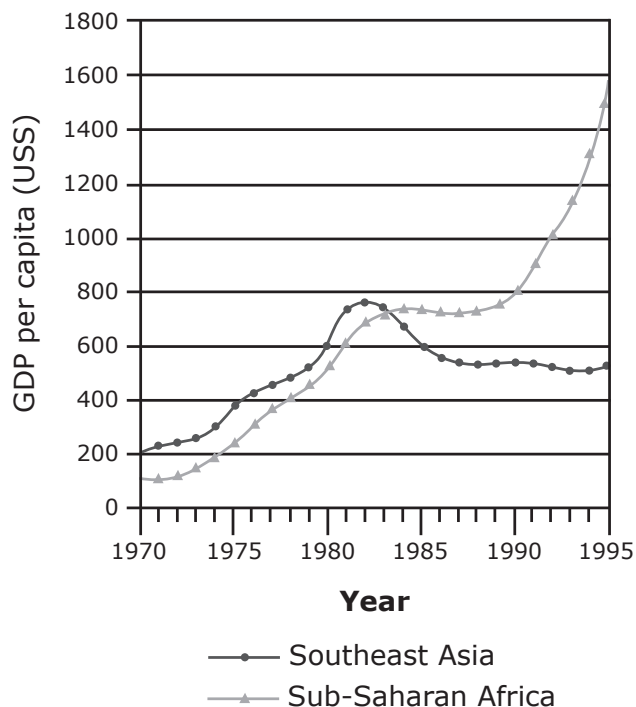


5. The information in the chart supports the conclusion that from 1988 to 2006 there has been
- A. an increase in agricultural jobs.
 - B. more growth in administrative support jobs than in any other occupation.
 - C. more growth in administrative support jobs than in services and technicians and support jobs combined.
 - D. less growth in precision production than in professional specialties.

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Social Studies

GDP per capita in Southeast Asia and Africa, 1970–1995



GDP, or Gross Domestic Product, per capita is the average value of the goods and services produced by the citizens of a country in a year. Economists use GDP to compare wealth between individuals and nations.

6. Based on this information, which statement is an **OPINION**, rather than a fact, about the GDP per capita of these nations?
- A. The GDP per capita for Southeast Asia has increased substantially in recent years.
 - B. The GDP per capita of Southeast Asia is now higher than that of Sub-Saharan Africa.
 - C. Sub-Saharan Africa is in desperate need of foreign aid in order to sustain its economy.
 - D. For many years, Southeast Asia and Sub-Saharan Africa had similar patterns of economic growth.

7. President John Quincy Adams wrote that "the whole continent of North America appears to be destined by Divine Providence to be peopled by one nation, speaking one language, professing one general system of religious and political principles, and accustomed to one general tenor of social usages and customs. For the common happiness of them all, for their peace and prosperity, I believe it is indispensable that they should be associated in one federal Union."

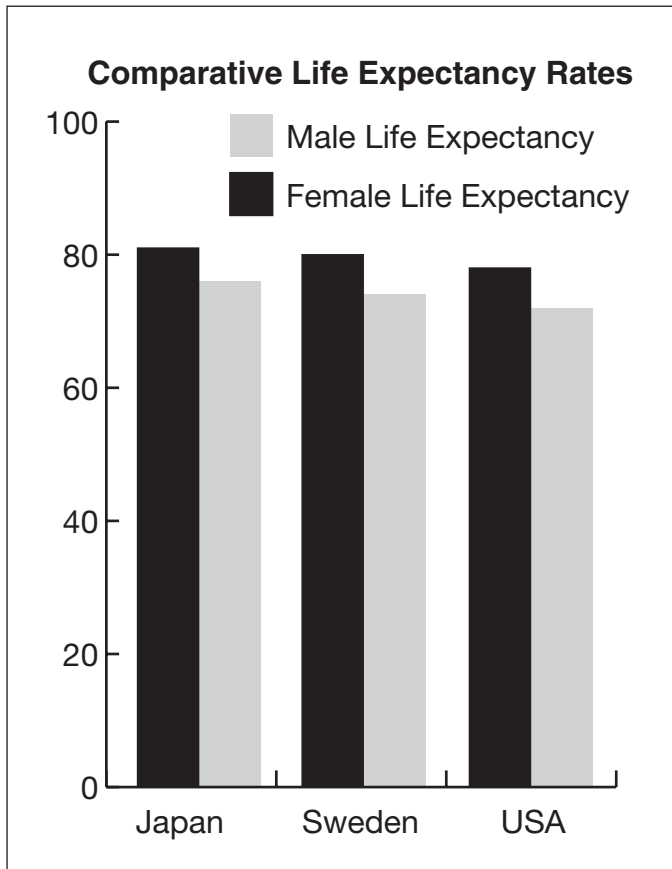
The idea that the United States was destined and divinely ordained by God to expand across the entire North American continent is called

- A. Manifest Destiny.
- B. capitalism.
- C. imperialism.
- D. eminent domain.

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Social Studies

Questions 8 and 9 refer to the following graph.



8. According to the above graph, a member of which of the following groups is likely to have the shortest life span?
- A. Japanese women
 - B. Swedish women
 - C. American men
 - D. Japanese men

9. Which statement is the most likely explanation for the differences in life expectancy shown in the graph?
- A. Asian men tend to work more hours per week than do men from other countries.
 - B. Life expectancy is higher in North American countries.
 - C. Japan provides free or low-cost health care for all Japanese citizens.
 - D. There are fewer natural disasters in Japan than there are in other parts of the world.

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Social Studies

Questions 10 through 12 refer to the following interpretation of the role of immigrants in American society.

The society of the United States, perhaps more than that of any other country, is a “melting pot” society. America is a nation of immigrants and is reputed to be a haven for the oppressed and a land of equal opportunity for all. Symbols such as the Statue of Liberty and rags-to-riches success literature reinforce this reputation. Immigrants to the United States come in search of new opportunities, increased social mobility, and an environment free from political unrest and oppression.

On the other hand, America is not free from bigotry. In the past, each new immigrant group has been greeted with prejudice and discrimination by the groups that settled before them.

There have been many steps taken in recent history to make American society as free and equal as our founders had intended. There has been much legislation passed over the last three decades to help to ensure the equal treatment of all individuals and groups. With this legislation and improved public awareness, perhaps American society can live up to its “melting pot” image.

10. Which of the following observations about immigration to the United States is supported by the article?
- A. Americans are always friendly to every group of people making a new home here.
 - B. Immigrants come to the United States expecting not to find jobs.
 - C. The United States wants to shed its reputation as a “melting pot” society.
 - D. Efforts have been made to ensure that America is receptive to immigrants.
11. According to the article, people immigrate to the United States because
- A. the United States offers political stability and economic opportunity.
 - B. there is a shortage of available land in their countries.
 - C. American society discourages social mobility.
 - D. they do not experience political unrest and oppression in their home countries.
12. Which of the following statements is NOT directly supported by the article?
- A. There are steps being taken to decrease the amount of bigotry in the United States.
 - B. People have immigrated to the United States because they were unhappy with life in other countries.
 - C. People have immigrated to the United States because of the possibility of new opportunities and social mobility.
 - D. Immigrants make more money after coming to America.

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Question 13 refers to the following photo.

AMERICAN CITIZENS!

We appeal to you in all calmness. Is it not time to pause? Already the enemies of our dearest institutions, like the foreign spies in the Trojan horse of old, are within our gates. They are disgorging themselves upon us, at the rate of HUNDREDS OF THOUSANDS EVERY YEAR! They aim at nothing short of conquest and supremacy over us.

A PAPER ENTITLED THE

IN FAVOR OF

The protection of American Mechanics against Foreign Pauper Labor.
 Foreigners having a residence in the country of 21 years before voting.
 Our present Free School System.
 Carrying out the laws of the State, as regards sending back Foreign Paupers and Criminals.

OPPOSED TO

Papal Aggression & Roman Catholicism.
 Foreigners holding office.
 Raising Foreign Military Companies in the United States.
 Nunneries and the Jesuits.
 To being taxed for the support of Foreign paupers millions of dollars yearly.
 To secret Foreign Orders in the U. S.

We are burdened with enormous taxes by foreigners. We are corrupted in the morals of our youth. We are interfered with in our government. We are forced into collisions with other nations. We are tampered with in our religion. We are injured in our labor. We are assailed in our freedom of speech.

The PATRIOT is Published by J. E. Farwell & Co., 32 Congress St., Boston, And for Sale at the Periodical Depots in this place. Single copies 4 Cents.

13. This 1852 advertisement expresses opposition to "foreign pauper labor" and "foreigners holding office." With which of the following policies would the writer of this advertisement be likely to disagree?
- A. a trade embargo to keep cheap foreign goods out of the United States
 - B. a new law that prevents immigration unless the immigrant is rich
 - C. a voter registration drive that targets only American-born persons
 - D. a constitutional amendment giving new immigrants voting rights

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Social Studies

Question 15 refers to the following sources.

TAB 1:

The following excerpt is taken from the Preamble to the Constitution of the United States of America:

"We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America."

TAB 2:

The following excerpt is taken from the Declaration of Independence:

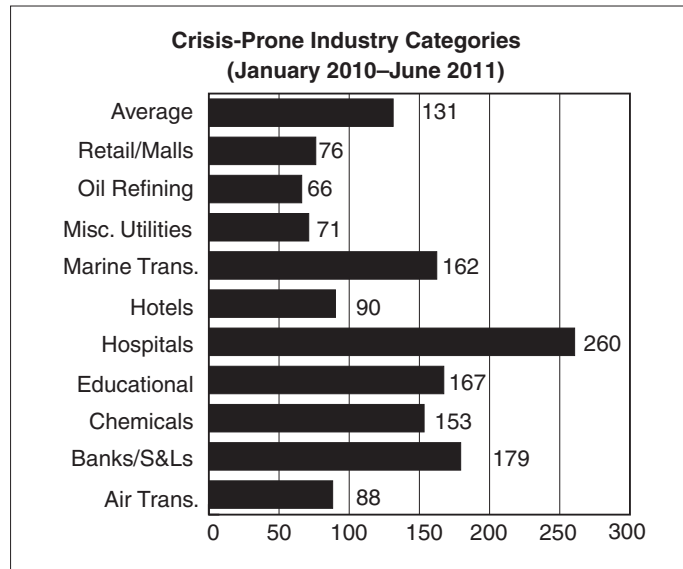
"We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty and the pursuit of Happiness."

15. According to the excerpts provided, which of these principles is mentioned in the Preamble to the Constitution but NOT in the Declaration of Independence?
- A. the desire for freedom
 - B. a united defense
 - C. the desire for happiness
 - D. the equality of all citizens

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Social Studies

Question 16 refers to the following graph.

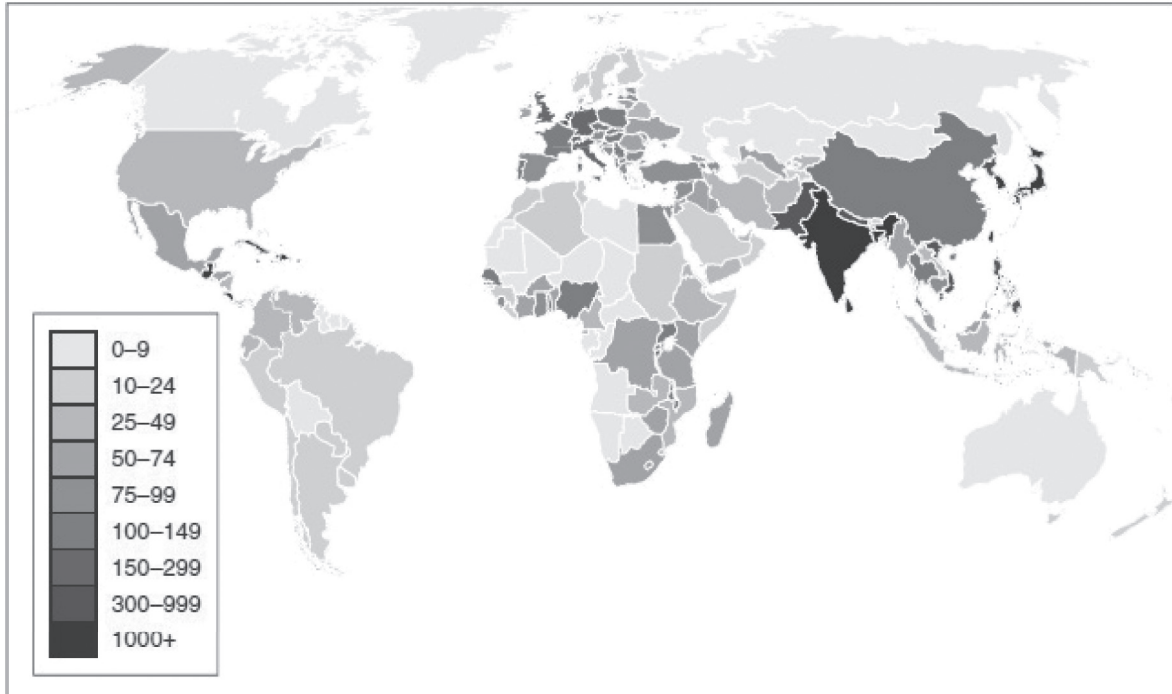


16. According to the graph, which of the following types of industries was least likely to experience a crisis?
- A. education
 - B. chemical
 - C. hotel
 - D. oil refining

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Social Studies

Questions 17 and 18 are based on the following graph:



Number of People Per Square Mile

17. According to the graph, what are the most densely populated continents?
- A. South America and Europe
 - B. Asia and North America
 - C. Europe and Asia
 - D. South America and North America
18. What factors are the most influential in determining population density?
- A. climate and geography
 - B. race and language
 - C. religion
 - D. public sanitation and health

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Social Studies

Question 19 refers to the following sources:

TAB 1:

The following excerpt is from an article by Brian O’Sullivan from the *New York Morning News*, December 1845:

“And that claim is by the right of our manifest destiny to overspread and to possess the whole of the continent which Providence has given us for the development of the great experiment of liberty and federated self-government entrusted to us.”

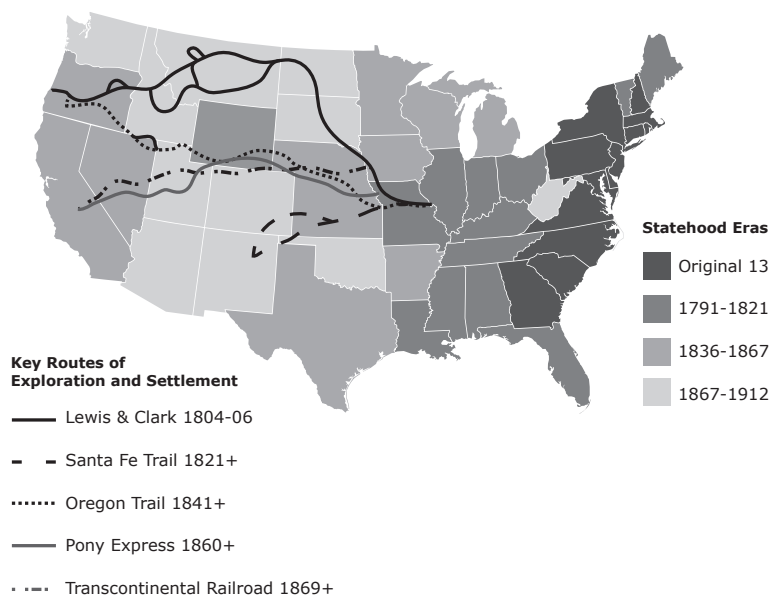
TAB 2:

“Most Democrats were wholehearted supporters of expansion, whereas many Whigs (especially in the North) were opposed. Whigs welcomed most of the changes wrought by industrialization but advocated strong government policies that would guide growth and development within the country’s existing boundaries; they feared (correctly) that expansion raised a contentious issue of the extension of slavery to the territories. On the other hand, many Democrats feared industrialization the Whigs welcomed....For many Democrats, the answer to the nation’s social ills was to continue to follow Thomas Jefferson’s vision of establishing agriculture in the new territories in order to counterbalance industrialization.”

—John Mack Faragher et al. *Out of Many: A History of the American People*

TAB 3:

Westward Expansion of the United States



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Social Studies

19. Which of the following conclusions is most consistent with the excerpts and map?
- A. Elected in 1828, President Andrew Jackson was a Democrat who opposed Westward Expansion.
 - B. Inspired by the principle of Manifest Destiny, President James K. Polk, a Democrat elected in 1845, sought to secure American control of the Southwest after the Mexican-American War.
 - C. Whig presidents such as William Henry Harrison, elected in 1841, failed to gather support from the American people because of their insistence on Westward Expansion.
 - D. Many Democrats, including Franklin Pierce, elected in 1853, opposed the Transcontinental Railroad, since it threatened to expand slavery to Western territories.

20. The following is a quote by President Abraham Lincoln:

"A majority held in restraint by constitutional checks and limitations, and always changing easily with deliberate changes of popular opinions and sentiments, is the only true sovereign of a free people."

The above quote most closely describes which of the following forms of government?

- A. a constitutional republic
- B. a monarchy
- C. a pure democracy
- D. anarchy

21. With improvements in technology, production becomes more efficient, increasing the output per worker of a given industry. Product quality rises, profits and wages increase, and the economy improves overall. In short, both workers and employers benefit.

Which of the following opinions contradicts the above conclusion about improvements in technology?

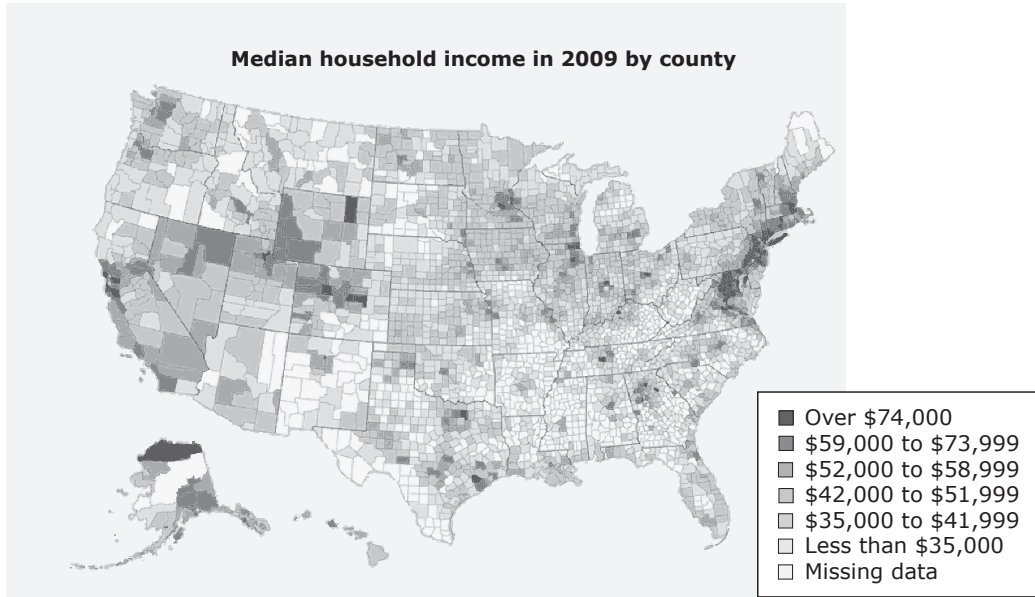
- A. New technology will cause companies to decrease the size of their workforce in order to cut costs.
- B. Product quality increases consumer satisfaction, which leads to greater company profits.
- C. When businesses succeed, more money is reinvested into the economy.
- D. Efficiency is a key factor in ensuring a business's success.

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Social Studies

Question 22 refers to the following maps:

TAB 1:



TAB 2:



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Social Studies

22. Based on this data, which conclusion about the U.S. economy is true?
- A. All counties with household incomes of \$74,000 or more in 2009 had the lowest unemployment rates.
 - B. Southeastern states generally have a lower median income than Northeastern states.
 - C. Only Plains states have unemployment rates below 5.0%.
 - D. Hawaii has a lower rate of employment than Alaska.

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Social Studies

Question 23 refers to the following sources:

TAB 1:

The following excerpt is taken from the Fourteenth Amendment to the United States Constitution:

“Section 1. All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.”

TAB 2:

“We consider the underlying fallacy of the plaintiff’s argument to consist in the assumption that the enforced separation of the two races stamps the colored race with a badge of inferiority. If this be so, it is not by reason of anything found in the act, but solely because the colored race chooses to put that construction upon it.”

–Justice Henry B. Brown, U.S. Supreme Court, *Plessy vs. Ferguson*, 1896

TAB 3:

“We conclude that, in the field of public education, the doctrine of “separate but equal” has no place. Separate educational facilities are inherently unequal. Therefore, we hold that the plaintiffs and others similarly situated for whom the actions have been brought are, by reason of the segregation complained of, deprived of the equal protection of the law.”

–from U.S. Supreme Court, *Brown vs. Board of Education*, 1954

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Social Studies

23. Which of the following conclusions is best supported by the passages?
- A. In *Brown vs. Board of Education*, the Supreme Court relied on past legal decisions to help shape its ruling.
 - B. *Plessy vs. Ferguson* upheld the Fourteenth Amendment's guarantee of "equal protection" under the law.
 - C. *Brown vs. Board of Education* upheld the doctrine of "separate but equal."
 - D. *Brown vs. Board of Education* found that "separate but equal" facilities were a violation of the Fourteenth Amendment.
24. The modern cotton gin was patented in 1794 by Eli Whitney. It allowed for the easier separation of cotton fibers from their seeds. Why was the cotton gin so revolutionary?
- The cotton gin
- A. caused the massive growth of the wool industry in America.
 - B. caused the economic destruction of rural farmland.
 - C. ended the need for slavery.
 - D. caused the expansion of the cotton industry in the American South.

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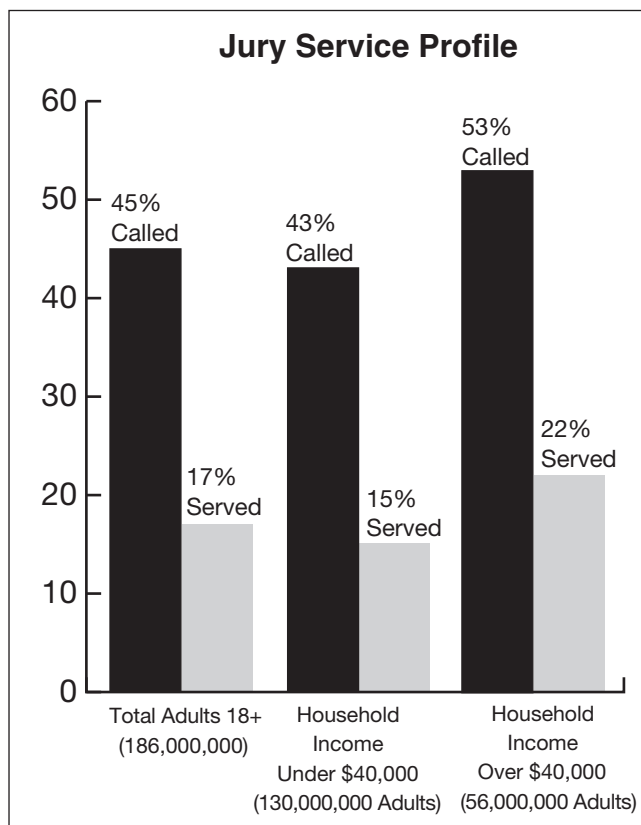
Social Studies

Question 25 refers to the following passage.

Interpreting the U.S. Constitution is so complex a task that it has become its own legal specialty, constitutional law. One example of the complexity of the Constitution is an interpretation of the 13th Amendment, which states that there shall be no "involuntary servitude" except as a punishment for a crime. Due to this interpretation, Congress was reluctant for a long time to pass any draft resolutions in times of peace. Finally, in 1940, only one year before our entrance into World War II, Congress approved the first peacetime draft in our history.

25. What conclusion is supported by this statement about the interpretation of the Constitution?
- A. A document that needs amendments is not a reliable guide for government policy.
 - B. A document that can be reinterpreted is not an adequate method for resolving legal questions.
 - C. A text that causes controversy does more harm than good.
 - D. Interpretations of the Constitution can change, which in turn affect decisions made by lawmakers.

Question 26 refers to the following graph.



26. Which of the following statements is supported by the survey on jury service represented in the table?
- A. People with incomes under \$40,000 are twice as likely to be called as are those with higher incomes.
 - B. A greater percentage of adults from households with incomes of more than \$40,000 have served on juries than the percentage of those from households with lower incomes.
 - C. People with lower incomes are more likely to want to serve on juries.
 - D. Most jurors have incomes between \$30,000 and \$35,000.

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Social Studies

Questions 27 through 29 refer to the following information about energy production.

Three of the most common sources of energy are fossil fuels, nuclear power, and hydroelectric power. Each of these three methods of energy production has its advantages and disadvantages.

Fossil fuels are the most widely used energy source in the United States. The burning of oil and coal derivatives releases energy that is used to boil water. The released steam turns turbines and produces energy. Today, fossil fuels are relatively abundant, which makes this form of energy production inexpensive. However, one of the problems with fossil fuels is that burning oil and coal derivatives releases chemicals that are harmful to the environment.

Nuclear power harnesses the energy contained in atoms. The energy released is used to convert water to steam, which in turn drives turbines. This form of energy production has proven to be even less expensive than fossil fuels, but there is no foolproof method for storing all of the dangerous by-products from nuclear power plants.

Hydroelectric power is produced by using the force of a river to turn turbines. This is the cleanest of the three methods of energy production, but not all communities have access to rivers, and rivers with hydroelectric plants are much more vulnerable to the effects of erosion.

27. Which of the following would most likely result in an increase in the use of nuclear power?
- A. the invention of a safe radioactive-waste disposal method
 - B. the discovery of a cleaner method of burning coal
 - C. a decrease in taxes on fossil fuels
 - D. increased oil exploration in Alaska
28. What do all three forms of energy production have in common?
- A. smoke
 - B. smog
 - C. erosion
 - D. turbines
29. Which of the following communities would most likely use hydroelectric power?
- A. a desert community with little or no fossil fuel resources
 - B. a town adjacent to a large river
 - C. a community with large oil reserves
 - D. a community in coal-rich West Virginia

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Social Studies

Question 30 refers to the following cartoon:



"The Big Stick in the Caribbean Sea"

30. The above cartoon depicts which famous American in which major war?
- A. Theodore Roosevelt in the Spanish-American War
 - B. Douglas MacArthur in World War II
 - C. Count Frontenac in King William's War
 - D. Norman Schwarzkopf in the Persian Gulf War

Question 31 refers to the following excerpt from U.S. history.

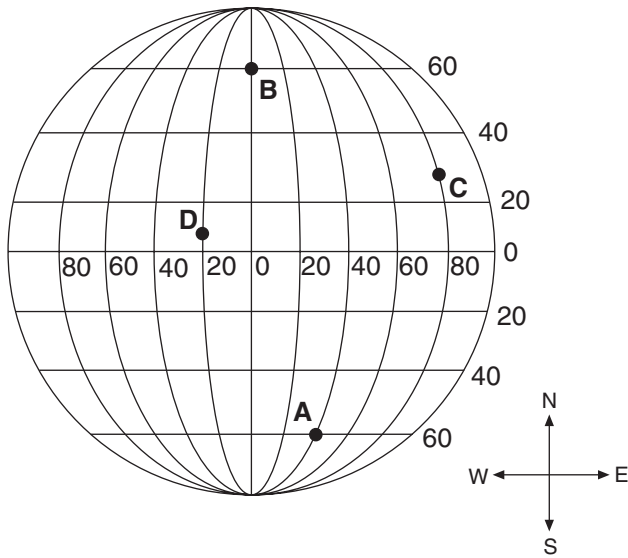
Development in California during the gold rush of 1849 was characterized by exploitation of the wilderness for economic gains. Entire forests were razed for lumber, and beautiful valleys were dammed up and lost forever to provide water pressure for strip mining. Such atrocities continued unhindered until one man stepped forward to argue on the behalf of the wilderness. John Muir almost single-handedly convinced President Roosevelt to create one of the nation's first national parks in Yosemite Valley, thereby protecting that portion of land from the dangers of development.

31. Which of the following might describe John Muir's opinions regarding the California wilderness?
- A. Economic interests should outweigh sentimental interests.
 - B. It is acceptable to destroy natural beauty in some cases.
 - C. Things that humans value should be used for human benefit.
 - D. Some things have value that cannot be measured in monetary terms.

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Social Studies

Question 32 refers to the following globe.



32. Which of the following lists the points on the globe from west to east?
- A. D, A, C, B
 - B. C, B, D, A
 - C. A, C, B, D
 - D. D, B, A, C
33. Hurricanes are most seriously a threat to cities along the coast of the Atlantic Ocean and the Gulf of Mexico. Which city is NOT seriously threatened by hurricanes?
- A. Orlando, Florida
 - B. New Orleans, Louisiana
 - C. Chicago, Illinois
 - D. Virginia Beach, Virginia

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Social Studies

Question 34 refers to the following excerpt from a proclamation.

"Whereas, it has become necessary to call into service not only volunteers but also portions of the militia of the States by draft in order to suppress the insurrection existing in the United States, and disloyal persons are not adequately restrained by the ordinary processes of law from hindering this measure and from giving aid and comfort in various ways to the insurrection;

Now, therefore, be it ordered, first, that during the existing insurrection and as a necessary measure for suppressing the same, all Rebels and Insurgents, their aiders and abettors within the United States, and all persons discouraging volunteer enlistments, resisting militia drafts, or guilty of any disloyal practice, affording aid and comfort to Rebels against the authority of United States, shall be subject to martial law and liable to trial and punishment by Courts Martial or Military Commission."

—President Abraham Lincoln, 1862

34. Determine whether or not the following statements are supported by the quote above. Drag and drop the statements into the "Yes" box if so and the "No" box if not. (For this practice test, write the statement letters in the appropriate boxes.)

Yes

No

--	--

(a) "Felons previously convicted in civilian courts would be subject to court-marshal and punishment."

(b) "Those attempting to suppress rebels and insurgents would be subject to court-marshal and punishment."

(c) "Those resisting the military draft would be subject to court-marshal and punishment."

(d) "Volunteers for the militia would be subject to court-marshal and punishment."

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Social Studies

Question 35 refers to the following excerpt from a speech.

"I have never been a quitter. To leave office before my term is completed is abhorrent to every instinct in my body. But as President, I must put the interest of America first. America needs a full-time President and a full-time Congress, particularly at this time with problems we face at home and abroad. To continue to fight through the months ahead for my personal vindication would almost totally absorb the time and attention of both the President and the Congress in a period when our entire focus should be on the great issues of peace abroad and prosperity without inflation at home. Therefore, I shall resign the Presidency effective at noon tomorrow. Vice President Ford will be sworn in as President at that hour in this office."

—President Richard Nixon, August 1974

35. The above quote supports the conclusion that, after the Watergate scandal, President Nixon
- A. was forced to leave office after being impeached by the Congress.
 - B. resigned before completing his term of office.
 - C. appointed Vice President Ford as interim president.
 - D. continued on as full-time president, despite pressure from Congress.

END OF TEST

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Science

Welcome!

Here is some information that you need to know before you start this test:

- You should not spend too much time on a question if you are not certain of the answer; answer it the best you can, and go on to the next question.
- If you are not certain of the answer to a question, you can mark your answer for review and come back to it later.
- You have **90 minutes** to complete this test.
- There are two Short Answer questions on this test.
- You should plan to spend about 10 minutes on each Short Answer question.

Turn the page to begin.

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Science

1. The table below lists the normal ranges of various chemicals found in human blood.

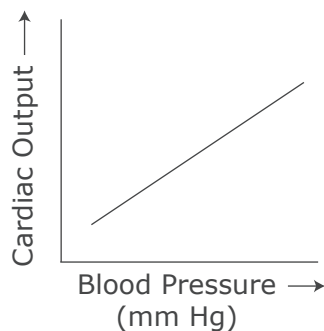
Substance	Normal Range
total cholesterol	125–200 mg/dL
HDL cholesterol	under 40 mg/dL
LDL cholesterol	under 130 mg/dL
triglycerides	under 150 mg/dL

Which of the following statements is accurate based on the table above?

- A. A total cholesterol level of 150 is considered normal.
- B. A triglyceride level of 180 is considered normal.
- C. An LDL cholesterol level of 110 is considered above normal.
- D. A triglyceride level of 100 is considered abnormal.

2. Cardiac output is the amount of blood a human heart pumps out per minute. Increases in heart rate, blood pressure, and cardiac muscle strength all lead to higher cardiac output. Below is a graph that shows the effects of blood pressure on cardiac output.

Cardiac Output and Blood Pressure



Which of the following conclusions is best supported by the graph?

- A. As blood pressure increases, cardiac output decreases.
- B. As blood pressure increases, cardiac output increases.
- C. Cardiac output is measured in mm HG.
- D. Cardiac output increases and decreases irregularly as blood pressure changes.

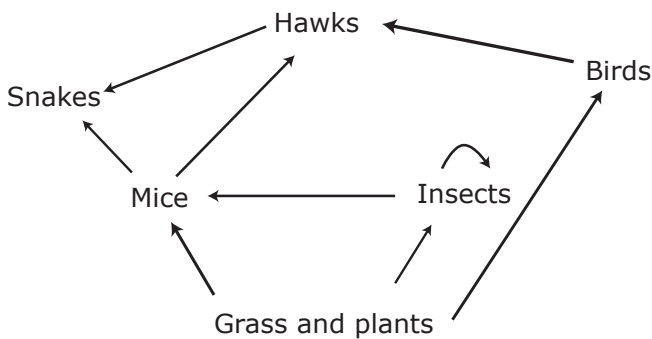
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Science

Questions 3 and 4 are based on the passage and food web shown below.

A food web is a diagram that shows which organisms feed on which other organisms in a community. The arrows point from the food sources to the consumers. Some animals are herbivores, meaning that they eat only plants, while some are carnivores, meaning that they eat only animals. Still others are omnivores, meaning that they eat both plants and animals. Below is a food web for a grassland ecosystem.

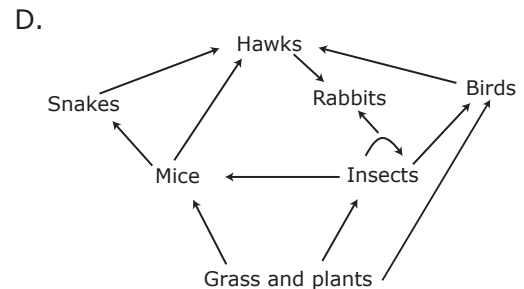
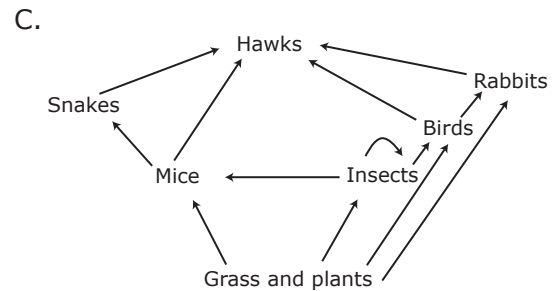
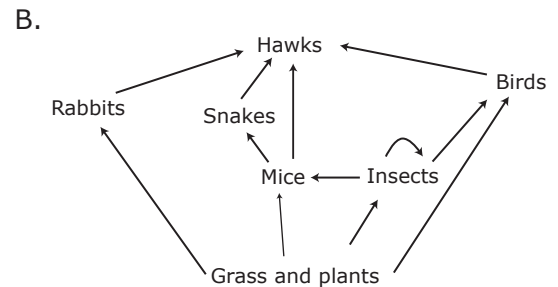
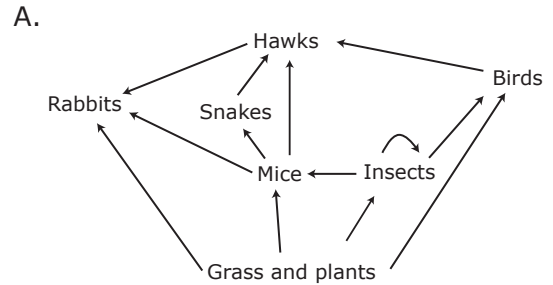
FOOD WEB



3. Which organisms in this food web are carnivores only?

- A. hawks only
- B. snakes only
- C. both snakes and hawks
- D. hawks, snakes, and insects

4. Hawks consume rabbits as well as the other animals listed in the food web. If rabbits are herbivores, which of the following food webs accurately includes rabbits in the grassland ecosystem?



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Science

5. Whether a substance is classified as acidic, basic, or neutral is determined by its pH. A pH below 7 is acidic, a pH of 7 is neutral, and a pH above 7 is basic. Below is a table of common substances and their pH values.

Substance	pH
lemon juice	2
water	7
vinegar	2.2
baking soda solution	8.3

Based on the information above, what percent of the substances in the table are basic?

You may use a calculator.

 %

6. A geode is a rock that appears dull on the outside but is filled with crystals inside. Many scientists theorize that some round geodes are formed when lava bubbles as it cools after a volcanic eruption. Minerals and water seep into the bubbles, and after the water evaporates, the minerals form crystals.

Which of the following best supports the theory discussed above?

- A. Round geodes generally contain fewer crystals than do geodes of other shapes.
- B. Some geodes have been discovered in areas where there are no volcanoes.
- C. The water and minerals that seep into geodes cool quickly after entering air bubbles inside the geodes.
- D. The minerals found in round geodes are also typically present in volcano lava.

7. A scientist wishes to determine whether using compost and nitrogen-rich fertilizer together will be more effective than using either alone. She hypothesizes that if she uses a combination of compost and nitrogen-rich fertilizer, then the plants that she grows will be taller and will grow more abundantly than they would if she used either independently.

Design an experiment that the scientist can use to test this theory. Include descriptions of the materials that the scientist will need, and the most appropriate methods of data collection. Discuss how the scientist will be able to determine whether her theory is accurate.

Type your response on a computer, if one is available. Otherwise, write your response on paper. This task may require approximately 10 minutes to complete.

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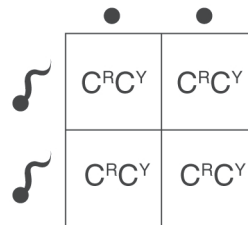
Science

Question 8 is based on the passage below.

Hereditary traits are encoded in genes, which in turn are located on chromosomes. Chromosomes come in pairs, and the pair of genes associated with a particular feature determines the characteristics of that trait. Often, there are several varieties of genes associated with a given trait. A gene is expressed when it is pure, meaning that it is expressed when both genes in a pair are alike. A hybrid pattern occurs when two genes in a pair are different, and in cases of incomplete dominance the two traits will blend together to make a new trait.

Flower color in carnations follows an incomplete dominance pattern. When both genes in a pair are associated with the color red, then the plant produces red flowers. When both genes in a pair are associated with the color yellow, the plant produces yellow flowers. When a plant is hybrid, and has one gene associated with the color red and another associated with the color yellow, then the two traits blend to produce orange flowers.

Below is a Punnett Square showing the results when a carnation with yellow flowers and a carnation with red flowers are crossed to produce offspring. Punnett Squares predict the likelihood of specific gene combinations occurring.



	●	●
♂	$C^R C^Y$	$C^R C^Y$
♂	$C^R C^Y$	$C^R C^Y$

●	egg cell of female parent
♂	sperm cell of male parent
C^R	gene for red color
C^Y	gene for yellow color

8. What color are the flowers of the offspring shown in the Punnett Square?
- A. All are red.
 - B. All are yellow.
 - C. All are orange.
 - D. Half are red, and half are yellow.

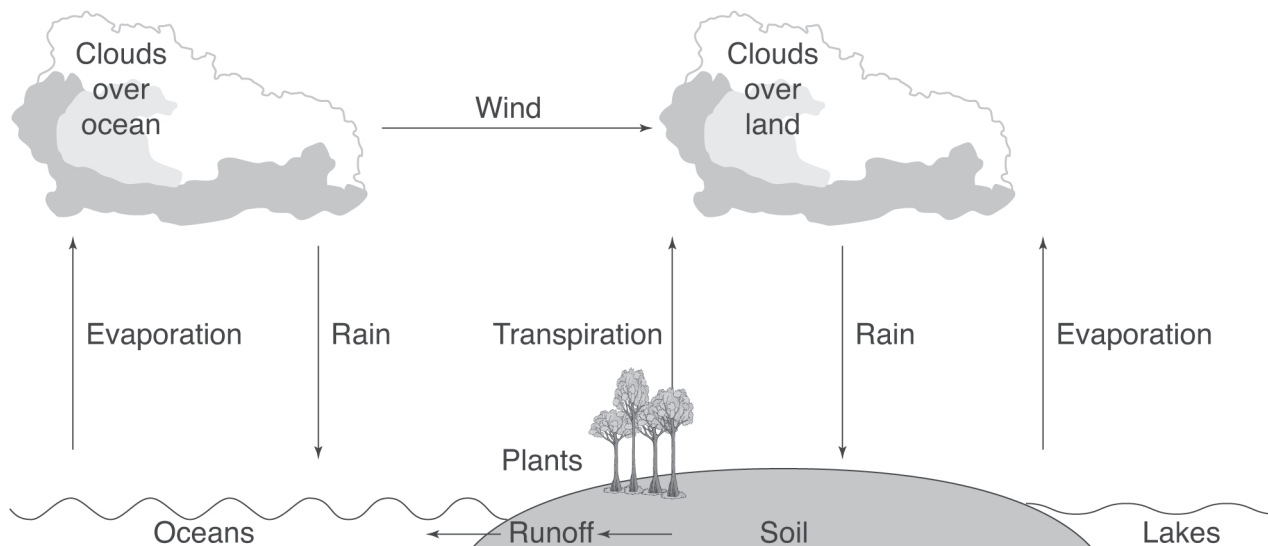
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Science

Question 9 is based on the following information.

Water is constantly being naturally recycled on Earth. Below is a picture of the water cycle, which depicts the natural processes that affect the flow of water.

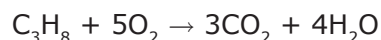
Water Cycle



9. Based on the figure, which of the following processes deliver(s) water to clouds?

- A. evaporation only
- B. evaporation and transpiration
- C. transpiration only
- D. evaporation and precipitation

10. The balanced equation below represents the oxidation process for propane.



Which of the following describes the reaction shown above?

- A. Oxygen reacts with propane to create carbon dioxide and water.
- B. Oxygen and propane react to create water.
- C. Oxygen is converted into carbon dioxide.
- D. Propane is converted into water.

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Science

11. Below is a table showing the percentage of total blood volume for several components of human blood.

Percent Composition of Human Blood	
Dissolved Gases	1%
Nutrients	3%
Red Blood Cells	43%
Water	51%
White Blood Cells	2%

What percentage of human blood is not made up of cells?

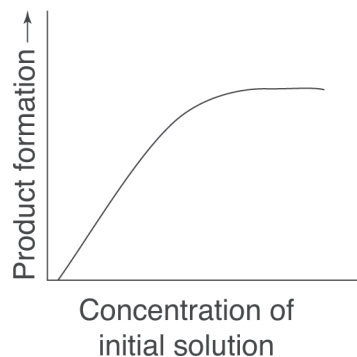
You may use a calculator.

 %

12. An enzyme speeds up a chemical reaction by interacting with an initial substance and making it easier for that substance to form a product. In most cases, an enzyme can interact with only one molecule of the initial substance at a time.

The graph below shows the results of an experiment that measured the rate of product formation as the concentration of an initial substance was increased. A limited amount of the enzyme was present during the experiment.

Enzymes and Product Formation



Which of the following best describes the results shown in the graph? As the concentration of the initial substance increased, the rate of product formation

- A. increased continually.
- B. initially increased and then became constant.
- C. increased and then decreased.
- D. remained constant.

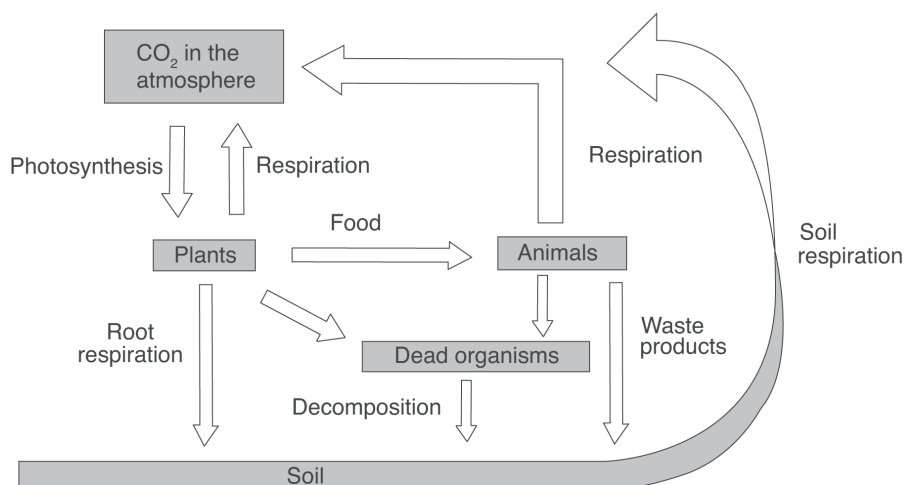
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Science

Question 13 is based on the following information.

Plants use carbon dioxide to make food, and then that food is consumed by animals and eventually returns to the soil or atmosphere. The diagram below shows the carbon cycle.

The Carbon Cycle

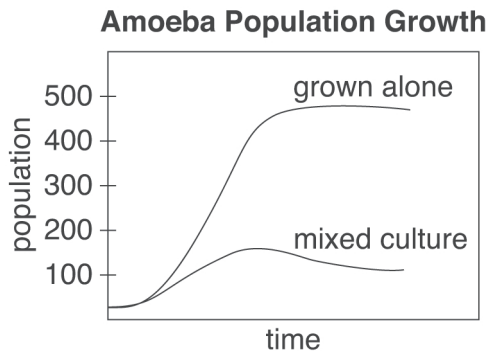


13. Which of the following describes a process shown in the diagram?
- A. Plants absorb CO₂ from the atmosphere, and transfer some of that CO₂ to animals in the form of food, after which animals release waste products and transfer some of that CO₂ to the soil.
 - B. Animals absorb CO₂ from the atmosphere and from dead organisms, and then transfer some of that CO₂ into the soil through waste products.
 - C. Plants absorb CO₂ from the soil through respiration, and then transfer some of that CO₂ to the soil through root respiration, after which the soil transfers that CO₂ to the atmosphere through soil respiration.
 - D. Plants absorb CO₂ from the soil through root respiration, and then transfer some of that CO₂ to animals in the form of food, after which the animals become dead organisms and transfer some of that CO₂ into the soil.

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Science

14. In most environments, there are a limited number of nutrients. As a result, living organisms must compete for food and resources. The graph below shows the results of two experiments, one in which an amoeba was cultured alone and one in which it was cultured with a mixture of other single-celled organisms. The same nutrients were provided to each culture.



Which of the following conclusions can be drawn from the graph above?

- A. This species of amoebas is more likely to thrive if cultured in a mixed culture than if cultured alone.
- B. This species of amoebas is more likely to reproduce rapidly if cultured alone than if cultured in a mixed culture.
- C. The population of this species of amoebas will continue to increase indefinitely if the amoebas are cultured alone.
- D. If cultured in a mixed culture, this species of amoebas will initially increase in population, but will eventually die out.
15. Scientists use the following formula to calculate the force of gravity that two objects exert on each other:

In the equation

$$F = \frac{G \times M \times m}{r^2}$$

F is the force of gravity;

G is a constant;

M is the mass of one of the objects;

m is the mass of the second object;

r is the distance between the centers of the objects.

If an object with a given mass m is replaced by an object of half its mass, which of the following will increase the force of gravity?

- A. increasing mass M and doubling the distance between the objects
- B. reducing mass M and doubling the distance between the objects
- C. reducing mass M and halving the distance between the objects
- D. increasing mass M and halving the distance between the objects

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Science

16. The table below shows an analysis of the composition of soil taken from a canyon in the desert.

Material	Percent Composition
Silt	25
Clay	15
Calcium Carbonate	14
Sedimentary Rock	13
Metamorphic Rock	11
Gypsum	8
Caliche	6
Salt	4
Zinc	2
Boron	2

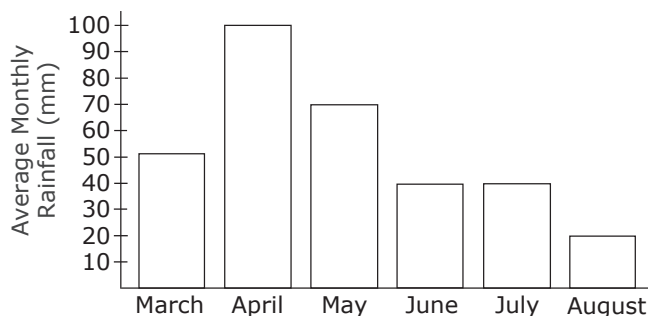
What is the median of the numbers listed in the table above?

You may use a calculator.

Questions 17 and 18 both refer to the graph below.

17. The graph below shows the amount of rainfall during the spring and summer months in the city of Mayfair.

Amount of Rainfall in Spring and Summer



Between which two months was the increase in average monthly rainfall the greatest?

- A. March and April
 - B. April and May
 - C. May and June
 - D. June and July
18. What was the mode of rainfall for the months shown above?

You may use a calculator.

- A. 40
- B. 45
- C. 50
- D. 55

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Science

Questions 19 and 20 are based on the information below.

An atom contains neutrons, protons, and electrons. The atomic number of an element is the number of protons in one atom of that element, and the atomic weight is equal to the sum of the number of protons and the number of neutrons. The chart below lists the numbers of protons, neutrons, and electrons in three common elements.

Element	Protons	Neutrons	Electrons
Carbon	6	6	6
Nitrogen	7	7	7
Oxygen	8	8	8

19. Drag and drop the appropriate element into each box. (For this practice test, write the element letters in the boxes.)

The element with an atomic weight of 16:	The element with an atomic number of 7:	The element with an atomic weight of 12:
--	---	--

(a) Carbon

(b) Nitrogen

(c) Oxygen

20. Based on the information and the table, which of the following is true?
- A. A nitrogen cation, which has one fewer electron than does an ordinary nitrogen atom, has an atomic number of 7.
 - B. Fluorine, which has an atomic number of 9, has more protons than does oxygen.
 - C. Boron, which has an atomic weight of 10 and an atomic number of 5, has more neutrons than does carbon.
 - D. An oxygen anion, which has more electrons than does an ordinary oxygen atom, has an atomic weight of 15.

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Questions 21 and 22 are based on the information and chart below.

The Richter scale measures seismic activity, or energy released in the form of heat and vibration during earthquakes. The scale is a logarithmic, base-10 scale, which means that an earthquake measuring 3.0 on the Richter scale has a shaking amplitude 100 times more powerful than does an earthquake measuring 2.0.

The chart below shows the classifications and effects of various earthquakes and their measurements on the Richter scale.

Richter Magnitude	Classification	Effects
less than 2.0	micro	not felt
2.0–3.9	minor	may be felt
4.0–4.9	light	noticeable shaking but damages are unlikely
5.0–5.9	moderate	may cause damage to unstable structures
6.0–6.9	strong	can cause damages in areas up to 100 miles
7.0–7.9	major	can cause damages in areas several hundred miles large
8.0–8.9	great	can cause damages in areas several thousand miles large

21. An earthquake causes severe structural damage to a house located within 150 miles of the epicenter of the quake. Which of the following is the best likely description of the earthquake?
- A. The earthquake was less than moderate, measuring below 5.0 on the Richter scale.
 - B. The earthquake was moderate, measuring between 5.0 and 5.9 on the Richter scale.
 - C. The earthquake was strong, measuring between 6.0 and 6.9 on the Richter scale.
 - D. The earthquake was major or great, measuring more than 7.0 on the Richter scale.

22. An earthquake in California measures 4.0 on the Richter scale, and an earthquake in Taiwan measures 6.0 on the Richter scale. According to the information in the passage, what is the ratio of the shaking amplitude of the earthquake in California to the shaking amplitude of the earthquake in Taiwan?

You may use a calculator.

- A. 1:100
- B. 1:200
- C. 1:1,000
- D. 1:10,000

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Questions 23 and 24 refer to the following information.

In an ecosystem, each living thing plays a specific role in the food chain. For example, in the forest, mice eat leaves, and snakes eat mice. The path that energy takes can be shown through the following food chain:

leaves → mice → snakes

A food web is another way to demonstrate how energy is transferred from one species to another within an ecosystem. The figure shows a food web for an ocean ecosystem. In a food web, living creatures fall into the following categories:

Autotrophs create their own food, and do not gain their nutrition from other creatures.

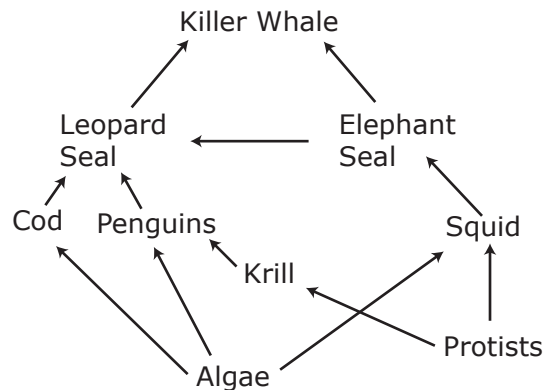
Primary consumers, or herbivores, eat plants, algae, and other producers.

Secondary consumers eat primary consumers.

Tertiary consumers eat secondary consumers.

Apex predators are at the top of the food chain, and have no predators other than humans.

Consumers can be carnivores (creatures that eat meat) or omnivores (creatures that eat both plants and animals).



23. Which term accurately describes the role that the elephant seal plays in this ecosystem?

- A. autotroph
- B. primary consumer
- C. secondary consumer
- D. apex predator

24. In the ecosystem above, if the population of krill were depleted, which of the following consumers would be most affected?

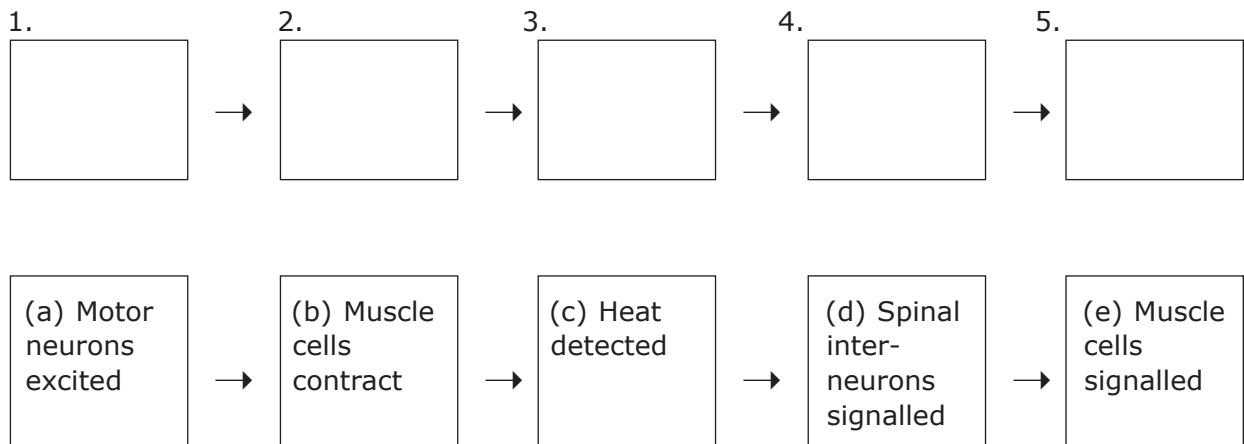
- A. cod
- B. squid
- C. leopard seals
- D. elephant seals

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25. When humans come into contact with objects that inflict pain, they reflexively move away from those objects. Consider the example of a person who touches a hot stove. Provided that the person in question has normal motor abilities and has not suffered nerve damage, he or she will almost instantly draw away from the stove. Such action is initiated when sensory receptors in the skin detect dangerous heat levels. These receptors send signals along the axon of the receptor cell to spinal interneurons in the spinal cord. The spinal interneurons excite the motor neurons that control the arm muscles, which in turn send signals to the muscle cells. The muscle cells then contract, causing the arm to move away.

Using the information above, drag and drop the steps that show the process that occurs when an individual touches a dangerously hot object into the diagram below. (For this practice test, write the letters in the boxes.)



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26. A research team plans to conduct an experiment to test whether a certain chemical compound causes outbreaks of hives in average adults. In total, 1,000 adults volunteer for the study.

Design an experiment that the team could conduct, and explain how the team can determine whether the results show that the chemical compound does or does not cause hives.

Type your response on a computer, if one is available. Otherwise, write your response on paper. This task may require approximately 10 minutes to complete.

27. A particular aircraft has a mass of 1,800 kilograms, and has engines that provide 90,000 Newtons of thrust force. A second aircraft has a mass of only 1,500 kilograms, but has engines that provide exactly the same acceleration. What amount of thrust force do that aircraft's engines provide?

You may use a calculator.

$$\text{Force [Newtons]} = \text{mass [kilograms]} \times \text{accelation [meters/second}^2\text{]}$$

- A. 50 Newtons
- B. 60 Newtons
- C. 75,000 Newtons
- D. 108,000 Newtons

28. Scientists use index fossils to identify the times at which unidentified fossils and certain sediments were deposited. They hypothesize that if a particular fossil is found near an index fossil, in the same layer of rock, then the two fossils were likely from the same time period. The shorter the lifespan of the index fossil species, the more precisely scientists are able to correlate that species with a particular era. Therefore, it is not surprising that ideal index fossils are therefore from short-lived, common, and easy-to-identify species.

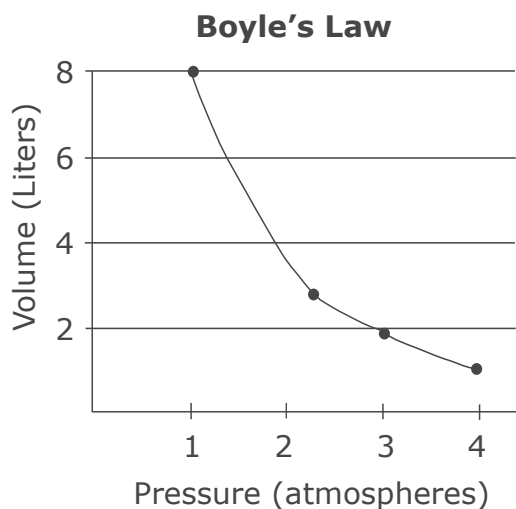
Which of the following is an example of the effective use of index fossils?

- A. Scientists fix the time that *Mesolenellus hyperborea* existed in the late *Nevadella* era, because they find *Mesolenellus hyperborea* near and in the same level of rock as *Limniphacos perspiculum*, a recognized index fossil that existed in that period.
- B. Scientists determine that *Mesolenellus hyperborea* were probably mud bottom-dwellers, because hyolitha, which existed during the same time period as *Mesolenellus hyperborean*, were also bottom dwellers.
- C. Scientists hypothesize that *Mesolenellus hyperborea* were wiped out by a sudden climate change that occurred at the end of the Devonian period, when many other trilobites were wiped out.
- D. Scientists determine that *Mesolenellus hyperborea* did not exist in Iceland, because *Petrianna fulmenta*, a similar trilobite, did not exist in Iceland.

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29. Boyle's law explains some aspects of the behavior of gases, such as those in our atmosphere. The law states that if temperature remains constant, volume decreases as pressure increases. The graph below illustrates Boyle's law for one gas.



Which of the following is supported by the information in the graph above?

- A. Pressure and volume are directly proportional.
- B. As the pressure rises from 1 atmosphere to 3 atmospheres, the volume increases from 2 liters to 8 liters.
- C. As the pressure rises from 1 atmosphere to 2 atmospheres, the volume decreases from 8 liters to 2 liters.
- D. If the trend in the graph continues, then when the pressure reaches 5 atmospheres, the volume will near $\frac{1}{2}$ liter.

30. Mass is an indicator of the amount of matter that an object possesses. Scientists determine the weight of an object by multiplying its mass by the acceleration that the object experiences due to gravity. The acceleration due to gravity on the moon is approximately $\frac{1}{6}$ the acceleration due to gravity on the earth.

Based on the information above, a person would have

Select...	▼	Select...	▼
more		weight	
less		mass	

on the moon.

31. Scientific theory holds that convergent evolution occurs when different species independently evolve analogous structures, or features that may appear different, but perform the same function. Creatures evolve such structures in order to adapt to their environments.

A scientist argues that bats and birds have analogous structures. Which of the following supports his argument?

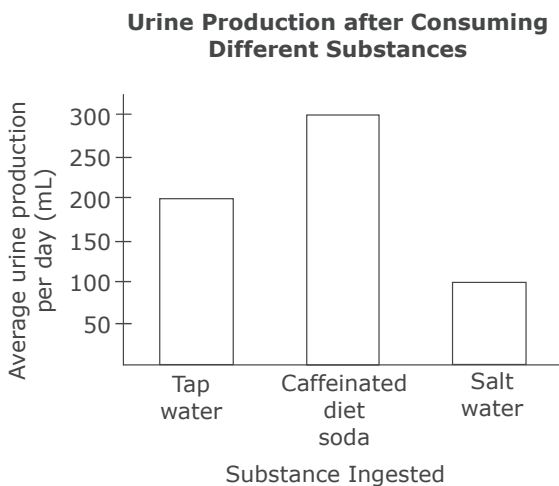
- A. Bats use echolocation to track their prey, while birds rely primarily on sight.
- B. Unlike bird wings, bat wings are composed primarily of membrane, but both types of wings provide flight capabilities.
- C. Baby bats gain nourishment from their mother's milk, while baby birds eat worms and bugs brought by their mothers.
- D. Both bats and birds frequently make their homes in trees, bridges, and attics.

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Questions 32 and 33 are based on the information below.

A scientist conducts a study to determine the effects that certain substances have on those who suffer from polyuria, or excessive urine production. During a two-week period, the 500 volunteers participating in the study drink two liters of water per day, and do not consume any other liquids. During the next two-week period, the same 500 volunteers drink two liters of caffeinated diet soda per day, and do not consume any other liquids. During a final two-week period, the same 500 volunteers drink two liters of water containing a mild amount of salt per day. The scientist tracks each volunteer's urine output each day. The volunteers all followed exactly the same diet in the first week as they did in the second week and in the third week. The average daily urine output per volunteer for each of the two-week periods is shown below.



32. The data support which of the following conclusions?
- A. Individuals suffering from polyuria may benefit from drinking caffeinated diet sodas.
 - B. Individuals who drink water with a high salt content are more likely than others to suffer from polyuria.
 - C. Individuals who suffer from polyuria should avoid consuming large amounts of caffeinated diet soda.
 - D. Individuals who suffer from polyuria should vary their liquid consumption by drinking some water, some caffeinated diet sodas, and some slightly salty water.
33. The passage indicates that the volunteers followed the same diet during each week of the study. Why was this important?
- A. Had the volunteers varied their diets throughout the study, the differences in urine production may have been attributable to differences in solid food consumption, rather than in liquid consumption.
 - B. Had the volunteers varied their diets throughout the study, they may have craved different amounts of liquid each week.
 - C. By eating the same foods each week, the volunteers ensured that they did not suffer from any nutritional imbalances throughout the study.
 - D. By feeding the volunteers the same foods each week, the scientist ensured that the volunteers produced that same amount of urine as each other per day.

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34. Chemicals can be classified as acidic, neutral, or basic, depending on their pH measurements. A pH below 7 indicates that a substance is acidic, a pH of 7 means that a substance is neutral, and a pH above 7 means that a substance is basic. An indicator is a chemical compound that, when added to a substance, changes color based on the pH of the solution. For example, cabbage juice is an indicator that turns blue when added to a basic substance.

Liquid	pH
apple juice	3
water	7
acid rain	5
ammonia	11

Based on the information and the table above, which of the following substances, if combined with cabbage juice, would cause the cabbage juice to turn blue?

- A. apple juice and acid rain
B. water
C. acid rain
D. ammonia

35. Geologists classify rocks in three main categories: igneous, sedimentary, and metamorphic. Igneous rock forms when melted rock cools and hardens. Below ground, igneous rock forms when melted rock known as magma cools in small pockets. Above ground, igneous rock forms when volcanoes erupt and spew lava that cools and hardens into igneous rock. Sedimentary rock forms when minerals or organic particles accumulate and settle in a specific place on the earth's surface or within a body of water. Metamorphic rock forms when existing rocks are transformed by heat and pressure, and as a result experience profound chemical and physical changes.

A student discovers a rock that he hypothesizes may be igneous. Which of the following supports the student's hypothesis?

- A. The rock has undergone profound chemical changes at some point in its history.
B. The rock was found within an underground lake.
C. The rock was found near the site of a recent volcano eruption.
D. The rock is composed of minerals.

END OF TEST