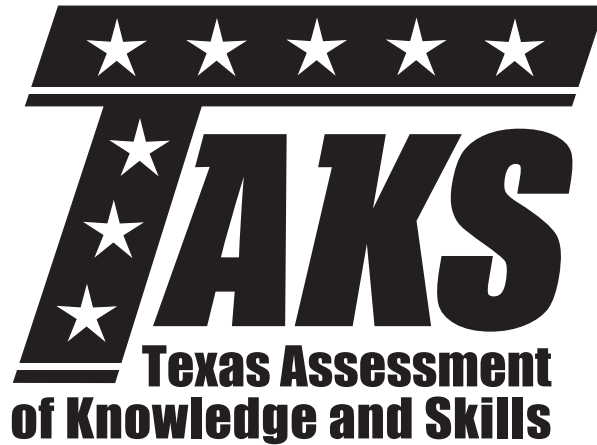


STUDENT NAME _____



GRADE 10
ENGLISH LANGUAGE ARTS
MATHEMATICS
SCIENCE
SOCIAL STUDIES

Administered Spring 2006

READING AND WRITTEN COMPOSITION

DIRECTIONS

Read the two selections and the viewing and representing piece. Then answer the questions that follow.

Set Free

by Helen Peppe

1 The dog sat on the grass near the house, his tongue out. There was a red collar around his neck. A long cable wound from his red collar to a hook on the house. It was strong. The boy knew it was strong. Everyone knew it was strong. They had seen the dog lunge and jerk at the end of the thick cord barking at the cars, the cats, the people, forcing against the cable and hook with its black chest. It hurt the boy to see the dog strain so frantically, so uselessly. He hoped that the cable would break so that the dog could be free. The boy felt the dog's frustration as if it were his own. He knew it was like the frustration he felt when his father held him tight in his arms and wouldn't let go. Even though it was a game, and his father laughed, he hated it. It was no game to him. At those times, the boy felt hate that he was incapable of expressing to anyone, but he knew the dog knew how he felt. It was not right for the dog to be tied just as it was not right for his father to hug him tight and laugh at him as he struggled to free himself. The pain was too real to the boy; he had to do something.

My notes about what I am
reading

2 The boy walked to the dog and gently rubbed his black pointed ears. The dog responded by licking the boy's hand and butting him with his smooth black head. The boy slid his small hand under the dog's collar. The fur was hot and rumpled. He knew it would be easy to unfasten the clip from the hook on the collar, but other things were not so easy. The question of where the dog would go ran through the boy's head. Would he just run so fast that no one could catch him, not even his father, who could do anything? And the question that the boy wondered the most, would the dog ever come back?

3 The boy loved the dog. The dog was the only one who shared his hate and anger. The dog was his closest friend.

4 The boy removed his fingers from the collar and instead wrapped his small arms around the dog's neck. The dog endured this new form of attention for a minute, then struggled free, although he still sat next to the boy.

5 The boy sat down on the grass. A new thought entered his mind. His father would be angry when he discovered that the dog was gone. The dog had cost a lot of money and

they had had him for only six months. They had needed a watch dog, a Doberman, his father had insisted. No other dog scared people enough.

6 The boy had found this to be true. The kids next door had not taken his bike or played on his tire swing since the dog had come. Cats had certainly been scarce too. His father hated the mess that cats made and they all hated the yowling of the cats fighting under their windows at night. The boy didn't like cats. They were not like dogs, and no one could convince him that they were as fun to play with or that they did not make as much mess. He could smell the difference when he went to his friends' houses in the city. He moved toward the dog again, this time gratefully, and patted the dog's head. Maybe if he let the dog loose, the cats would come back. The boy instantly realized that it was a selfish thought. Enduring the cats would be a small price for the dog's freedom. He made a move to set the dog free, but just at that moment his mother came out of the house with the dog's supper. The boy wished that he had thought of this himself. It would have been terrible to let the dog loose without his supper.

7 His mother patted him on the head and told him that his own dinner would be ready soon. The boy nodded but stayed where he was. It would have been awful if the dog had had to eat out of garbage cans to get his supper like the dogs he saw on his way to school. The boy hated that. He wished that he could feed all the dogs in the neighborhood so that they wouldn't have to eat someone's old potato peels and beef gristle. But the boy knew that he did not have enough money. At eight, he barely had enough to weight his piggy bank down. On windy days he always had to remove his bank from the sill or he would find it on the floor, the black eyes of the pig staring up at the ceiling lamenting its inadequacy.

8 The dog sure was hungry. The boy knew his mother did not feed the dog enough. An eighty-five pound dog needed more than one bowl of food a day. It wasn't right. But his mother had gotten mad at him for bringing the dog his own mashed potatoes. The boy had always hated potatoes even though his mother always insisted that they didn't taste like potatoes when they were mashed. He still had stray lumps of potato in his jacket pocket. He was beginning to think that he would never be able to forget about trying to feed the dog his potatoes. And anyway, the dog hadn't liked

them either. That was how his mother had found out. Mashed potatoes don't disappear very quickly from black pavement. The boy smiled. He was glad that the dog didn't like potatoes either, even mashed. The boy bet that the dog also wouldn't like liver. For that reason, he hadn't tried to sneak it to him. It was not right to feed liver to people who did not like it. The slimy liver residue lasted indefinitely on the dinner plate destroying the taste of the best elbow macaroni.

9 He wished his mother felt the way he and the dog did. But no one seemed to care how he or the dog felt. Anyone could see that the dog needed to run, but his father only walked him once a day. The boy knew that wasn't enough. The dog had so much energy. And the boy's mother wouldn't go near the dog unless it was to feed him or clean up his messes. She said that the dog was dangerous. She had wanted to get a poodle. She thought that Dobermans were too much like Pit Bulls. But his father had insisted on a Doberman. No other dog could do it, he said. As far as the boy knew, his father had been right.

10 The dog started toward his dog house, then turned and studied the boy. It was obvious that the dog was puzzled by the extra attention. The boy thought instead that the dog was looking to him for more food. The boy turned an angry look toward the house. His mother should know better. She was the one always talking about paying twenty-five dollars a month to adopt a foster child. But his father always made a disgusted face and said there were better things they could do with twenty-five dollars. But the boy knew though, that his mother sent money secretly. He wished that he could do things secretly too, but his parents always found out.

11 He wondered what his father would do when he saw that the dog was gone. Maybe he wouldn't do much. His father had called the dog the boy's when there had been a mess in the driveway last week. Maybe the boy had the right to do with the dog what he wanted. This thought made the boy move again toward the dog's collar.

12 The dog's short black hair tickled the boy's fingers. The boy looked anxiously toward the house. He hoped his mother was busy, maybe on the telephone. She was on the telephone a lot. The hook felt cold on the boy's fingers in relation to the dog's fur. He slid his fingers around the metal clasp. For a minute, he hesitated. He hoped that the

dog would not get lost. This misgiving was quickly suppressed with the thought of the dog's approaching happiness, and, before he could change his mind, he undid the metal clasp. With his hand still on the dog's collar, he kissed the dog, and hugged him tightly. A tear squeezed out between the boy's lids. He hoped that the dog would come back. He was his only real friend.

13 He released the dog's collar from his sweaty hands and stood back feeling miserable at the near separation. The dog yawned and stretched, glad to be free from the boy's restrictive arms. He looked at the boy; then he licked his whiskered mouth for the last vestiges of his supper. The boy waved his hand slowly and whispered a bye. The dog stretched again and yawned with a high pitched sound. Then he moved toward the side of his dog house, lifted his leg, and urinated against the rough boards. He gave the boy another look as if to ask, "Are you through? Is there anything else?" then moved to the front of his dog house and kicked up his hind legs scratching up the grass.

14 Then the dog went inside, turned around, and laid down resting his pointed nose on his strong paws. The boy stared at him in confusion then walked to the dog house. The dog raised his eyes not bothering to lift his head. "You're loose," the boy whispered. "Don't you realize that?" The dog closed his heavy lids with a grunt. There was a gurgle from the depths of his black rounded stomach.

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Summer of the Raccoons

by Fred Bauer

My notes about what I am
reading

- 1 If I'd had my way, the story would have ended that day where it began—on the sixth hole at Stony Brook.
- 2 “What was that bawling?” my wife, Shirley, asked, interrupting me in mid-swing. Without another word she marched into a mucky undergrowth and re-emerged carrying something alive.
- 3 “*Rrrit, rrit, rrit,*” it screamed.
- 4 “It’s an orphaned raccoon,” she said, gently stroking a mud-matted ball of gray fur.
- 5 “Its mother is probably ten yards away, has rabies and is about to attack,” I scolded.
- 6 “No, it’s alone and starving—that’s why the little thing is out of its nest. Here, take it,” she ordered. “I think there’s another baby over there.”
- 7 In a minute she returned with a squalling bookend—just as mud-encrusted and emaciated as the first. She wrapped the two complaining ingrates in her sweater. I knew that look. We were going to have two more mouths to feed.
- 8 “Just remember,” I declared, “they’re your bundles to look after.” But of all the family proclamations I have made over the years, none was wider of the mark.
- 9 When, like Shirley and me, you have four children, you don’t think much about empty nests. You don’t think the noisy, exuberant procession of kids and their friends will ever end. But the bedrooms will someday empty, the hot bath water will miraculously return, and the sounds that make a family will echo only in the scrapbook of your mind.
- 10 Shirley and I had gone through the parting ritual with Laraine and Steve and Christopher. Now there was only Daniel, who was chafing to trade his room at home for a pad at Penn State. So I was looking forward to my share of a little peace and quiet—not raccoons.
- 11 “What do you feed baby raccoons?” I asked the game protector over the phone the next morning. We had cleaned them up, made them a bed in a box of rags, added a ticking

clock in the hope it would calm them, found old baby bottles in the basement, fed them warm milk and got them to sleep, all without floorwalking the first night.

12 However, they revived and began their machine-gun chant shortly after Shirley had run out the door, heading for classes. In anticipation of a soon-to-be empty nest, she had gone back to college to get a master's degree so she could teach.

13 Meanwhile, I had my own work to do—various publishing projects that I handle from home. As the only child remaining with us, Daniel was my potential raccoon-relief man. Or so I hoped.

14 “Whose bright idea was this?” he asked with the tart tongue of a teenager.

15 “Your mother thought you needed something more to earn your allowance,” I cracked. “Will you heat some milk for them?”

16 “Sorry, I’m late for school,” he called over his shoulder. He and I were at that awkward testing stage, somewhere between my flagging authority and his rush for independence.

17 The major problem with trying to feed the raccoons was one of flow. Milk was flowing out of the bottle too fast and through the kits the same way.

18 “Thinner milk and less corn syrup,” the wildlife man suggested, adding that he would send along a brochure for raising them. “The object,” he coached, “is to take care of them until they can go back to the woods and take care of themselves.”

19 “I’ll do anything I can to make that happen,” I assured him. “They’re about eight ounces each”—I had weighed them on my postage scale. “They’ll be old enough to be on their own in a couple more weeks, right?”

20 “Not quite,” he said. “Come fall, if all goes well, they’ll be ready.”

21 *I’ll strangle them before then*, I said under my breath. I prepared a new formula and tried it on one. The kit coughed and sputtered like a clogged carburetor. The hole in the nipple was too big.

22 *Maybe I could feed them better with a doll’s bottle*, I concluded, and set out to find one. At a toy store, I found

some miniature bottles, one of which was attached to a specially plumbed doll named Betsy Wetsy. “My Betsys are wetsy enough,” I told the clerk—declining doll and diapers, but taking the bottle.

23 Back home, I tried feeding the raccoons again. Miracle of miracles, they sucked contentedly and fell asleep. (Only twelve more weeks to September, I counted down.)

24 During the next month and a half I functioned faithfully as day-care nanny for Bonnie and Clyde, named for their bandit-like masks. The kits apparently considered me their mother. When I held them at feeding time, they still spoke in the same scratchy voice, but now it was a contented hum. The only time they may have perceived me to be an impostor came when they climbed on my shoulders, parted my hair and pawed in vain for a nipple.

25 Before long the kits graduated to cereal and bananas. When they became more active, our back-yard birdbath became an instant attraction. Bonnie, the extrovert of the two, ladled the water worshipfully with her paws like a priest conducting a baptism. Clyde followed suit, but cautiously, as if the water might be combustible. Next Bonnie discovered the joy of food and water together, and thereafter every morsel had to be dipped before being eaten.

26 By July the kits weighed about three pounds. I built a screened-in cage and moved them outdoors. When they had adjusted well to their new quarters, Daniel suggested we free them to explore the woods and forage for food.

27 “I don’t want them to get lost or hurt out there,” I said, sounding more like a mother hen than a surrogate father raccoon.

28 “They should get used to being on their own,” Daniel insisted. We left their door ajar so they could wander during the day. At night, we called them home by banging together their food bowls. They came out of the woods at a gallop.

29 Still, I was afraid we might be rushing their initiation to the wild. One windy afternoon while Daniel and I were playing catch in the back yard, I spotted Bonnie, twenty feet off the ground, precariously tightrope-walking the bouncing branches of a mulberry tree. She had eaten her fill of berries and was trying to get down, or so I thought.

30 “Be careful, babe,” I called, running to the tree. “Quick,
Dan, get a ladder!”

31 “Let her go,” he said calmly. “She’s on an adventure.
Don’t spoil her fun.” And he was on the money. When I
returned later, she was snoozing serenely in the mulberry’s
cradling arms.

32 However, the raccoons did get into trouble one night
when they let themselves out of their cage with those
dexterous forepaws. Shirley and I were awakened at 2 A.M.
by a horrendous scream.

33 “What was that?” I asked, bolting upright.

34 “The raccoons?” she wondered.

35 “They’re in trouble!” Tossing off the covers, I grabbed a
flashlight and ran outside in my skivvies.

36 As I came around the south side of the house, I heard
something rattle the eaves and jump into the maple tree.
Next, I got jumped. First by Bonnie, landing on my
shoulder, then by her brother, shinnying up my leg.
Circling my neck, they jabbered their excitement: “*Rrrrit,
rrrit, rrrit!*”

37 “It’s okay, I’ve got ya, you’re safe,” I said, cuddling them
in my arms. Apparently a wild raccoon, defending its
territory, had attacked Clyde. He had a bloody shoulder
that didn’t appear serious; Bonnie was fine.

38 July gave way to August, and August to September.
Soon the days were getting shorter, and the raccoons were
six-pound butterballs. I was fascinated by their creativity
and intelligence. One evening after I banged their food
bowls together, there was no reply. When I reported
anxiously at the breakfast table that they hadn’t come in
the night before, Daniel laughed at my concern.

39 “Now we’ll see if you’re as good a teacher as a mother
raccoon.”

40 “I already know the answer,” I said. “By the way, what
time did you get in last night?”

41 “About midnight,” he answered.

42 “Your eyes say later.”

43 “I’m not a baby anymore,” he shot back.

44 Outside, I beckoned the raccoons again, and this time
they reported: effervescent Bonnie in a flat-out sprint,
Clyde in a tagalong amble.

45 Near the end of September they were missing a week,
and I suggested to Shirley that they were probably gone for
good.

46 “You know it’s a mistake trying to hold on to anything
that no longer needs you,” she counseled.

47 “Who’s holding on?” I protested. But when I continued
scanning the woods, hoping to catch sight of them, I knew
she was right. Reluctantly, I dismantled their pen, stored
their bowls and put them out of my mind. Or tried to. But
they had got more of a hold on my heart than I ever
thought possible. What I had considered a nuisance had, in
fact, been a gift; what I had labeled a burden, a blessing.
*Why is it, I asked myself, that with so many people and
things, we only appreciate them fully after they’re gone?*

48 One Saturday near the end of October, Shirley, Daniel
and I were in the back yard raking leaves when I spotted a
ringed tail beyond the gate that opens to the woods. “Look,
Shirley,” I whispered. And though I had no idea if it was
one of ours, I called, “Bonnie . . . Clyde.”

49 The magnificently marked animal rose on its hind legs
and looked us over inquisitively. For a frozen moment, we
faced off, statue-like. Then I called again, and the animal
moved in our direction. It was Bonnie, and we went to meet
her. Kneeling, I held out my hand, which she licked while I
rubbed her neck. She purred her most satisfied *rrrit, rrrit,
rrrit*.

50 “Go get a banana for her,” I suggested to Daniel.

51 “No, it’s time she made it on her own,” he replied firmly.
“She’s a big girl now. Don’t do anything for her that she can
do for herself.”

52 I looked at Shirley and winked. Tall, broad-shouldered
Daniel wasn’t talking raccoons. He was talking parents.
*The object is to take care of them until they can take care of
themselves*, a haunting voice echoed. It was time to let go.

53 After rubbing Bonnie’s neck one last time, I stepped
back. She sensed my release and bounded off joyfully in the
direction from which she had come.

54 “Have a good life,” I called after her. Then she dipped
behind a tree and was gone.

“Summer of the Raccoons” by Fred Bauer. Reprinted by permission of the author from the August
1992 Reader’s Digest. © 1992 Fred Bauer.

LETTING THEM GO:

Sending your child to college is a difficult process both physically and emotionally. These four strategies make it easier.

Sending Your Kids to College

1

Do your homework.

Many books have been written about what parents can expect and how they can help. Read at least two of them.

2

Help them prepare.

Read the school's catalog and make sure students understand important deadlines, such as dropping a class or filing for financial aid. Learn about services offered on campus, such as the student health center and dormitories.

3

Establish financial boundaries.

Help students start a bank account and apply for a low-interest credit card. Practice keeping a monthly budget with them. Review spending every couple of months to make sure students are on target.

4

Be supportive, available, and understanding.

Write often. But give them room. If they don't always write back, it's not because they don't love you.



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Use “Set Free” (pp. 4–7) to answer questions 1–11.

1 One of the reasons the boy hesitates before releasing the dog is that he —

- A fears the dog might be run over by a car
- B realizes how angry his mother will be
- C worries that he will lose the dog
- D thinks the dog will come back

2 Read the following dictionary entry.

watch \ˈwäch\ *n* **1.** a portable timepiece
2. a guard or sentinel **3.** a period of duty; shift
4. a notice or bulletin indicating severe weather

Which definition best matches the meaning of the word *watch* as it is used in paragraph 5?

- F Definition 1
- G Definition 2
- H Definition 3
- J Definition 4

3 How is the boy’s father involved in the dog’s care?

- A He feeds the dog twice a day.
- B He walks the dog once a day.
- C He cleans up the dog’s messes.
- D He gives the dog a lot of affection.

4 What is paragraph 1 mainly about?

- F The boy identifies with the dog’s confinement.
- G The dog is unhappy with his situation.
- H The boy is angry with his father.
- J The dog lunges and jerks against his cable.

5 The story’s point of view helps the reader understand —

- A the mother’s loneliness
- B the boy’s frustration
- C the father’s anger
- D the dog’s contentment

6 The climax of the story occurs when —

- F the boy considers freeing the dog
- G the mother feeds the dog
- H the dog goes into his doghouse
- J the boy releases the dog’s collar

7 The author develops the character of the boy's father through —

- A** the father's dialogue with his son
- B** the boy's perspective
- C** the author's own thoughts
- D** the dog's actions

8 What does the "gurgles from the depths of his black rounded stomach" symbolize in paragraph 14?

- F** The dog's rebellion
- G** The dog's freedom
- H** The dog's confusion
- J** The dog's contentment

9 The boy assumes that the dog —

- A** will snap the chain
- B** dislikes the father
- C** is unhappy
- D** has no feelings

10 What can the reader conclude about the boy's feelings toward the children next door?

- F** He enjoys riding their bicycles and playing on their tire swing.
- G** He likes them more than he likes his friends in the city.
- H** He doesn't approve of the way they treat their cats.
- J** He dislikes them for using his possessions.

11 The author of "Set Free" builds suspense by —

- A** describing the mother's actions when she is afraid of the dog
- B** having the boy think about the consequences of freeing the dog
- C** suggesting that the dog is unstable and may turn on the boy
- D** presenting evidence of the father's temper when the boy misbehaves

Use “Summer of the Raccoons” (pp. 8–12) to answer questions 12–22.

- 12** In paragraph 26, the word *forage* means —
- F** search
 - G** cry
 - H** prepare
 - J** shop
- 13** The first seven paragraphs of the selection are mainly about the author and his wife —
- A** finding two baby raccoons
 - B** playing golf at Stony Brook
 - C** arguing about responsibility
 - D** seeking peace and quiet
- 14** How did the raccoons look when Shirley first found them?
- F** Lifeless
 - G** Injured
 - H** Underfed
 - J** Clean
- 15** Which of the following is the best summary of “Summer of the Raccoons”?
- A** Daniel, the author’s son, was preparing to go to college at Penn State. Daniel’s three older siblings had already left home. When his parents brought home two baby raccoons, he offered his father advice but no real help. Eventually his father learned to feed and care for the baby raccoons on his own.
 - B** While playing golf, the author found two baby raccoons. He called a wildlife expert, who told him that he would have to care for the animals all summer. The author was frustrated but continued to take care of the animals. Eventually he discovered that miniature bottles made for a specific doll were perfect for feeding the raccoons. The raccoons ate well and soon became strong enough to eat cereal and bananas.
 - C** The author built a wooden pen to house two orphaned raccoons that he and his wife found. At his son Daniel’s suggestion, the author left the door to the pen open so the two raccoons could venture outside. He worried about the animals as they explored the world, but Daniel assured his father that they would be fine.
 - D** Despite the author’s initial resistance to caring for two orphaned raccoons, he was enchanted by the animals and grew to love them. The raccoons began to stay away from home longer as they grew up, and the author found it difficult to let them go. His son, who would soon be leaving home too, helped his father understand that he had done his job; the animals would now have to take care of themselves.

16 The raccoons were named after two famous robbers because —

- F** they were always stealing food
- G** their markings looked like masks
- H** their voices were scratchy
- J** they climbed into the author's hair

17 Which sentence expresses a theme of the selection?

- A** *"I don't want them to get lost or hurt out there," I said, sounding more like a mother hen than a surrogate father raccoon.*
- B** *As the only child remaining with us, Daniel was my potential raccoon-relief man.*
- C** *"The object," he coached, "is to take care of them until they can go back to the woods and take care of themselves."*
- D** *When I held them at feeding time, they still spoke in the same scratchy voice, but now it was a contented hum.*

18 The author uses figurative language twice in paragraph 25 to —

- F** describe the backyard setting
- G** compare the raccoons to children playing
- H** illustrate the beauty of the raccoons' habitat
- J** contrast the personalities of the two raccoons

19 In paragraph 27, the author writes that he was more like a mother hen than a father raccoon to indicate that he was —

- A** overly concerned about the safety of the baby raccoons
- B** eager to separate himself from the raccoons
- C** extremely proud of the progress the raccoons had made
- D** annoyed about having to accept responsibility for the raccoons

20 Which of the following lines from the selection supports the idea that Daniel identified with the baby raccoons?

- F** *“Go get a banana for her,” I suggested to Daniel.*
- G** *Soon the days were getting shorter, and the raccoons were six-pound butterballs.*
- H** *“Don’t do anything for her that she can do for herself.”*
- J** *You don’t think the noisy, exuberant procession of kids and their friends will ever end.*

21 Which line from the selection supports the conclusion that the author was interested in his son’s safety and well-being?

- A** *“By the way, what time did you get in last night?”*
- B** *“Your mother thought you needed something more to earn your allowance,” I cracked.*
- C** *“You know it’s a mistake trying to hold on to anything that no longer needs you,” she counseled.*
- D** *“It’s okay, I’ve got ya, you’re safe,” I said, cuddling them in my arms.*

22 At the beginning of the selection, the author describes the raccoons with words such as “orphaned,” “alone,” “starving,” and “baby” to make the reader feel —

- F** anger and resolve
- G** guilt and dismay
- H** concern and sympathy
- J** happiness and contentment

**Use “Set Free” and “Summer of the Raccoons” (pp. 4–12)
to answer questions 23–25.**

- 23** Which of the following is a theme shared by the two selections?
- A** A person can learn a great deal from nature.
 - B** Parents have a responsibility to care for their children.
 - C** A full stomach is more important than freedom.
 - D** It is hard to let go of something or
- 24** While the father in “Set Free” wants to keep the dog chained up, the father in “Summer of the Raccoons” feels obligated to —
- F** free his animals to live in the wild
 - G** keep the adult raccoons in a cage
 - H** train the animals to live in the house
 - J** give the baby raccoons to a wildlife expert
- 25** Which line from “Set Free” would the father in “Summer of the Raccoons” empathize with most?
- A** *Maybe the boy had the right to do with the dog what he wanted.*
 - B** *His father hated the mess that cats made and they all hated the yowling of the cats fighting under their windows at night.*
 - C** *He wished that he could feed all the dogs in the neighborhood so that they wouldn’t have to eat someone’s old potato peels and beef gristle.*
 - D** *And the question that the boy wondered the most, would the dog ever come back?*

**Use the visual representation on page 13
to answer questions 26–28.**

26 This graphic is mainly about how to —

- F** send kids to college
- G** drop a college class
- H** pay for college
- J** read a college catalog

28 This graphic would most likely appear —

- F** in a magazine
- G** on a billboard
- H** in a movie
- J** on television

27 Who is the intended audience for this graphic?

- A** Teachers and principals
- B** University administrators
- C** Students in small school districts
- D** Parents of college-bound teens

DIRECTIONS

Answer the following questions in the space provided on the answer document.

- 29 In “Set Free,” why does the boy want to free the dog? Support your answer with evidence from the selection.
- 30 In “Summer of the Raccoons,” what lesson did the author learn from his experience? Explain your answer and support it with evidence from the selection.
- 31 What is one similarity between the actions of the boy in “Set Free” and the actions of the father in “Summer of the Raccoons”? Explain your answer and support it with evidence from **both** selections.

WRITTEN COMPOSITION

Write an essay about a time you made an important choice.

The information in the box below will help you remember what you should think about when you write your composition.

REMEMBER—YOU SHOULD

- ☐ write about the assigned topic
- ☐ make your writing thoughtful and interesting
- ☐ make sure that each sentence you write contributes to your composition as a whole
- ☐ make sure that your ideas are clear and easy for the reader to follow
- ☐ write about your ideas in depth so that the reader is able to develop a good understanding of what you are saying
- ☐ proofread your writing to correct errors in spelling, capitalization, punctuation, grammar, and sentence structure

USE THIS PREWRITING PAGE TO
PLAN YOUR COMPOSITION.

MAKE SURE THAT YOU WRITE YOUR COMPOSITION ON
THE TWO LINED PAGES IN THE ANSWER DOCUMENT.

USE THIS PREWRITING PAGE TO
PLAN YOUR COMPOSITION.

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PLAN YOUR COMPOSITION.

MAKE SURE THAT YOU WRITE YOUR COMPOSITION ON
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Revising and Editing Sample

DIRECTIONS

Read the introduction and the passage that follows. Then read each question and fill in the correct answer on page 2 of your answer document.

Lydia has written this report for her U.S. history class. As part of a peer conference, you have been asked to read the report and think about what suggestions you would make. When you finish reading the report, answer the questions that follow.

The American Red Cross

(1) The American Red Cross is an organization that aids people all around the world. (2) It started as a result of the efforts of a dedicated woman. (3) That woman was named Clara Barton. (4) It was during the Civil War that Barton began the work that lead to the establishment of the American Red Cross. (5) She assisted on the battlefield by nursing injured soldiers and helping transport supplies. (6) Eventually the Government of the United States selected her to serve as superintendent of nurses for the army.

- S-1 What is the most effective way to combine sentences 2 and 3?
- A It started as a result of the efforts of a dedicated woman, that woman was named Clara Barton.

B It started as a result of the efforts of a woman who was dedicated and named Clara Barton.

C It started as a result of the efforts of a dedicated woman named Clara Barton.

D It started as a result of the efforts of a dedicated woman she was named Clara Barton.

- S-2 What change, if any, should be made in sentence 4?
- F Change **was** to **is**

G Insert a comma after **Civil War**

H Change **lead** to **led**

J Make no change
- S-3 What change, if any, should be made in sentence 6?
- A Change **Government** to **government**

B Change **selected** to **sellected**

C Change **her** to **herself**

D Make no change



REVISING AND EDITING

DO NOT GO ON TO THE REVISING AND EDITING SECTION.
WHEN YOU FINISH THE READING AND WRITTEN
COMPOSITION SECTION, RAISE YOUR HAND AND WAIT
FOR A TEST ADMINISTRATOR TO ASSIST YOU.



DIRECTIONS

Read the following passages and mark your answers on page 2 of your answer document. Remember that you are NOT permitted to use dictionaries or other reference materials on this section of the test.

Alonso's English teacher asked each of her students to write a report about an admirable person. Alonso wrote this report about a famous neurosurgeon. He would like you to read his paper and think about the corrections and improvements he should make. When you finish reading, answer the questions that follow.



Dr. Benjamin Carson gives a motivational speech to students in New Mexico.

Striving for Greatness

(1) Dr. Benjamin Carson is the director of pediatric neurosurgery at Johns Hopkins hospital in Baltimore, Maryland. (2) He is renowned for his expertise in separating conjoined twins. (3) He has also refined some brain surgery techniques that control seizures. (4) His list of accomplishments and honors is long. (5) Because of his success, you might be surprised to learn what Carson's childhood was like.

(6) Carson was born in 1951 in Detroit, Michigan. (7) Today about one million people live in Detroit. (8) When he was only eight, his father left the family, and his parents subsequently divorced. (9) His mother had only a third-grade education and worked long hours as a maid to support her two sons. (10) The family lived in poverty.

(11) Carson went to school, but he was not a good student. (12) He called himself the dumbest kid in the class. (13) The other children frequently teased him. (14) Carson's mother knew that it was the answer for her children, education. (15) She made Carson and his brother limit their television viewing to two programs a week. (16) Each week they were also required to read two books and submit a written report to her on each one. (17) Years later Carson learned that his mother had never even been able to read the reports.

(18) Eventually Carson's life began to improve. (19) In fifth grade he visited an eye doctor and was fitted for glasses. (20) For the first time since he had started school, he could see the chalkboard. (21) He was thrilled to watch his grades go from Fs to Ds. (22) But his mother continued to insist, "You can do better than that."

(23) As time went on, Carson rose to the head of his class, won the respect of others, and started to recognize his own abilities. (24) He became an avid reader, and this offered him new possibilities. (25) He started to believe that he

could create his own future. (26) And became determined to achieve his potential.

(27) Today Carson is an unquestionably gifted neurosurgeon. (28) He is also a motivational speaker. (29) He encourages people of all backgrounds. (30) He reminds his audiences that education is the key to success and that children need to reach for excellence. (31) Although his early days were quite challenging Ben Carson overcame the obstacles in his path and is now making a profound impact on the world.

Photo courtesy of © AP Photo/Roswell Daily Record, Aaron J. Walker.

32 What change, if any, should be made in sentence 1?

- F** Change *director* to **directer**
- G** Insert a comma after *neurosurgery*
- H** Change *hospital* to **Hospital**
- J** Make no change

33 What is the most effective way to improve the organization of the second paragraph (sentences 6–10)?

- A** Switch sentences 6 and 8
- B** Delete sentence 7
- C** Move sentence 7 to the end of the paragraph
- D** Delete sentence 10

34 Which transition word or phrase should be added to the beginning of sentence 12?

- F** In fact,
- G** However,
- H** Coincidentally,
- J** Finally,

35 What is the most effective way to revise sentence 14?

- A** Carson's mother knew that education was the answer for her children.
- B** Carson's mother knew the answer for her children, it was education.
- C** Carson's mother knew. That education was the answer for her children.
- D** Carson's mother knew what the answer was for her children and that it was education.

36 What change, if any, should be made in sentence 15?

- F** Change *limit* to **limits**
- G** Change *there* to **their**
- H** Change *viewing* to **veiwing**
- J** Make no change

37 What change, if any, should be made in sentence 18?

- A** Change *Eventually* to **Eventualy**
- B** Insert **it** after *life*
- C** Change *begun* to **began**
- D** Make no change

38 What change should be made in sentence 23?

- F** Change *rose* to **rised**
- G** Delete the comma after *class*
- H** Change *started* to **starting**
- J** Change *abilitys* to **abilities**

39 What change, if any, should be made in sentence 26?

- A** Change *And* to **He**
- B** Change *determined* to **determinned**
- C** Change *potential* to **potentially**
- D** Make no change

40 What is the most effective way to combine sentences 28 and 29?

- F** He is also a motivational speaker who encourages people of all backgrounds.
- G** He is also a motivational speaker, he encourages people of all backgrounds.
- H** He is also a motivational speaker, and he also encourages people of all backgrounds.
- J** Also a motivational speaker encouraging people of all backgrounds.

41 What change, if any, should be made in sentence 31?

- A** Change *quite* to **quiet**
- B** Insert a comma after *challenging*
- C** Change *profound* to **profunder**
- D** Make no change

In response to an English assignment, Vanessa wrote this story about a memorable day. Read Vanessa's story and look for ways she might correct and improve it. When you finish reading, answer the questions that follow.

Inspection Day

(1) I yawned and gulped a bit more coffee as I stumbled into work at the pizza parlor that Saturday morning. (2) I was so sleepy that I failed to notice that the parking lot was more crowded than usual. (3) The sign on the door read "Closed Until 4:00." (4) That should have reminded me that this day would be different. (5) But I didn't remember until I saw the mops, buckets, and brooms and there was the upbeat music booming from the speakers. (6) Today was inspection day.

(7) My boss Harry is the sort of man who can make even the most boring jobs seem fun. (8) Today, however, he looked very serious. (9) He insisted that the shop had to be spotless by the time the inspector arrived. (10) But the twinkle in his eye suggested that he planned to make the work enjoyable. (11) Harry assigned jobs, he checked off each task on his clipboard. (12) When he called my name, he looked up with a sly, mischievous smile. (13) He said, "I have a very special job for you, Vanessa. (14) He pointed at the large pizza oven.

(15) The inside of the oven was caked with the remains of every pizza that had been made since the last inspection. (16) I wasn't excited about cleaning it, but I knew I had no choice. (17) Someone had to crawl inside to clean it.

(18) I grabbed the oven cleaner, rubber gloves, paper towels, and scrub brush and squeezed inside the oven. (19) Quickly I went to work. (20) I was surprised by how efficiently the oven cleaner ate through all the grime.

(21) I was wearing a protective mask and safety goggles, so I didn't have to worry about the fumes hurting my lungs or burning my eyes. (22) It was actually kind of fun to watch the remnants of all those pizzas just vanish!

(23) I scrubbed until the scrubbing job was finally done and finished.

(24) You couldn't have asked for a cleaner oven. (25) However, my uniform was another story. (26) After everybody had a good laugh about how silly I looked, Harry rewarded me by letting me go home early. (27) I cleaned up and then decided to ask some friends to join me for dinner. (28) But this was one night that I wasn't interested in eating pizza!

42 What change, if any, should be made in sentence 2?

- F Change ***failed*** to **fail**
- G Change ***notice*** to **notise**
- H Change ***then*** to **than**
- J Make no change

43 What change, if any, should be made in sentence 5?

- A Change ***saw*** to **seen**
- B Change ***there was*** to **heard**
- C Insert a comma after ***music***
- D Make no change

44 What change, if any, should be made in sentence 7?

- F Change ***who*** to **he**
- G Change ***borring*** to **boring**
- H Change ***fun*** to **funner**
- J Make no change

45 What change, if any, should be made in sentence 10?

- A Change ***suggested*** to **sugested**
- B Change ***he*** to **they**
- C Change ***enjoyment*** to **enjoyable**
- D Make no change

46 What revision, if any, is needed in sentence 11?

- F Harry assigned jobs. Checking off each task on his clipboard.
- G As Harry assigned jobs, he checked off each task on his clipboard.
- H Assigning jobs and checking off each task. Harry used his clipboard.
- J No revision is needed.

47 What change, if any, should be made in sentence 13?

- A Change ***said*** to **says**
- B Delete the comma after ***you***
- C Insert quotation marks at the end of the sentence
- D Make no change

48 Which sentence could best follow sentence 17 to support the idea in that sentence?

- F** The oven had to be cleaned by someone.
- G** I'm glad my mother cleans the oven at home.
- H** Some pizza parlors have wood-burning ovens.
- J** I was the only one small enough to fit.

49 Which transition word or phrase could be added to the beginning of sentence 21?

- A** Initially,
- B** As a result,
- C** Fortunately,
- D** Similarly,

50 What is the most effective way to revise sentence 23?

- F** I scrubbed until the scrubbing job, it was finally done and finished.
- G** I scrubbed until the job was finally done, it was finished.
- H** I scrubbed until the job. It was finally done and finished.
- J** I scrubbed until the job was finally finished.

51 Vanessa wants to add the following sentence to the last paragraph (sentences 23–28):

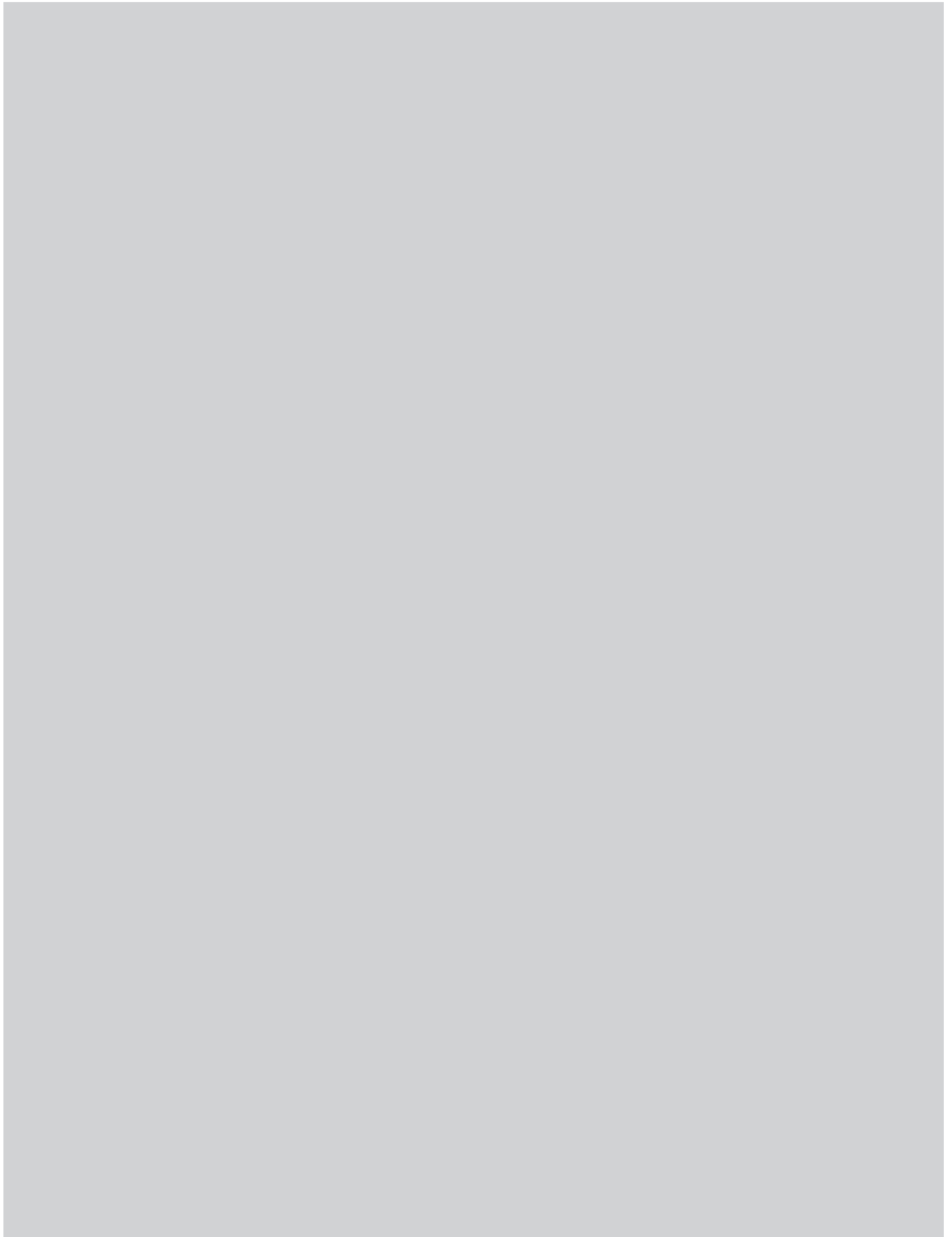
It was covered in black soot!

Where is the best place to insert this sentence?

- A** After sentence 25
- B** After sentence 26
- C** After sentence 27
- D** After sentence 28

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS
ON THE ANSWER DOCUMENT.





MATHEMATICS

Mathematics Chart

LENGTH

Metric

1 kilometer = 1000 meters

1 meter = 100 centimeters

1 centimeter = 10 millimeters

Customary

1 mile = 1760 yards

1 mile = 5280 feet

1 yard = 3 feet

1 foot = 12 inches

CAPACITY AND VOLUME

Metric

1 liter = 1000 milliliters

Customary

1 gallon = 4 quarts

1 gallon = 128 ounces

1 quart = 2 pints

1 pint = 2 cups

1 cup = 8 ounces

MASS AND WEIGHT

Metric

1 kilogram = 1000 grams

1 gram = 1000 milligrams

Customary

1 ton = 2000 pounds

1 pound = 16 ounces

TIME

1 year = 365 days

1 year = 12 months

1 year = 52 weeks

1 week = 7 days

1 day = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds

Metric and customary rulers can be found on the separate Mathematics Chart.

Mathematics Chart

Perimeter	rectangle	$P = 2l + 2w$ or $P = 2(l + w)$
Circumference	circle	$C = 2\pi r$ or $C = \pi d$
Area	rectangle	$A = lw$ or $A = bh$
	triangle	$A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$
	trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$ or $A = \frac{(b_1 + b_2)h}{2}$
	circle	$A = \pi r^2$
Surface Area	cube	$S = 6s^2$
	cylinder (lateral)	$S = 2\pi rh$
	cylinder (total)	$S = 2\pi rh + 2\pi r^2$ or $S = 2\pi r(h + r)$
	cone (lateral)	$S = \pi rl$
	cone (total)	$S = \pi rl + \pi r^2$ or $S = \pi r(l + r)$
	sphere	$S = 4\pi r^2$
Volume	prism or cylinder	$V = Bh^*$
	pyramid or cone	$V = \frac{1}{3}Bh^*$
	sphere	$V = \frac{4}{3}\pi r^3$
<i>*B represents the area of the Base of a solid figure.</i>		
Pi	π	$\pi \approx 3.14$ or $\pi \approx \frac{22}{7}$
Pythagorean Theorem		$a^2 + b^2 = c^2$
Distance Formula		$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
Slope of a Line		$m = \frac{y_2 - y_1}{x_2 - x_1}$
Midpoint Formula		$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
Quadratic Formula		$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Slope-Intercept Form of an Equation		$y = mx + b$
Point-Slope Form of an Equation		$y - y_1 = m(x - x_1)$
Standard Form of an Equation		$Ax + By = C$
Simple Interest Formula		$I = prt$

DIRECTIONS

Read each question. Then fill in the correct answer on your answer document. If a correct answer is not here, mark the letter for “Not here.”

SAMPLE A

Find the slope of the line $2y = 8x - 3$.

A $-\frac{3}{2}$

B 4

C 8

D Not here

SAMPLE B

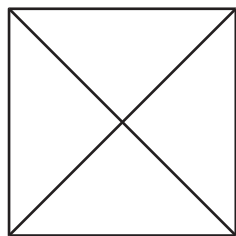
Janice uses a rectangular box to store her art supplies. The dimensions of the rectangular box are 22.5 inches by 14 inches by 11.5 inches. What is the volume of this box in cubic inches?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

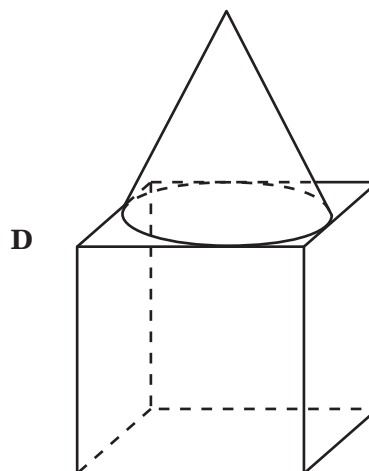
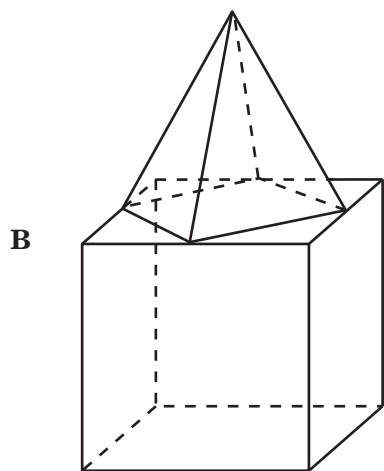
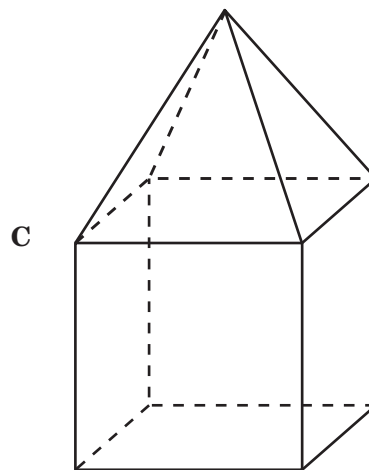
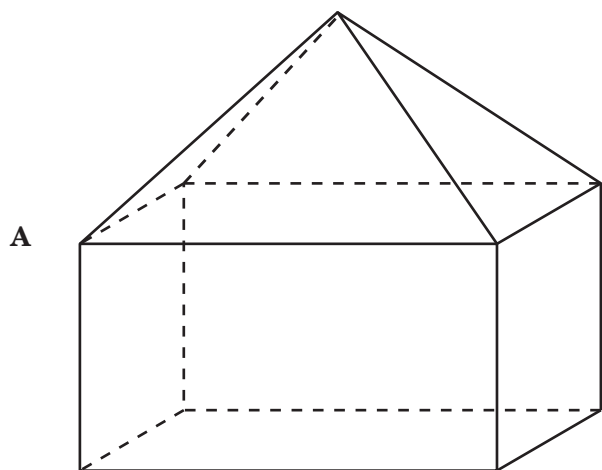


- 1 The drawing shows the top view of a 3-dimensional object.

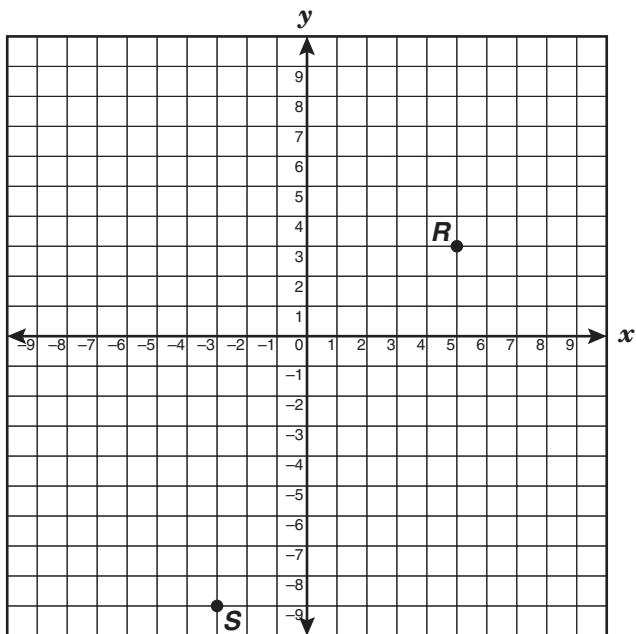
Top View



Which of the following drawings best represents this 3-dimensional object?



- 2 Which linear equation represents the line passing through points R and S ?

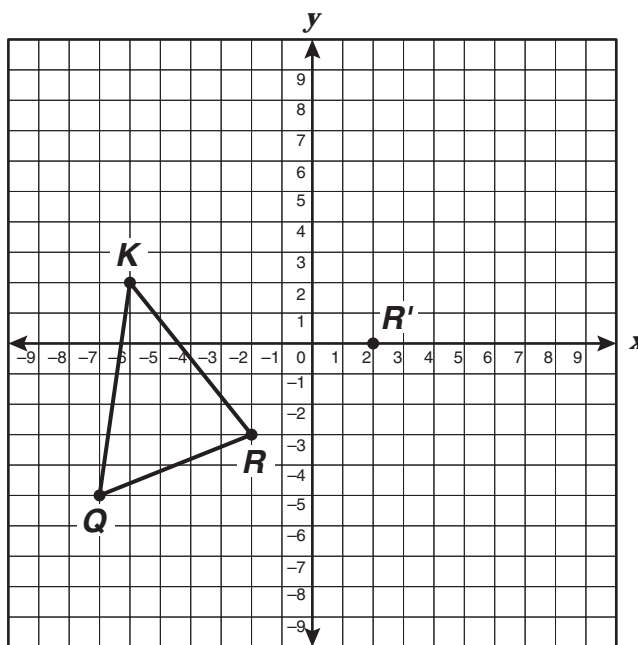


- F** $y = 1.5x - 4.5$
G $y = 1.5x + 4.5$
H $y = 0.5x - 4.5$
J $y = 0.5x + 4.5$

- 3 Lee, Kelly, Linda, and Madison all took the same math test. Linda earned a lower score than Kelly, but she did not earn the lowest score. The highest test-scorer's name does not begin with an L. Madison earned a higher score than Kelly. Which person earned the lowest score on the math test?

- A** Kelly
B Lee
C Linda
D Madison

- 4 $\triangle KQR$ is translated so that R is mapped to R' .



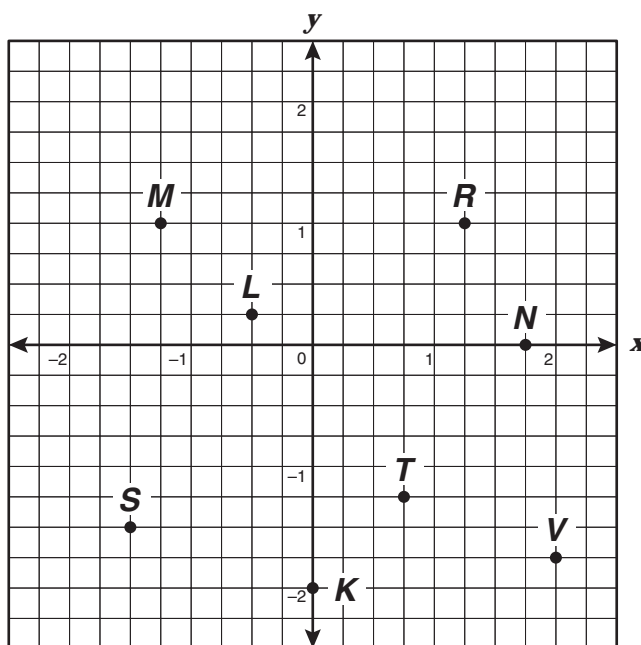
Which ordered pair best represents either point K' or point Q' ?

- F $K'(-3, 6)$
- G $Q'(-4, -1)$
- H $K'(5, -2)$
- J $Q'(-3, -2)$

- 5 Ms. Adams bought a refrigerator that cost \$1200, including tax. The cost of electricity to run this refrigerator is estimated at \$78 per year. Which equation best represents c , the total cost of the refrigerator including electricity over n years of operation?

- A $c = 1200(78n)$
- B $c = 1200(n + 78)$
- C $c = 1200 - 78n$
- D $c = 1200 + 78n$

- 6 Which of the following ordered pairs best represents the location of point T ?



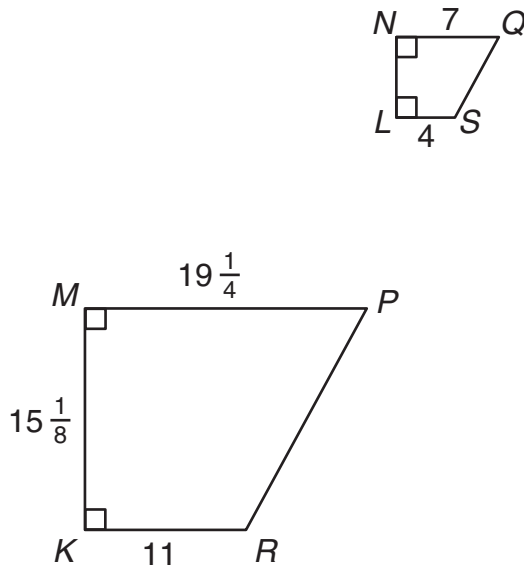
F $(\frac{3}{2}, -\frac{5}{2})$

G $(\frac{3}{4}, -\frac{5}{4})$

H $(\frac{3}{4}, -\frac{3}{2})$

J $(\frac{5}{2}, -\frac{3}{2})$

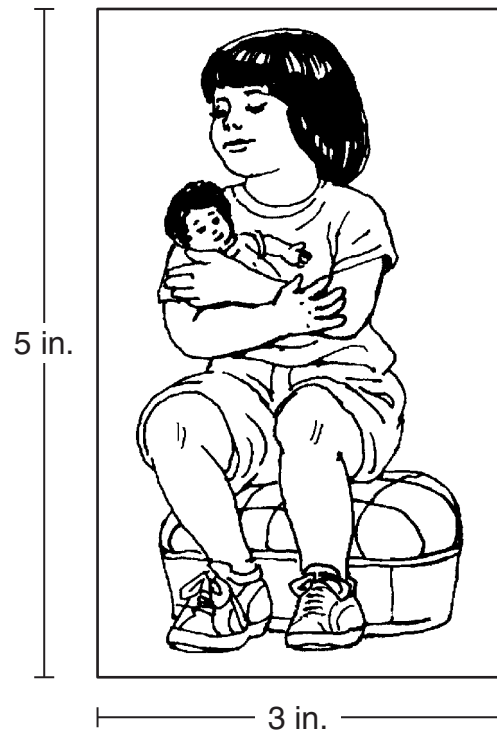
- 7 Trapezoid $KMPR$ is similar to trapezoid $LNQS$.



Which is closest to the perimeter of trapezoid $LNQS$?

- A 23 units
- B 31 units
- C 25 units
- D 63 units

- 8 An artist painted a mural from the photograph shown below.



If the artist used a scale of $\frac{1}{2}$ inch to represent 1 foot, which of the following best represents the dimensions in feet of the mural?

- F $4\frac{1}{2}$ ft by $7\frac{1}{2}$ ft
- G $1\frac{1}{2}$ ft by $2\frac{1}{2}$ ft
- H 6 ft by 10 ft
- J 9 ft by 15 ft

- 9 The price for this year's season tickets to a city hockey team's games was reduced by 15% from last year's ticket price, x . As a result, there was a 22% increase in the number of season-tickets sold this year. If a total of 4000 season tickets were sold last year and each season ticket is equally priced, which expression could be used to determine the total sales from this year's season tickets?

A $4000(1 + 0.22)(1 + 0.15)x$
 B $4000(1 + 0.22)(1 - 0.15)x$
 C $4000(1 - 0.22)(1 - 0.15)x$
 D $4000(1 - 0.22)(1 + 0.15)x$

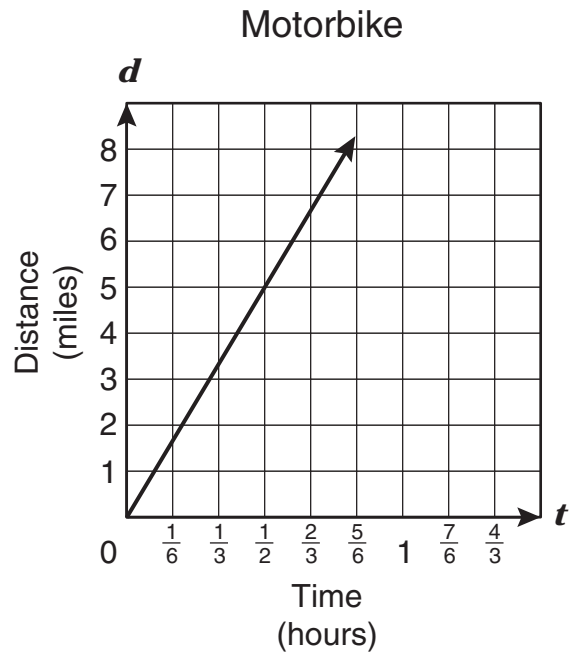
- 10 If y is a function of x in the equation $y = x^2 - 9$, which statement is true?

F The independent variable x is equal to 9 less than the square of the dependent variable y .
 G The independent variable y is equal to 9 less than the square of the dependent variable x .
 H The dependent variable y is equal to 9 less than the square of the independent variable x .
 J The dependent variable x is equal to 9 less than the square of the independent variable y .

- 11 Which of the following shapes could not represent a top, front, or side view of a trapezoidal prism?

A A square
 B A trapezoid
 C A rectangle
 D A triangle

- 12 The graph shows the distance a certain motorbike can travel at a constant speed with respect to time.



Which of the following best describes the meaning of the slope of the line representing this situation?

F The motorbike travels at a speed of about 8 miles per hour.
 G The motorbike travels at a speed of about 2.5 miles per hour.
 H The motorbike travels at a speed of about 5 miles per hour.
 J The motorbike travels at a speed of about 10 miles per hour.

13 For a spring break special, an amusement park charged \$10 per person for admission with unlimited rides. The regular admission price is \$5 per person plus \$0.50 per ride. Which of the following statements is true?

- A** If a person plans to get on 10 rides, the spring break special costs less.
- B** If a person plans to get on 10 rides, the regular admission price costs less.
- C** If a person plans to get on fewer than 10 rides, the regular admission price costs less.
- D** The spring break special costs less no matter how many rides a person plans to get on.

14 The table below shows the relationship between p , the number of cell phones a company produces, and d , the number of cell phones that are defective.

Cell Phones

Number Produced	Number Defective
100	5
200	10
300	15
400	20
500	25

Which equation can be used to describe this relationship?

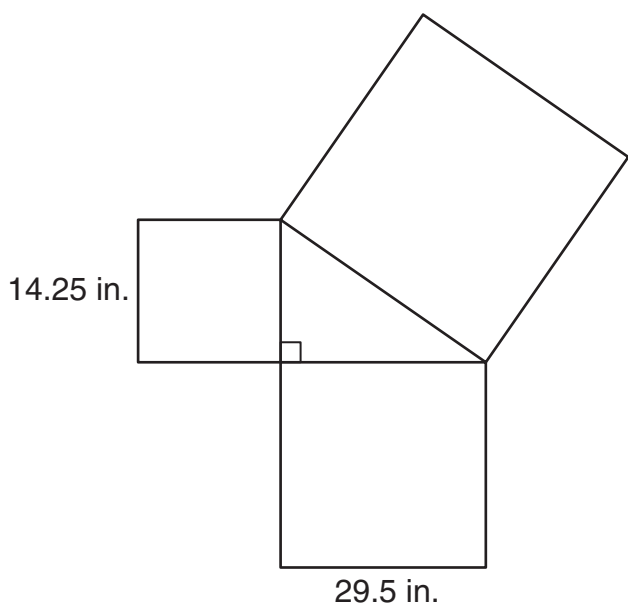
F $d = 20p$

G $d = 0.05p$

H $d = \frac{p - 90}{2}$

J $d = p - 95$

- 15** The drawing below shows how 3 squares can be joined at their vertices to form a right triangle.



Which is closest to the area in square inches of the largest square?

- A** 1914 in.²
B 233 in.²
C 210 in.²
D 1073 in.²
- 16** Simplify the expression $6 - 3(5x + 2) - 10x$.
- F** $-25x$
G $5x + 6$
H $8 - 25x$
J $12 - 25x$

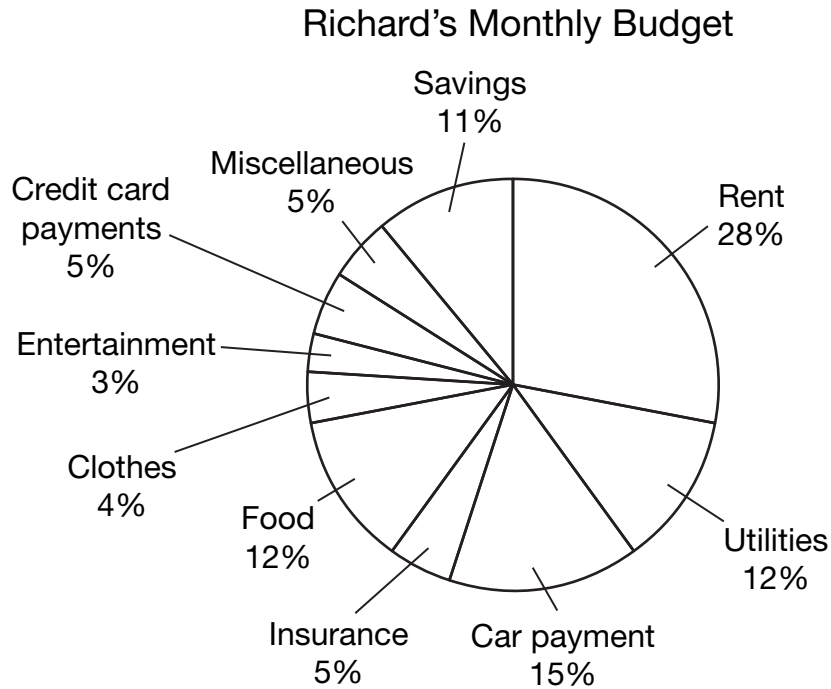
- 17** Jerry has a CD case that contains 4 country music CDs, 1 rock-and-roll CD, 2 rap CDs, and 3 Tejano CDs. What is the probability of Jerry randomly selecting a Tejano CD and then, without replacing it, randomly selecting a rap CD from his case?

- A** $\frac{1}{2}$
B $\frac{1}{15}$
C $\frac{3}{50}$
D $\frac{1}{20}$

- 18** Shirley graphed a function of the form $y = ax^2 + c$. She then translated the graph 8 units up, resulting in the function $y = -\frac{2}{3}x^2 + 5$. Which of the following best represents Shirley's original function?

- F** $y = -\frac{2}{3}x^2 + 13$
G $y = -\frac{2}{3}x^2 - 13$
H $y = -\frac{2}{3}x^2 + 3$
J $y = -\frac{2}{3}x^2 - 3$

- 19** Richard budgets \$1200 of his job earnings on a monthly basis. The graph below shows his monthly budget.



Which conclusion can be drawn from the information given?

- A** More than 30% of Richard's budget is for credit card payments, insurance, and food combined.
- B** Richard budgets \$384 for utilities, insurance, and his car payment combined.
- C** Less than 50% of Richard's budget is for rent, food, and utilities combined.
- D** Richard budgets \$228 for savings, entertainment, and clothes combined.

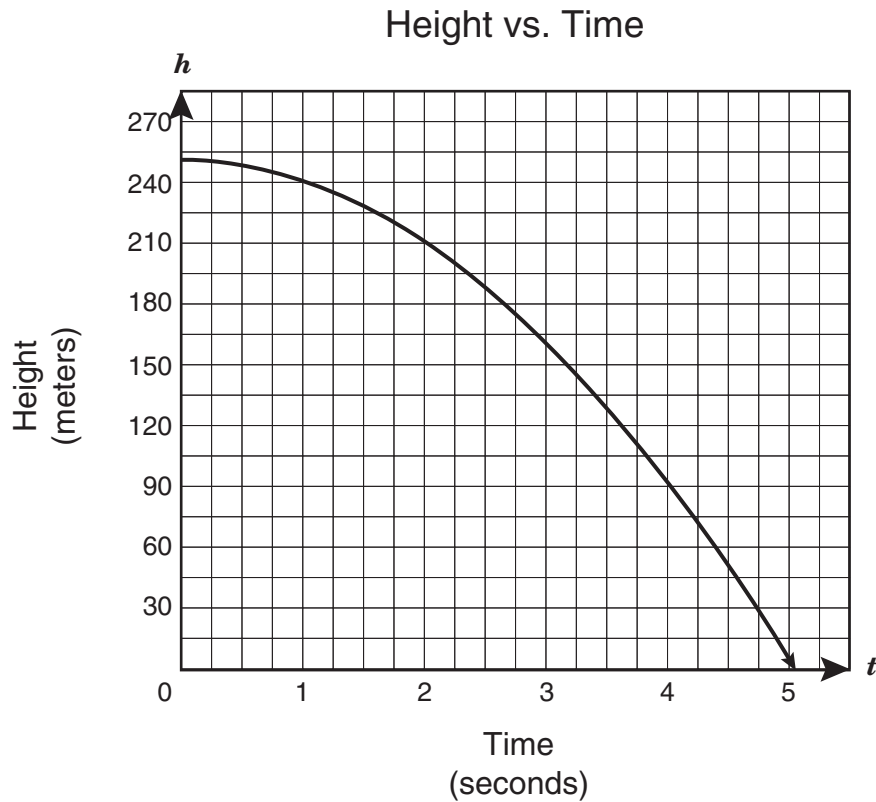
- 20** In 2004 a married couple could have calculated their estimated income tax, t , for that year using the equation $t = 0.25c - 6525$, in which c represents their combined taxable income. If a married couple had a combined taxable income between \$60,000 and \$64,000, which of the following is a reasonable amount for their income tax?

F \$6,525
G \$8,975
H \$13,869
J \$15,500

- 21** Bruce went to a barbershop for a haircut. The price for a haircut at this barbershop is \$15, tax included. If Bruce tipped the barber 15% of the cost of the haircut and the tax, how much change in dollars and cents should he have received if he paid with a \$20 bill?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

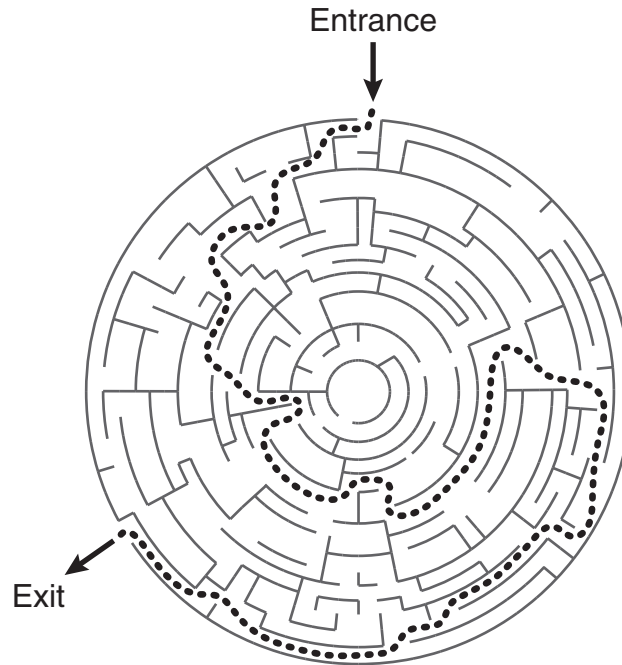
- 22** An object was dropped from a height of 250 meters and fell to the ground. The graph below shows the change in h , the object's height in meters, with respect to t , the time in seconds.



According to the graph, which time interval best represents when the object was at 140 meters above the ground?

- F** Between 3 seconds and 3.25 seconds
- G** Between 3.75 seconds and 4 seconds
- H** Between 3.5 seconds and 3.75 seconds
- J** Between 3.25 seconds and 3.5 seconds

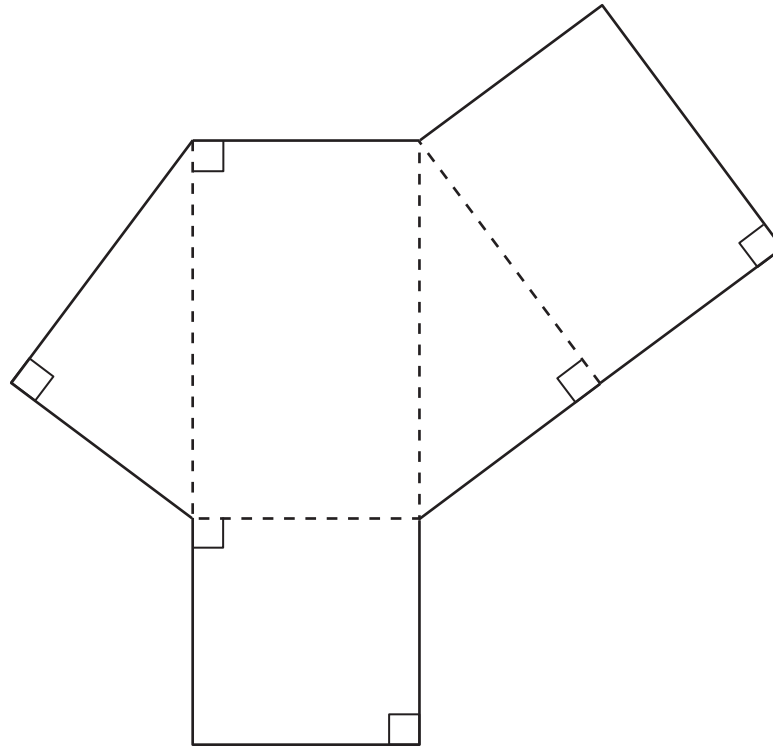
- 23** The owner of an amusement park created a circular maze that has a diameter of 50 feet.



If the owner doubles the radius of the maze, which statement describes what will happen to the circumference and area of the maze?

- A** The circumference and the area will double.
 - B** The circumference and the area will quadruple.
 - C** The circumference will double, and the area will quadruple.
 - D** The circumference will quadruple, and the area will double.
-
- 24** Stephen claims that the exterior angle for any regular polygon is either an acute angle or an obtuse angle. If each of the following polygons is regular, which one could disprove Stephen's theory?
- F** Triangle
 - G** Quadrilateral
 - H** Pentagon
 - J** Hexagon

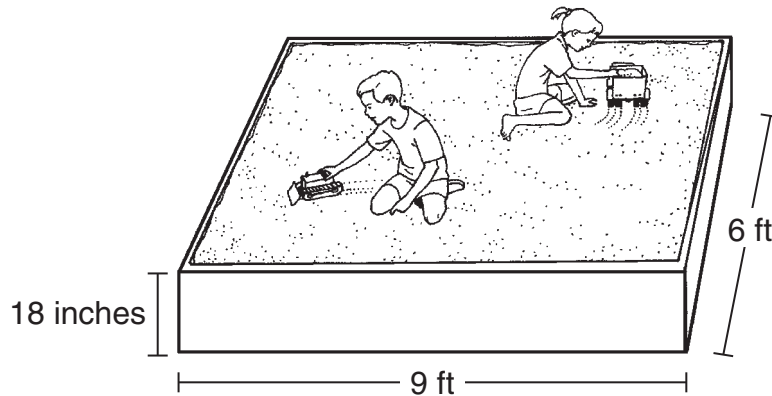
- 25** The net of a right triangular prism is shown below. Use the ruler on the Mathematics Chart to measure the dimensions of the right triangular prism to the nearest centimeter.



Which is closest to the total surface area of this right triangular prism?

- A** 18 cm^2
B 60 cm^2
C 48 cm^2
D 36 cm^2
-
- 26** What is the x -coordinate of the x -intercept of the function $\frac{2}{3}y = -6x + 12$?
- F** 12
G 18
H -9
J 2

- 27 Mr. Bergman built a rectangular sandbox for his children, as shown below.



If each 50-pound bag contains approximately 0.70 cubic foot of sand, which is closest to the number of bags of sand that Mr. Bergman used to completely fill this sandbox?

- A 81
- B 19
- C 972
- D 116

- 28 Which of these are characteristics of the parent function of a quadratic equation?

- I. The parent function of a quadratic equation has the vertex at $(0, 0)$.
- II. The parent function of a quadratic equation opens downward.
- III. The parent function of a quadratic equation has the y -axis as its line of symmetry.

- F I and II only
- G I and III only
- H II and III only
- J I, II, and III

- 29 A toad is 25 feet north of a bullfrog. Every time the toad jumps 1 foot, the bullfrog jumps 3 feet. If both the toad and the bullfrog jump due north, how many jumps will it take for the bullfrog to pass the toad?

- A 12
- B 9
- C 13
- D 7

- 30** A pattern exists for digits in the ones place of the value that results from raising 7 to the power of n , where n is an integer greater than or equal to 1.

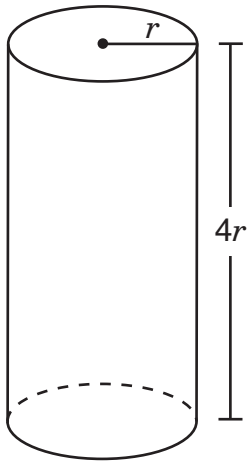
Digits in Ones Place of 7^n

7^n	Value	Digit in Ones Place
7^1	7	7
7^2	49	9
7^3	343	3
7^4	2,401	1
7^5	16,807	7
7^6	117,649	9
7^7	823,543	3

Which digit is in the ones place of the value of 7^{50} ?

- F** 7
G 9
H 3
J 1

- 31 Look at the cylinder shown below.



Which equation best represents the volume, V , of this cylinder in terms of π ?

- A $V = 16\pi r^2$
- B $V = 8\pi r^3$
- C $V = 4\pi r^2$
- D $V = 4\pi r^3$

- 32 Norma and Laretta went to a store to buy DVDs on sale for \$5 each, tax included. Norma purchased two and a half times as many DVDs as Laretta purchased. Together they purchased 14 DVDs. Which system of linear equations can be used to determine n , the number of DVDs Norma purchased, and l , the number of DVDs Laretta purchased?

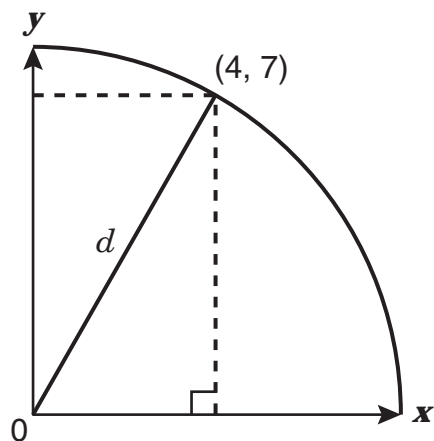
F $n + l = 14$
 $n = \frac{1}{2}l$

G $5n + 5l = 14$
 $l = \frac{1}{2}n$

H $n + l = 14$
 $n = \frac{5}{2}l$

J $n + l = 14$
 $l = \frac{5}{2}n$

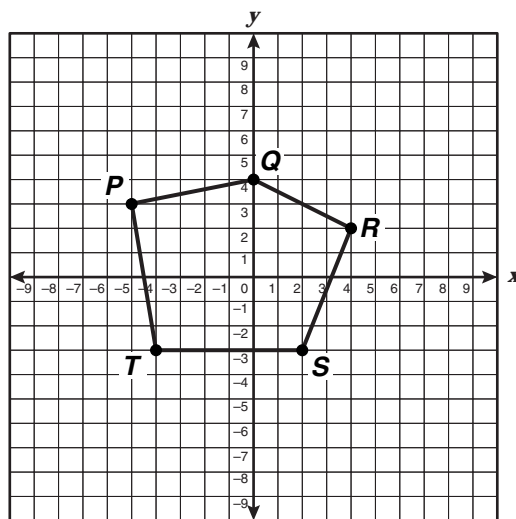
- 33 Mrs. Aman asked her students to look at the drawing shown below to determine the length of d .



Which of the following student responses best represents the length of d ?

- A 8 units
- B 11 units
- C 14 units
- D 3 units

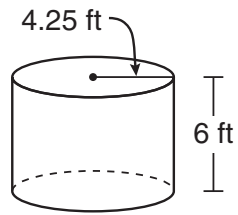
- 34 Pentagon $PQRST$ is graphed on the coordinate grid below.



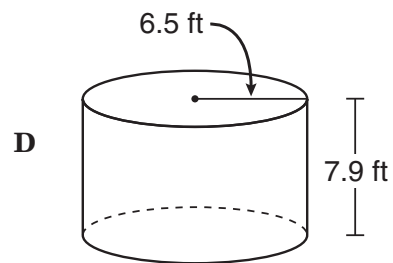
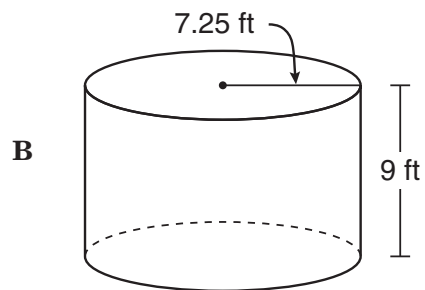
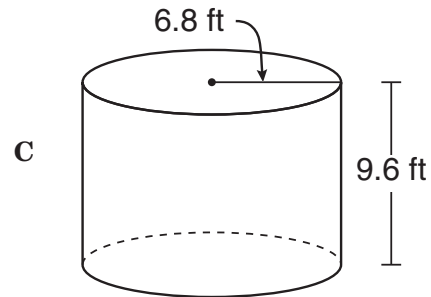
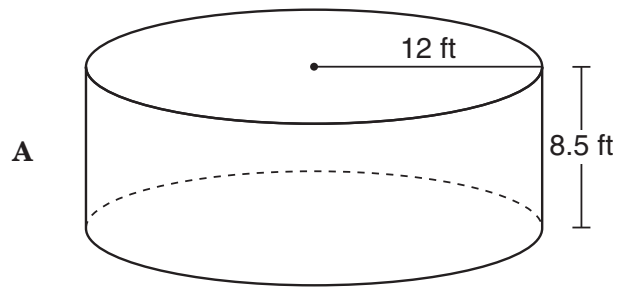
Which of the following points would be the location of S' if pentagon $PQRST$ is dilated by a scale factor of 2 and has a center of dilation at $(0, 0)$?

- F $(-6, 4)$
- G $(2, -6)$
- H $(4, -6)$
- J $(4, -3)$

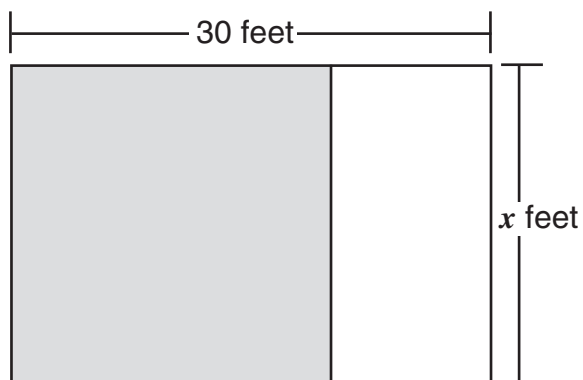
35 Look at the cylinder shown below.



Which of the following cylinders is similar to the one above?



- 36** The area of the shaded portion of the rectangle shown below is 440 square feet.







How can the area of the unshaded portion of the rectangle be expressed in terms of x in square feet?

- F** $440x - 30$
- G** $(30 + x)440$
- H** $(30 - 440)x$
- J** $30x - 440$

- 37** Which lists the functions of the form $y = ax^2$ in order from the widest to the narrowest graph?

- A** $y = \frac{7}{3}x^2$, $y = \frac{2}{3}x^2$, $y = \frac{1}{2}x^2$, $y = 2x^2$
- B** $y = \frac{1}{2}x^2$, $y = \frac{2}{3}x^2$, $y = 2x^2$, $y = \frac{7}{3}x^2$
- C** $y = \frac{7}{3}x^2$, $y = 2x^2$, $y = \frac{1}{2}x^2$, $y = \frac{2}{3}x^2$
- D** $y = 2x^2$, $y = \frac{7}{3}x^2$, $y = \frac{1}{2}x^2$, $y = \frac{2}{3}x^2$

38 The squares below show a pattern.

Stage 1	
Stage 2	
Stage 3	
Stage 4	

Which expression can be used to determine the number of squares at stage n ?

F $5n - 3$

G $4n - 2$

H $2n^2$

J $n^2 + n$

39 The length of each leg of an isosceles triangle is 5 centimeters more than twice the length of the base. If the perimeter of this isosceles triangle is 95 centimeters, what is the length of the base?

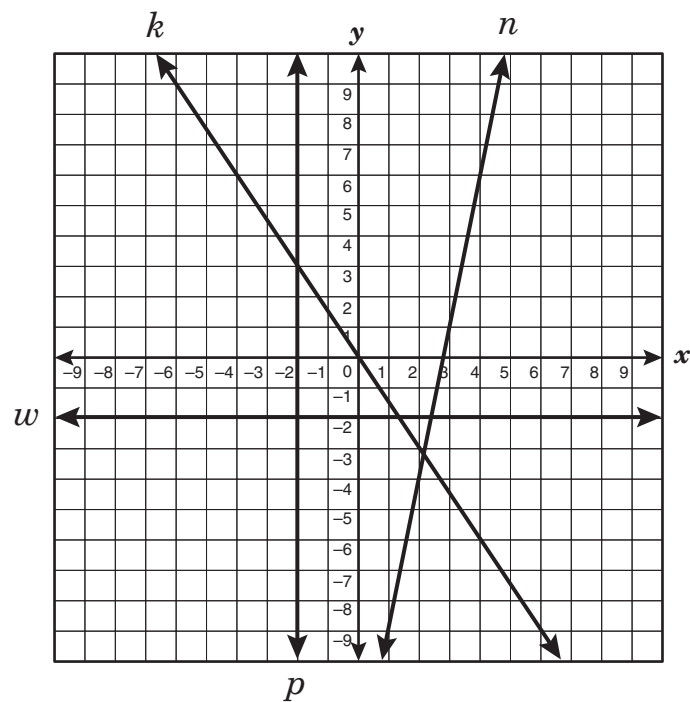
A 17 cm

B 21 cm

C 30 cm

D 39 cm

40 Which line appears to have a slope of zero?



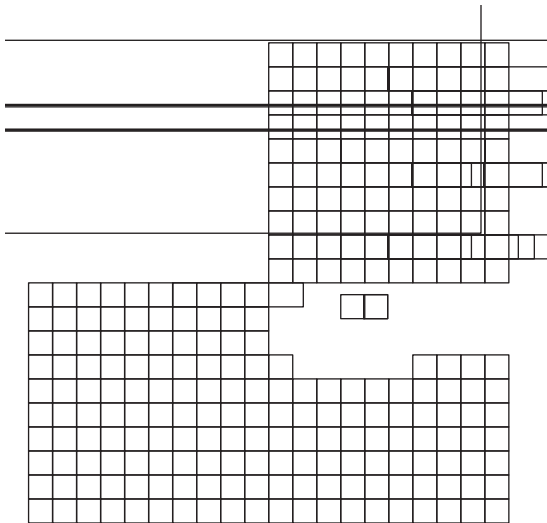
- F Line n
- G Line k
- H Line w
- J Line p

41 Jeremy's house is 45 feet wide. In a photograph the width of the house was 2.5 inches, and its height was 2 inches. What is the actual height of Jeremy's house?

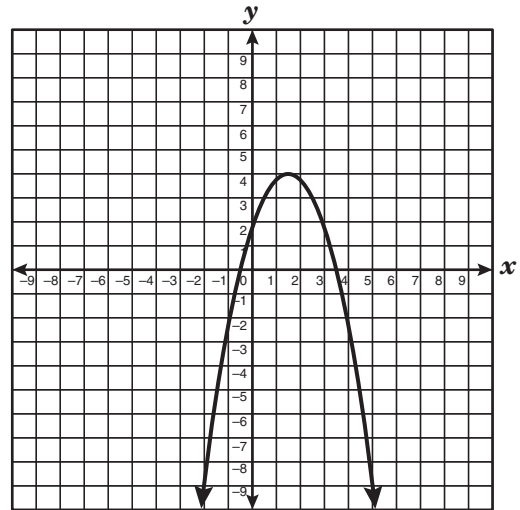
- A 18 ft
- B 26 ft
- C 32 ft
- D 36 ft

42 Which graph best represents an equation that has the roots $x = -\frac{7}{2}$ and $x = \frac{1}{2}$?

F

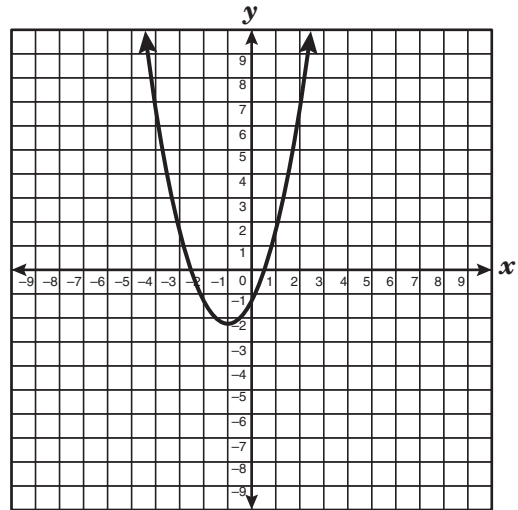


H

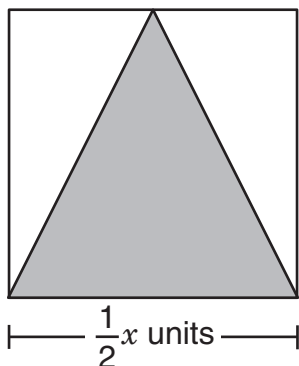


G

J



- 43 A triangle is inscribed in a square, as shown below.



What is the area of the shaded triangle inscribed in the square?

- A $\frac{1}{4}x^2$ units²
- B $\frac{1}{2}x^2$ units²
- C $\frac{1}{8}x^2$ units²
- D $\frac{1}{16}x^2$ units²

- 44 The table below shows the results of rolling a fair number cube 50 times during a classroom activity.

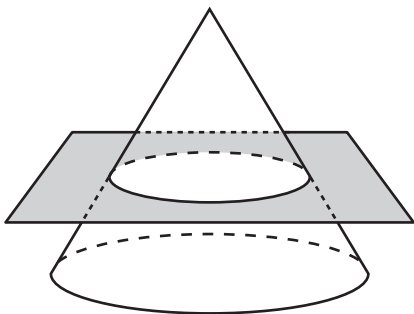
Number-Cube Data

Outcome	Frequency
1	7
2	12
3	10
4	9
5	8
6	4

What is the difference between the theoretical probability of rolling a number less than 4 and the experimental results recorded in the table above?

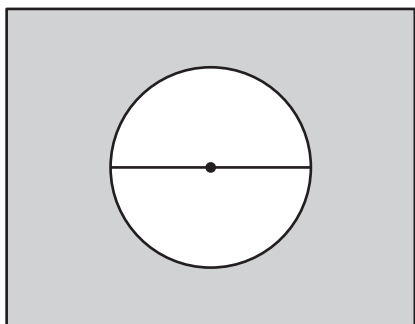
- F 8%
- G 79%
- H 58%
- J 29%

- 45 Lee designed a table that appears to be a cone with a wooden board passing through it, as shown below.

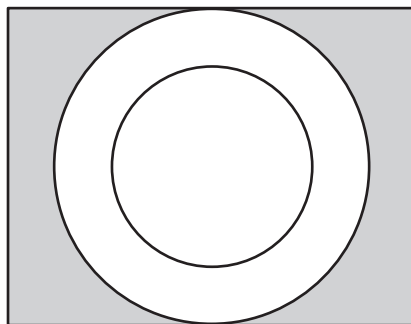


Which of the following best represents a top view of this table?

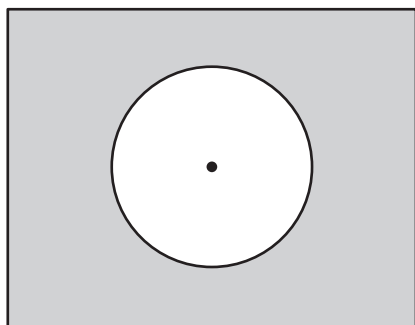
A



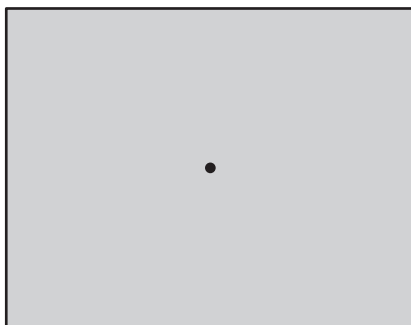
C



B



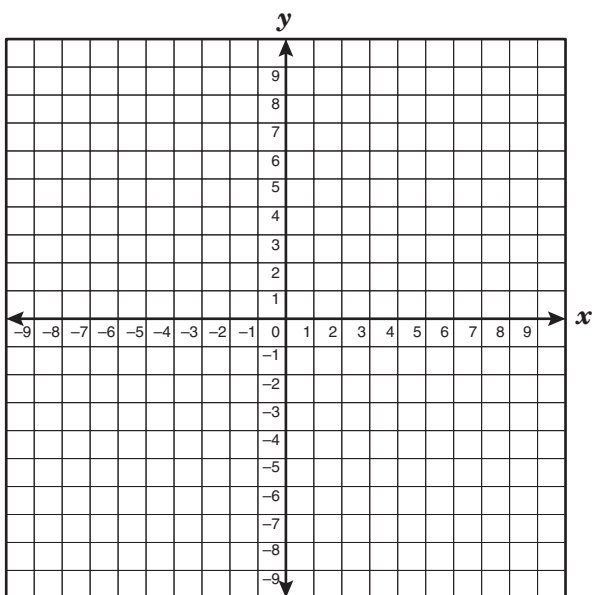
D



- 46 A rectangle has a length of $2x + 1$ and a width of $5x - 4$. Which expression best describes the area of the rectangle?

F $7x - 3$
 G $14x - 6$
 H $10x^2 - 3x - 4$
 J $10x^2 + 13x - 4$

- 47 If the system of linear equations $2x + y = 1$ and $y = -\frac{1}{2}x + 1$ are graphed on the same coordinate grid, which of the following is the solution to this system of linear equations?



A (2, 0)
 B (0, 2)
 C (0.5, 0)
 D Not here

- 48 Which data set is best described by the function $y = -2x^2 + 5x$?

F

x	y
-4	-52
-1	-3
2	2
3	9
6	-42

G

x	y
-5	-75
-3	-33
1	7
4	52
6	-42

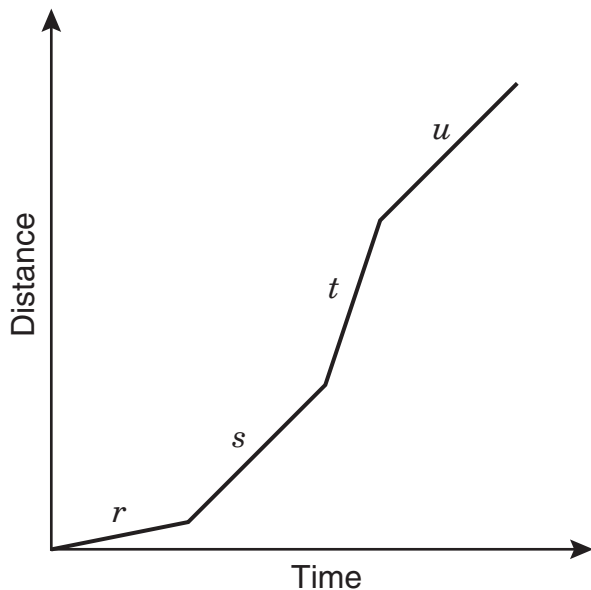
H

x	y
-3	-33
-1	-7
2	2
3	-3
5	-25

J

x	y
-2	-18
2	-2
5	-24
6	-42
8	-88

- 49 The graph below represents Cheyenne's bicycle trip from her house to a friend's house.



On which segment of the graph does it appear that Cheyenne was riding her bicycle at the slowest pace?

- A r
 B s
 C t
 D u
- 50 A chemist started an experiment with 5 grams of a chemical. The chemical was used at a rate of 0.01 gram per minute. Which equation best describes the relationship between c , the amount of chemical remaining in grams, and t , the time in minutes?
- F $c = 5.01t$
 G $c = 4.99t$
 H $c = 5 - 0.01t$
 J $c = 0.01t - 5$

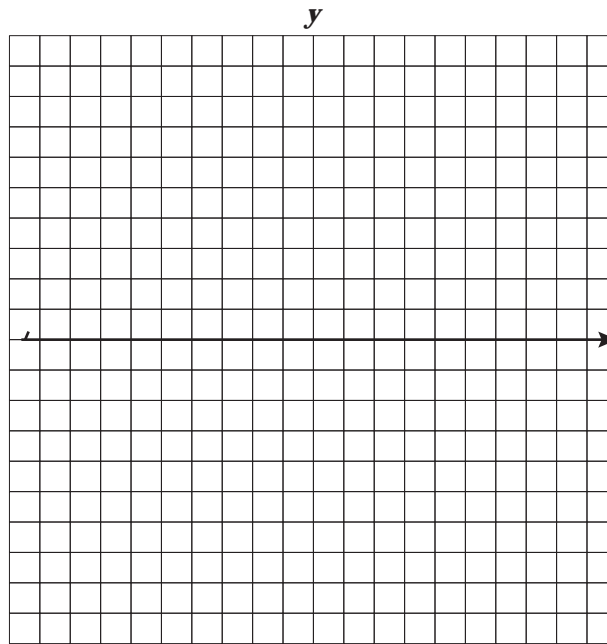
- 51 The table shows the first-class postage rates for different years.

Year	Rate
1995	\$0.32
1991	\$0.29
1989	\$0.25
1985	\$0.22
1981	\$0.18
1978	\$0.15
1975	\$0.13
1974	\$0.10
1971	\$0.08

Which conclusion is true for the data given?

- A The rate for first-class postage was above \$0.18 during the 1970s.
 B The rate for first-class postage remained below \$0.32 during the 1990s.
 C The rate for first-class postage remained below \$0.29 during the 1980s.
 D The rate for first-class postage increased by 4% between 1971 and 1995.

- 52 The circle shown below has a diameter of 10 units.



Which of the following ordered pairs best represents the location of the center of the circle?

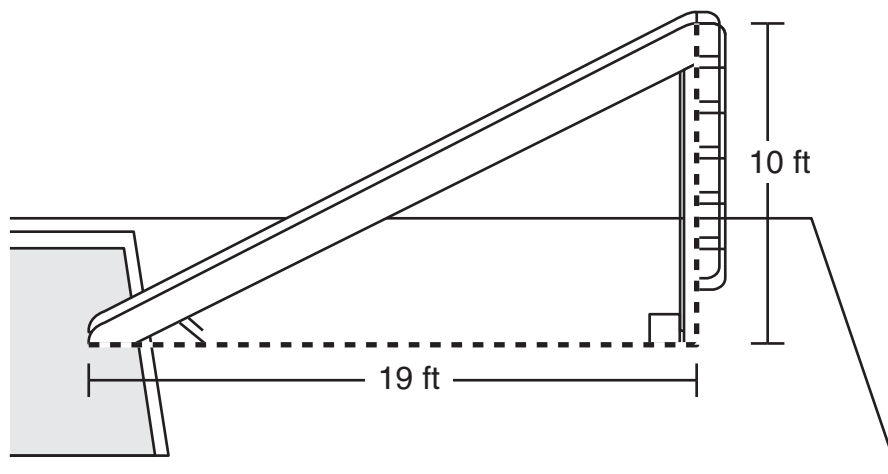
F $(-2, \frac{5}{2})$

G $(-2, 4)$

H $(-2, \frac{9}{2})$

J $(-2, \frac{7}{2})$

- 53** A slide was installed at the local swimming pool, as shown below.



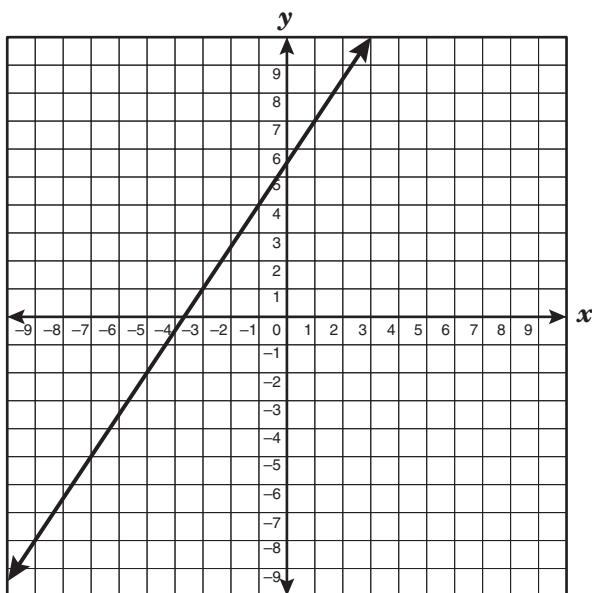
Which is closest to the length of the slide?

- A** 29 ft
- B** 16 ft
- C** 21 ft
- D** 81 ft

- 54** Marlena was asked to find an expression that is not equivalent to 2^{12} . Which of the following is not equivalent to the given expression?

- F** $(2^2)^6$
- G** $(2^8)^4$
- H** $(2^6)(2^6)$
- J** $(2^3)(2^9)$

55 Which table best describes points on the line graphed below?



A

x	y
-7	-5
-3	-1
-1	4
1	7
3	9

C

x	y
-9	-8
-5	-2
-1	4
1	7
3	10

B

x	y
-9	-8
-2	-5
-1	4
1	6
3	10

D

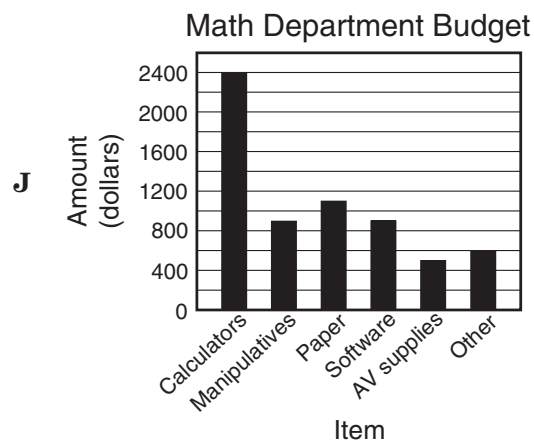
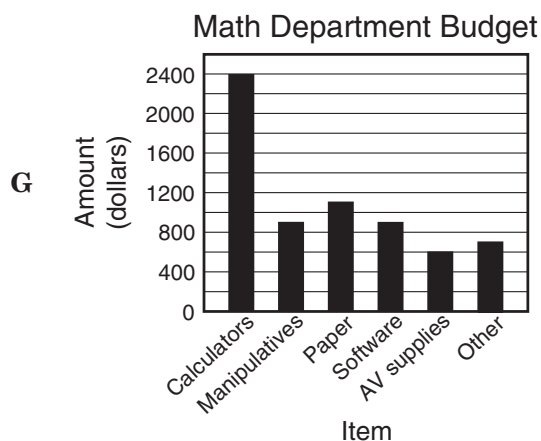
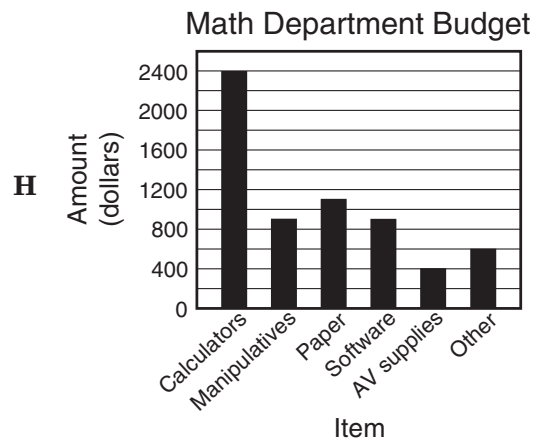
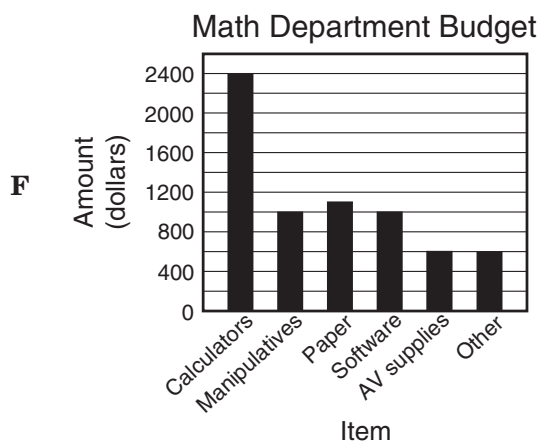
x	y
-7	-5
-5	-2
-3	-1
7	1
10	3

56 The table shows a math department's budget for the upcoming school year.

Math Department Budget

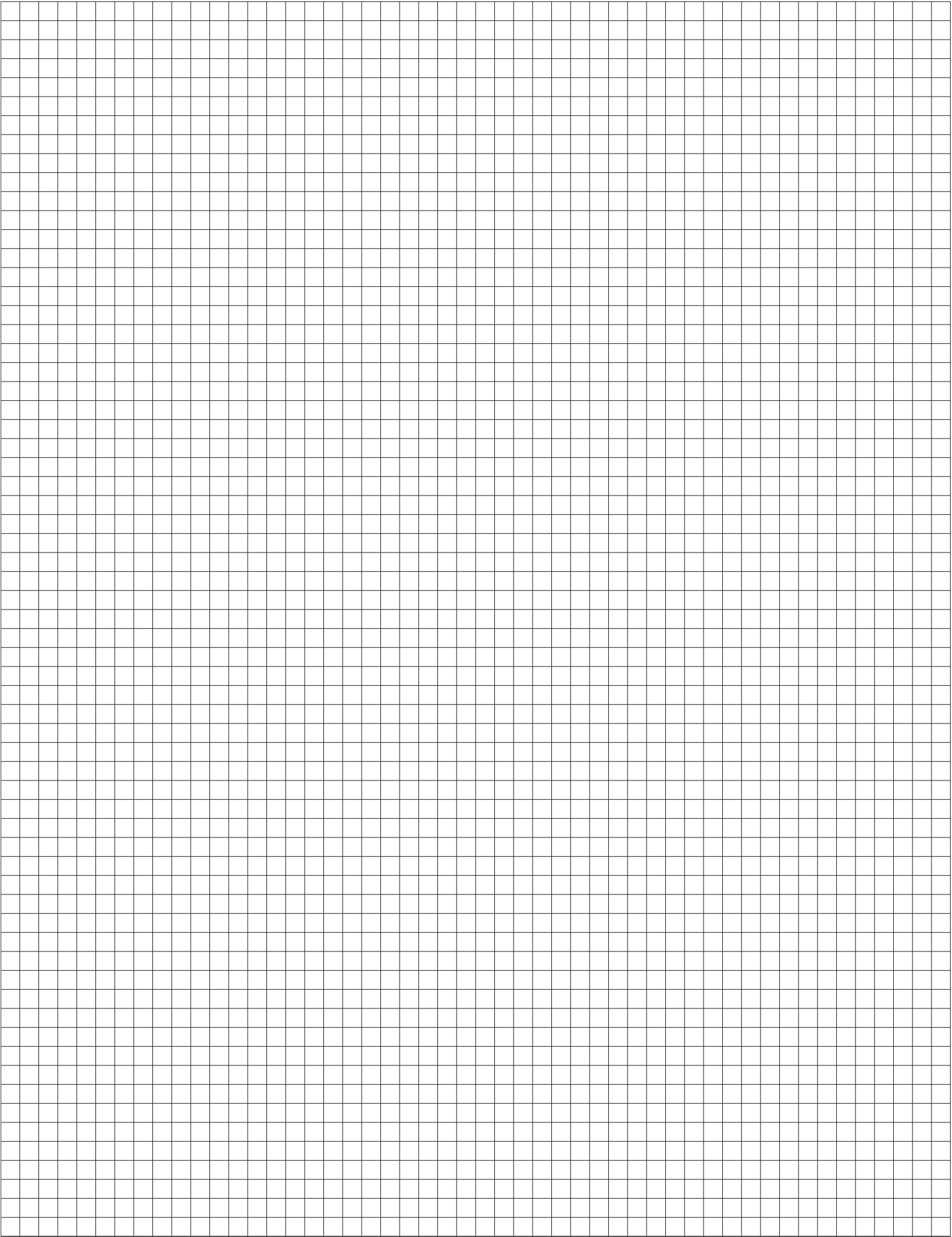
Item	Amount (dollars)
Calculators	2400
Manipulatives	900
Paper	1100
Software	900
AV supplies	500
Other	600

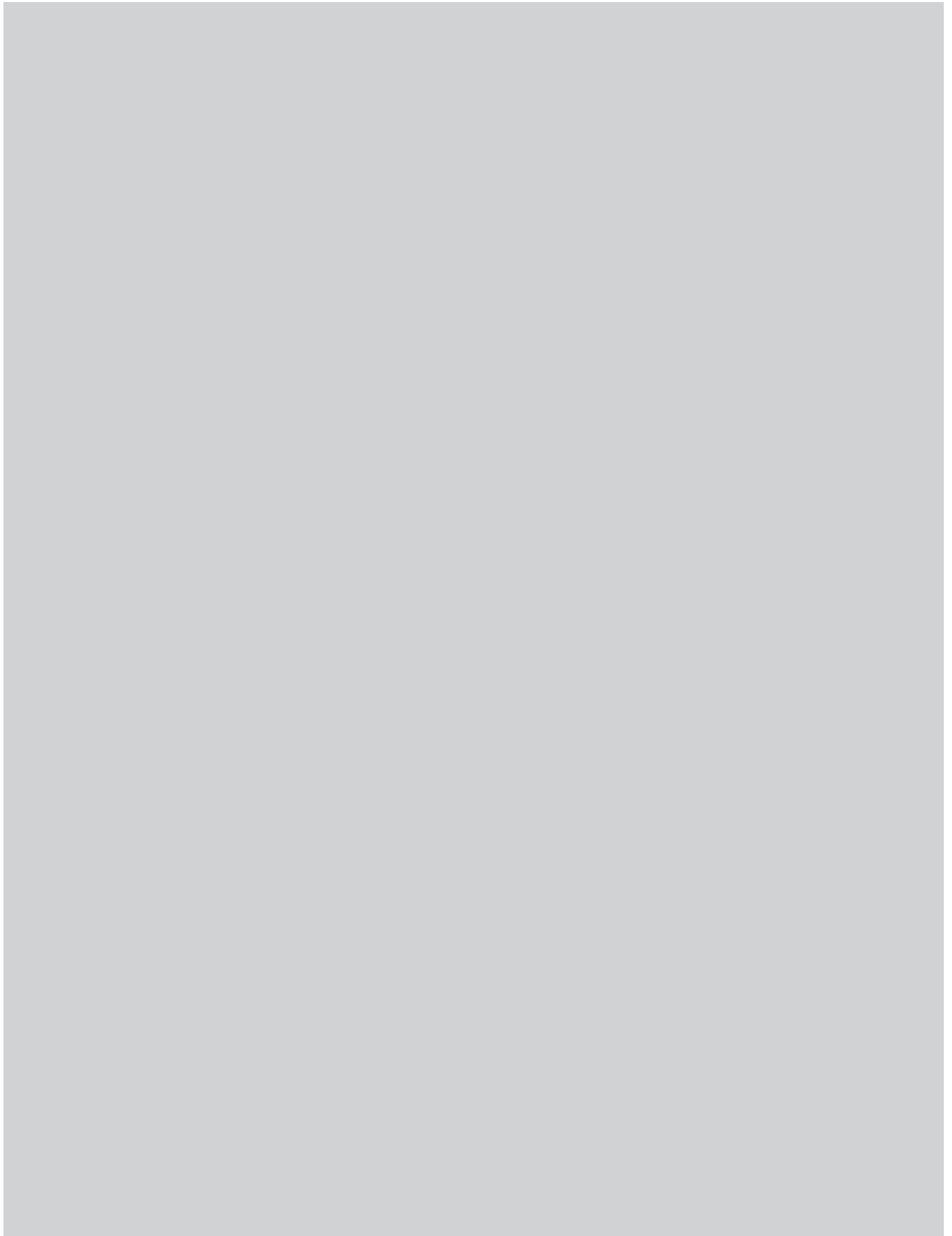
Which bar graph best represents the data given in the table?



BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS
ON THE ANSWER DOCUMENT.







SCIENCE

FORMULA CHART

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

$$D = \frac{m}{v}$$

$$\left(\begin{array}{c} \text{heat gained} \\ \text{or lost} \end{array} \right) = \left(\begin{array}{c} \text{mass in} \\ \text{grams} \end{array} \right) \left(\begin{array}{c} \text{change in} \\ \text{temperature} \end{array} \right) \left(\begin{array}{c} \text{specific} \\ \text{heat} \end{array} \right)$$

$$Q = (m)(\Delta T)(C_p)$$

$$\text{Speed} = \frac{\text{distance traveled}}{\text{time}}$$

$$v = \frac{d}{t}$$

$$\text{Acceleration} = \frac{\text{final velocity} - \text{initial velocity}}{\text{change in time}}$$

$$a = \frac{v_f - v_i}{\Delta t}$$

$$\text{Momentum} = \text{mass} \times \text{velocity}$$

$$p = mv$$

$$\text{Force} = \text{mass} \times \text{acceleration}$$

$$F = ma$$

$$\text{Work} = \text{force} \times \text{distance}$$

$$W = Fd$$

$$\text{Power} = \frac{\text{work}}{\text{time}}$$

$$P = \frac{W}{t}$$

$$\% \text{ efficiency} = \frac{\text{work output}}{\text{work input}} \times 100$$

$$\% = \frac{W_o}{W_i} \times 100$$

$$\text{Kinetic energy} = \frac{1}{2} (\text{mass} \times \text{velocity}^2)$$

$$KE = \frac{mv^2}{2}$$

$$\text{Gravitational potential energy} = \text{mass} \times \text{acceleration due to gravity} \times \text{height}$$

$$PE = mgh$$

$$\text{Energy} = \text{mass} \times (\text{speed of light})^2$$

$$E = mc^2$$

$$\text{Velocity of a wave} = \text{frequency} \times \text{wavelength}$$

$$v = f\lambda$$

$$\text{Current} = \frac{\text{voltage}}{\text{resistance}}$$

$$I = \frac{V}{R}$$

$$\text{Electrical power} = \text{voltage} \times \text{current}$$

$$P = VI$$

$$\text{Electrical energy} = \text{power} \times \text{time}$$

$$E = Pt$$

Constants/Conversions		
$g = \text{acceleration due to gravity} = 9.8 \text{ m/s}^2$		
$c = \text{speed of light} = 3 \times 10^8 \text{ m/s}$		
$\text{speed of sound} = 343 \text{ m/s at sea level and } 20^\circ\text{C}$		
$1 \text{ cm}^3 = 1 \text{ mL}$		
$1 \text{ wave cycle/second} = 1 \text{ hertz (Hz)}$		
$1 \text{ calorie (cal)} = 4.18 \text{ joules}$		
$1000 \text{ calories (cal)} = 1 \text{ Calorie (Cal)} = 1 \text{ kilocalorie (kcal)}$		
$\text{newton (N)} = \text{kgm/s}^2$		
$\text{joule (J)} = \text{Nm}$		
$\text{watt (W)} = \text{J/s} = \text{Nm/s}$		
volt (V)	ampere (A)	ohm (Ω)

Atomic number	14
Symbol	Si
Atomic mass	28.086
Silicon	

Revised October 15, 2001

DIRECTIONS

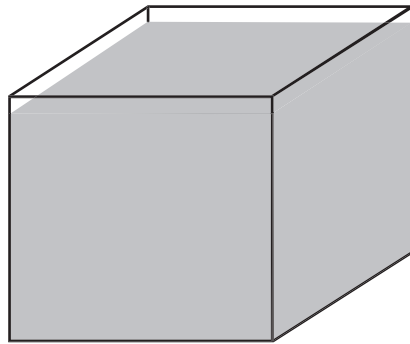
Read each question and choose the best answer. Then fill in the correct answer on your answer document.

SAMPLE A

When a 10% hydrochloric acid solution is heated in an open test tube, the test tube should always be pointed —

- A** so bubbles are visible
- B** at a 180° angle from the flame
- C** toward a ventilated area
- D** away from nearby people

SAMPLE B

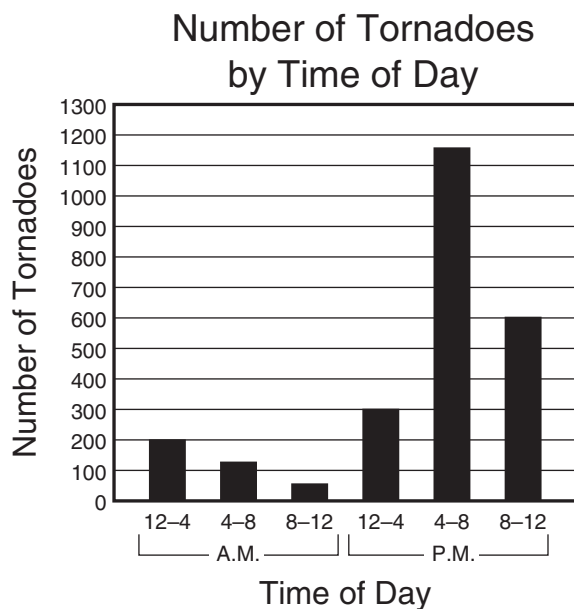


Mass = 40 g

Volume = 20 mL

The picture shows a cube that contains 20 mL of a solution. The solution has a mass of 40 grams. What is the density in g/mL of this solution? Record and bubble in your answer on the answer document.

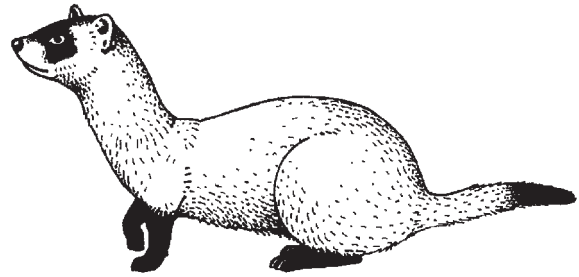




- 1 A student prepared this graph of tornadoes reported over a 50-year period in a midwestern state. Which statement is supported by these data?
- A Tornadoes are less frequent in the morning.
 - B Darkness increases the strength of tornadoes.
 - C Tornadoes occurring at night are brief.
 - D The probability of a tornado is the same throughout the day.

Save Our Species Poster: Black-Footed Ferret

This slender animal depends mainly on prairie dogs for food and shelter. The ferret lives in prairie dogs' underground tunnels and hunts them at night. When prairie dogs became scarce, so did black-footed ferrets. In 1986 the 18 ferrets known to be alive were moved to a Wyoming research institute. The number of ferrets has increased, and recently a few were released into managed wildlife areas.



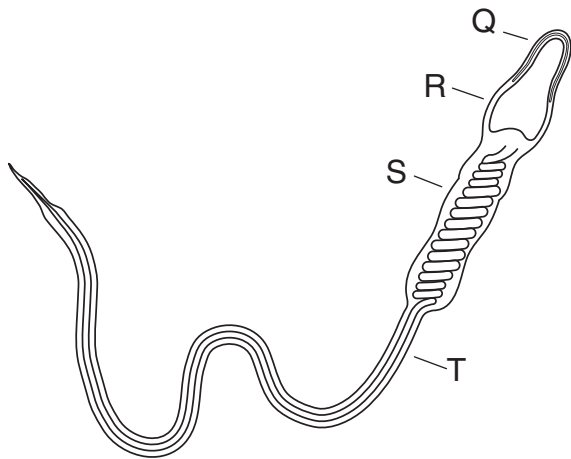
- 2 According to the information above, which of these is responsible for the decrease in the black-footed ferret population?
- F Competition with prairie dogs for resources
 - G Reduced numbers of prairie dogs
 - H Activity of research institutes
 - J Development of managed wildlife areas
-
- 3 A driver traveled 270 km in 3 hours. The driver's destination was still 150 km away. What was the driver's average speed at this point?
- A 40 km/h
 - B 90 km/h
 - C 140 km/h
 - D 420 km/h

PUBLIC SERVICE ANNOUNCEMENT: Facts About the Flu Vaccine

1. The vaccine may be administered either as a nasal spray or as an injection.
2. Prior to administration, nasal-spray vaccines must be stored at 15°C or lower.
3. In an experiment, vaccine recipients had 85% fewer flu episodes than nonrecipients.
4. The vaccine virus is heat sensitive and fails to replicate at temperatures of 38°C–39°C.

4 Which statement above makes the most valid argument in favor of receiving the flu vaccine?

- F** Statement 1
- G** Statement 2
- H** Statement 3
- J** Statement 4



- 5 The diagram shows different parts of a human sperm cell. Which part of the cell is most likely specialized for mobility?

A Q
B R
C S
D T

Hypothesis: At the end of each summer, Texas red oak (*Quercus buckleyi*) leaves turn red and fall off the trees. This is most likely caused by changes in air temperature and sunlight intensity.

- 6 Which equipment is most useful when measuring the two environmental changes mentioned above?

F Barometer and voltmeter
G Light meter and barometer
H Voltmeter and thermometer
J Thermometer and light meter

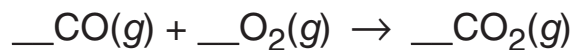
- 7 A person pushes a large box across a level floor by applying a horizontal force of 200 N. If the person pushes the box a distance of 5 meters in 10 seconds, how much work does the person do on the box?

A 2000 joules
B 1000 joules
C 400 joules
D 100 joules

- 8 A man treated his home with a pesticide that kills roaches. The first application of the pesticide killed 92% of the roaches. Two months later he applied the pesticide to his home again, but the second application killed only 65% of the roaches. What would best explain the decrease in the effectiveness of the pesticide?

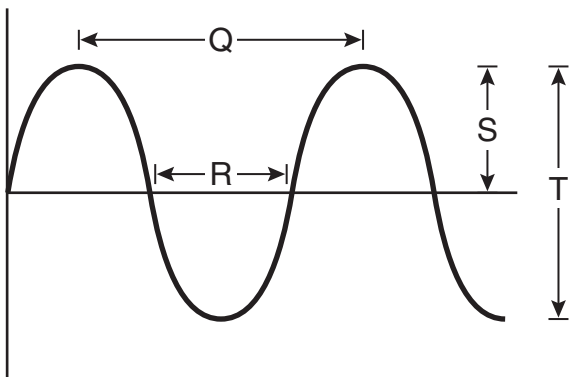
F The pesticide is effective only against mature roaches.
G Once roaches learned how to fight the pesticide, they taught others.
H The surviving roaches were naturally resistant to the pesticide, and that resistance was inherited by their offspring.
J The pesticide caused some of the roaches' digestive systems to mutate and metabolize the pesticide.

Carbon monoxide (CO) burns readily in oxygen (O₂), forming carbon dioxide (CO₂):



- 9 What coefficient values will balance the reaction shown above?

A 2, 2, 1
B 1, 1, 1
C 2, 1, 2
D 1, 2, 2



10 Which label on the model represents a wavelength?

- F Q
- G R
- H S
- J T

Car Model	City Mileage (kilometers per liter)	Highway Mileage (kilometers per liter)
J	25.4	21.7
K	25.1	28.0
L	10.3	13.2
M	8.5	11.1

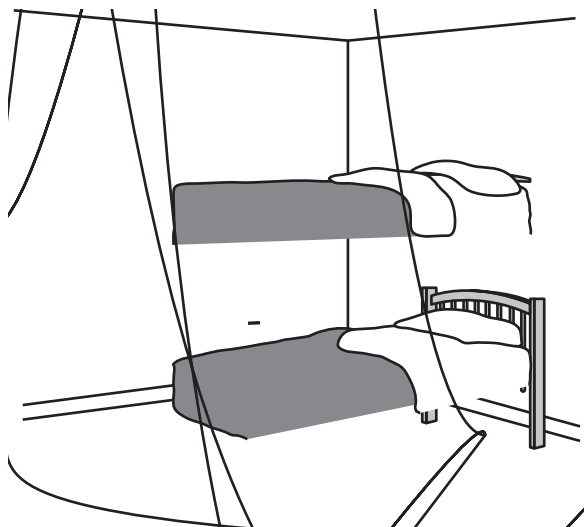
11 Greenhouse emissions from cars may contribute to global warming. Cars with better gas mileage emit smaller amounts of greenhouse gases. Which car would emit the least amount of greenhouse gases if most of the driving were done on the highway?

- A J
- B K
- C L
- D M

12 Rust (Fe_2O_3) forms on an iron (Fe) pipe after prolonged exposure to humid air. What type of change does this illustrate?

- F Mechanical
- G Nuclear
- H Chemical
- J Physical

- 15** Hemoglobin carries oxygen to body cells. Which body system contains hemoglobin?
- A** Circulatory system
 - B** Respiratory system
 - C** Endocrine system
 - D** Nervous system



- 14** In winter the air just above the top bunk of a bunk bed is warmer than the air just above the bottom bunk because warm air rises. Which of the following describes the method of heating that causes this difference in temperature?

- F** Radiation from the room
- G** Heat transfer through the walls
- H** Convection currents in the room
- J** Heat conduction through the bed

- 16** Some mesquite trees have deeper roots than any other plant in the desert. How are deep roots an adaptation for survival in the desert?
- F** Deep roots can protect the tree from predators.
 - G** Roots encounter cooler conditions far below the desert surface.
 - H** Roots can extend great distances to reach water.
 - J** Deep roots interact with beneficial bacteria below the surface.

17 Which of the following is found in both cells and viruses?

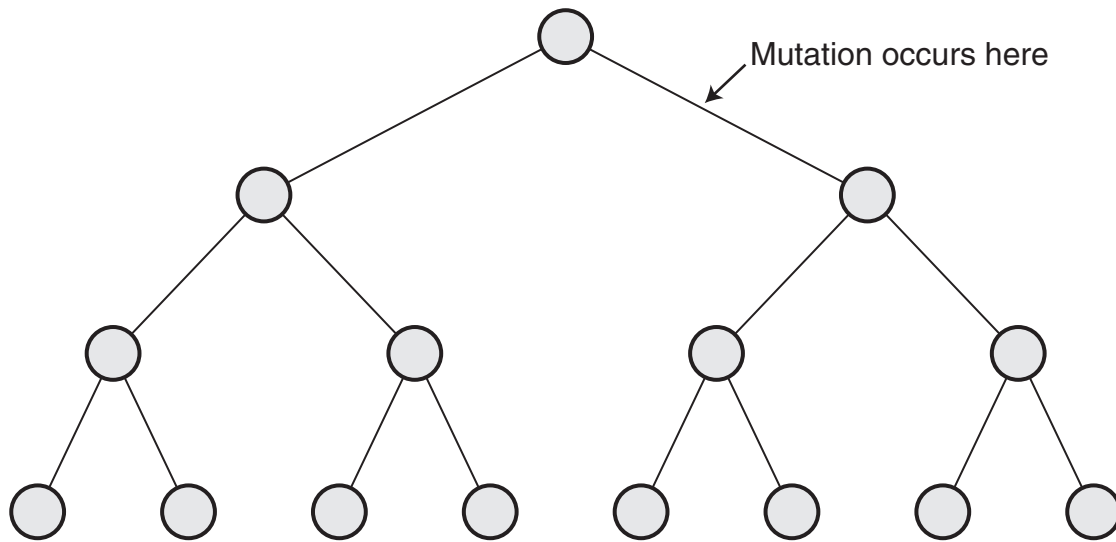
- A** Silica
- B** Genetic material
- C** Digestive cavity
- D** Flagella

18 Sheets of ice containing mostly pure water can be formed by decreasing the temperature of saltwater. Which of these best describes this change?

- F** Chemical change
- G** Physical change
- H** Nuclear change
- J** Atomic change

19 Which of these is the best example of heat transfer by radiation?

- A** A satellite is warmed by sunlight.
- B** Butter melts on warm bread.
- C** A ceiling fan cools a warm room.
- D** Puddles of water cool a warm tile floor.

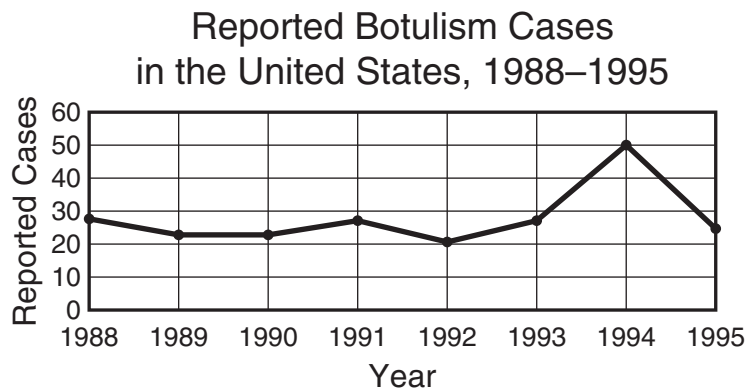


- 20** The diagram shows three generations of cells produced by a single cell through mitosis. In the process, a single mutation occurred at the point indicated. The mutation caused changes within a dominant allele. How many of the 15 cells contain the mutation? Record and bubble in your answer on the answer document.

- 21** People infected with the human immunodeficiency virus (HIV) have an increased risk of dying from secondary infections. Which of these best explains how HIV increases the danger of secondary infections?
- A** HIV produces antigens that damage red blood cells.
 - B** HIV adds genetic material from harmful microbes.
 - C** HIV destroys helper T cells.
 - D** HIV consumes beneficial microbes in the body.

- 22** Students in a chemistry lab measure the time it takes four different 100 mL solutions to pass through a hole in the bottom of a cup. Which of the following properties of the solutions is most likely being measured?

- F** Buoyancy
- G** Mass
- H** Viscosity
- J** Volume



Conclusion: Food poisoning by botulism
is increasing in the United States.

- 23** The graph shows data for botulism, a form of food poisoning. The conclusion in the box is based on these data. Which of the following is the best reason this conclusion may be unreliable?
- A** The greatest number of reported botulism cases was 50.
 - B** The number of reported botulism cases remained relatively constant from 1988 to 1995.
 - C** More botulism cases were reported in the 1980s than in the 1990s.
 - D** The number of reported botulism cases decreased after 1994.

24 Many species of bacteria can be found in the human mouth. Which of these explains the great variety of bacteria in the mouth?

- F** Large volumes of air cause bacteria to change form.
- G** Salivary glands cause mutations in bacterial populations.
- H** The presence of nutrients makes the mouth a favorable habitat.
- J** Calcium in the teeth provides a suitable pH environment.

How One Fungus Gets Nutrients

- A certain type of fungus grows sticky structures when roundworms are near.
- Roundworms that come close to the sticky structures can become trapped.
- The fungus penetrates and digests trapped roundworms.

25 Which word best describes the fungus in the situation above?

- A** Predator
- B** Producer
- C** Parasite
- D** Decomposer

Use the information below and your knowledge of science to answer questions 26–29.

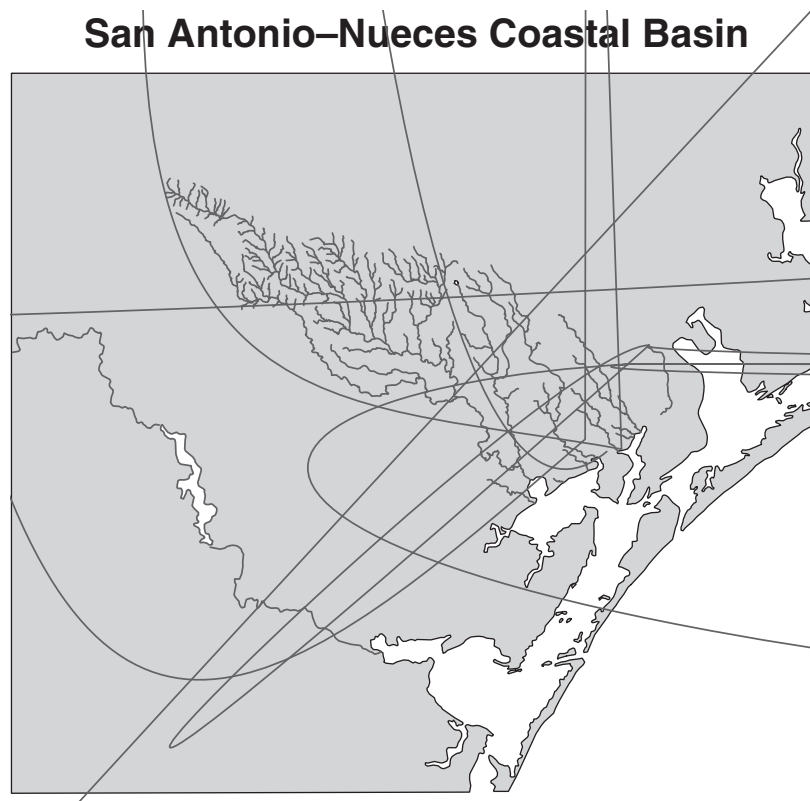
Watersheds

The San Antonio–Nueces Coastal Basin, shown in the map below, consists mainly of flatland. The soil in the area is mostly sandy and porous. Rainfall that collects in this area drains into the Gulf of Mexico by a series of waterways.

The San Antonio–Nueces Coastal Basin is one of more than 20 major watersheds in Texas. A watershed is a geographic area that drains water collected on its surface. Watersheds provide a way for water to move from areas of higher elevation to areas of lower elevation. Sediment and dissolved materials are also moved to lower elevations.

Rivers and streams form a general pattern within a watershed. The map shows this general pattern within the San Antonio–Nueces Coastal Basin. This type of pattern is called a dendritic pattern and can be observed in many natural structures, including the network of nerves in the human nervous system and branching patterns in trees.

Watersheds can change as the geography and other features of an area change. Some of the causes of change are more obvious than others. For example, the clearing of wooded areas for the construction of buildings may change the way rainfall collects and drains from an area.



26 In which general direction do rivers flow in this watershed?

- F** North
- G** West
- H** Northwest
- J** Southeast

27 Which of the following is an adaptation most likely observed in plants growing along Aransas Bay?

- A** Sensitivity to green light
- B** Tolerance of saltwater
- C** Extension of root length
- D** Resistance to predation

Results of a Scientific Study

In natural areas such as forests, about 50% of the rain seeps into the ground and becomes groundwater. In some large cities only about 30% of the rain becomes groundwater.

28 The information above could be used most effectively in arguing against which of these proposals?

- F** Adding chemicals to a local water supply
- G** Permitting a water well to be drilled in a state park
- H** Limiting the use of waterways for recreation
- J** Paving a meadow to create a parking area

29 A sample of water from a stream has a greater density than a sample of distilled water. Which is the best explanation for the difference in density?

- A** Streams have kinetic energy.
- B** Distilled water has a neutral pH.
- C** Streams can contain dissolved salts.
- D** Distilled water can contain dissolved gases.



- 30** The picture shows a piece of rotting wood. Which of these does the picture demonstrate?

F Photosynthesis occurring
G Wood regenerating
H Decomposers growing
J Genes transforming

- 31** Which is a characteristic of members of the plant kingdom that distinguishes them from members of the animal kingdom?

A Storage of energy in chemical bonds
B Exchange of H_2O with the environment
C Use of mRNA during protein production
D Use of chlorophyll for solar-energy transformation

- 32** Which of these are composed of two or more different substances that are chemically combined in a definite ratio?

F Compounds
G Mixtures
H Elements
J Solutions

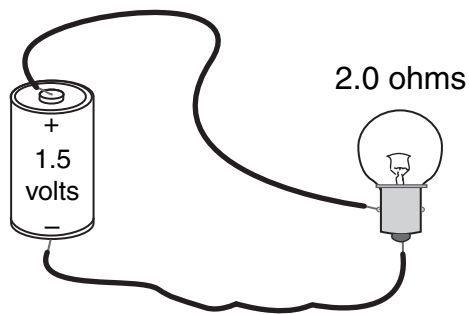
- 33** Which of the following is most useful in determining the kinetic energy of a 50 g battery-powered car traveling a distance of 10 m?

A Beaker
B Voltmeter
C Thermometer
D Stopwatch

T	tall
t	short
S	smooth
s	wrinkled

- 34 If a plant that is homozygous tall and wrinkled is crossed with a short, wrinkled plant, which percentage of genotypes would most likely be found in the first-generation offspring?

F 50% TTss, 50% ttSS
 G 100% TtSs
 H 100% Ttss
 J 50% TtSS, 50% ttSS



- 35 In this circuit, how much current flows through the lightbulb?

A 0.75 amp
 B 1.50 amps
 C 2.0 amps
 D 3.0 amps

Viral Disease	Common Method of Transmission
Smallpox	Direct contact
AIDS	Exchange of body fluids
West Nile virus	Mosquito vector
Influenza	Deposition of airborne droplets

- 36 Viruses can be transmitted in a variety of ways. The virus that causes SARS (severe acute respiratory syndrome) can be transmitted when an infected person coughs or sneezes. This virus is transmitted in a manner most similar to the transmission of —

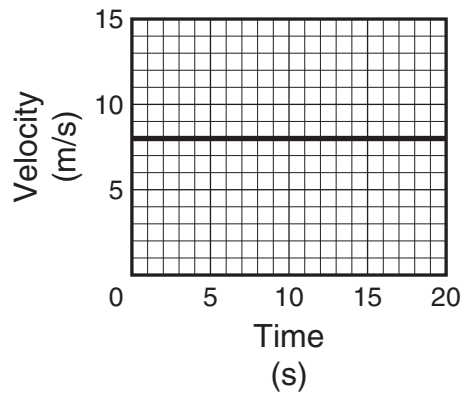
F smallpox
 G AIDS
 H West Nile virus
 J influenza

- 37 A recipe calls for 210 grams of sugar to be dissolved in 0.25 liter of water. After the mixture is stirred, some sugar crystals remain in the water. What can be added to the mixture to help dissolve the remaining sugar crystals?

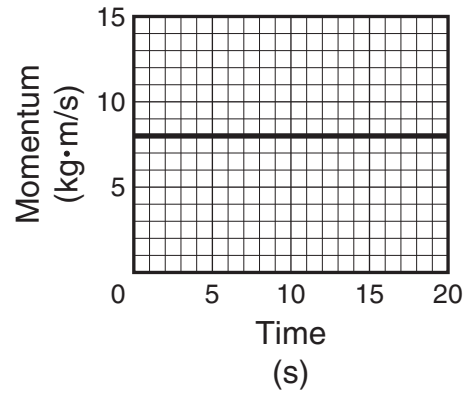
A Thermal energy
 B 2.0 g of baking soda
 C Ice cubes
 D 2.0 g of sodium chloride

38 Which graph can represent an object at rest?

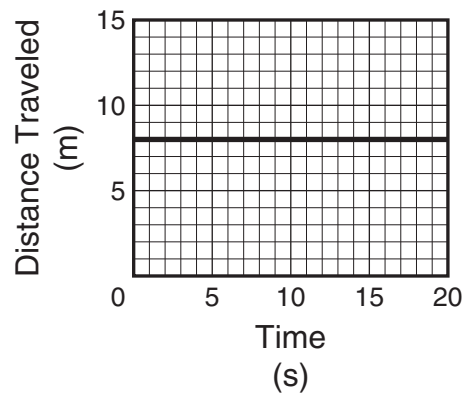
F



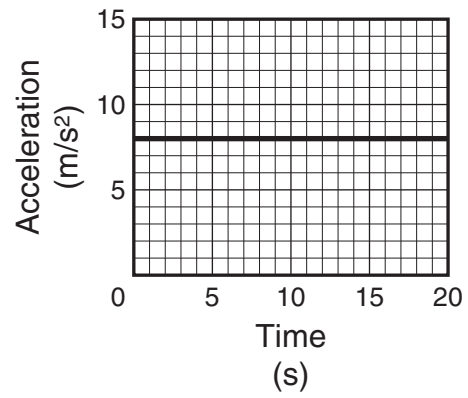
H



G



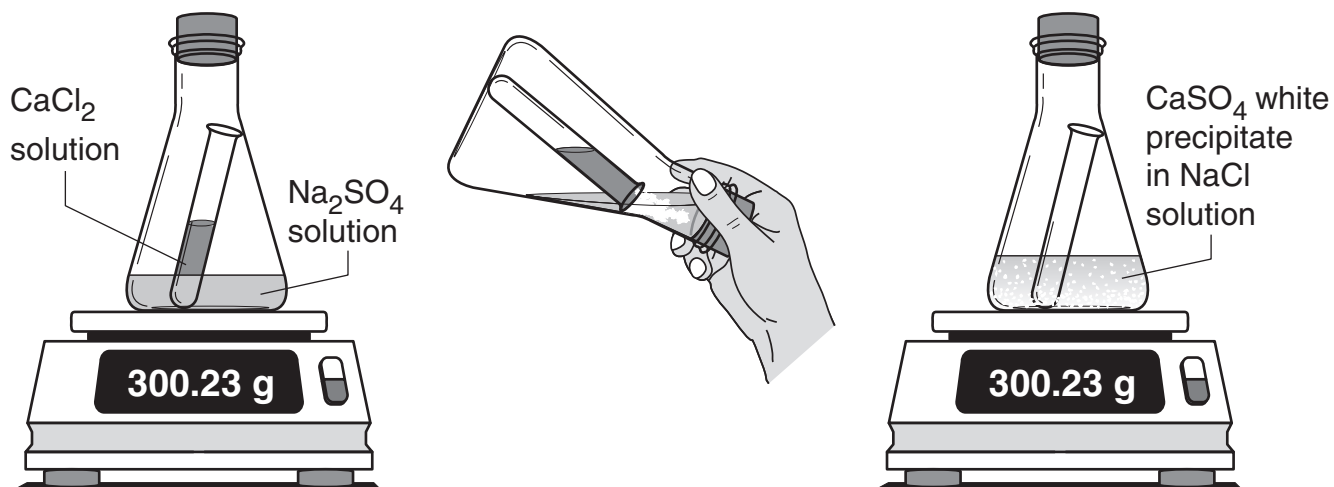
J





- 39 This illustration is an example of a normal DNA sequence. Which of the following represents a single base change in the sequence?



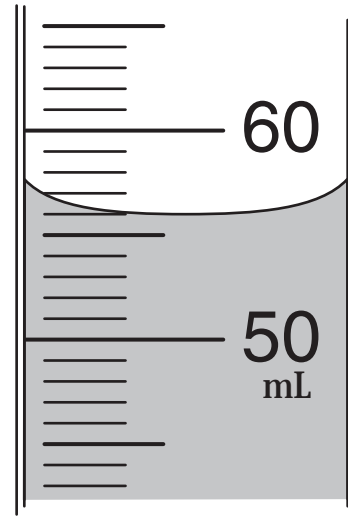


40 In the procedure shown above, a calcium chloride solution is mixed with a sodium sulfate solution to create the products shown. Which of the following is illustrated by this activity?

- F** The law of conservation of mass
- G** The theory of thermal equilibrium
- H** The law of conservation of momentum
- J** The theory of covalent bonding



- 41 The information in the box identifies some of the organs of the kitten. Which of the following is identical for every cell in each of the four organs?
- A Amount of ATP
 - B Function of cell
 - C Size of cells
 - D Genes in DNA



- 42 What volume should be reported for the solution in this graduated cylinder?
- F 64.0 mL
 - G 56.2 mL
 - H 56.0 mL
 - J 50.6 mL

Density of Seawater
from the Gulf of Mexico

Density (g/mL)	Group 1	Group 2	Group 3	Group 4
Trial 1	0.998	1.052	1.008	1.019
Trial 2	1.020	1.054	0.986	1.018
Trial 3	1.051	1.053	1.039	1.029
Average	1.023	1.053	1.011	1.022

43 The chart shows the density of seawater samples collected from the Gulf of Mexico by four different groups. Which group's data are most precise?

- A** Group 1
- B** Group 2
- C** Group 3
- D** Group 4

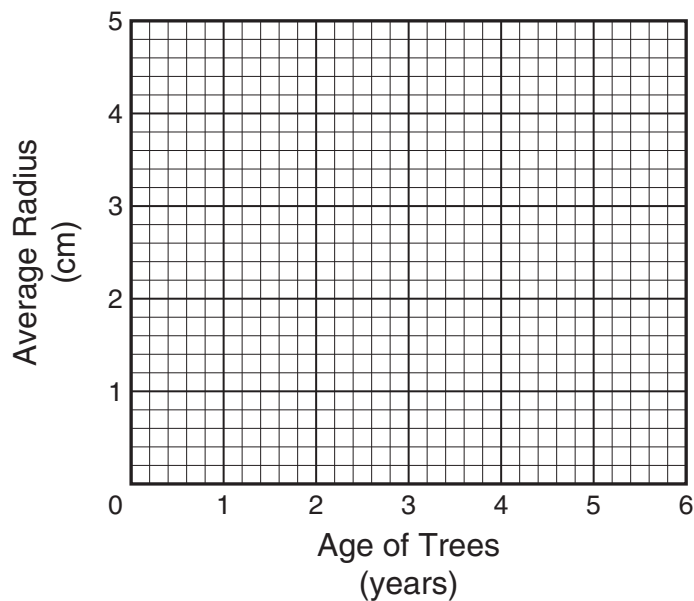
44 Cacti grow slowly compared to most other plants. The fact that cacti keep their stomata closed for much of the day can help explain this growth characteristic. Which of these best explains the advantage of keeping stomata closed during the day?

- F** It limits water loss through transpiration.
- G** It conserves oxygen produced in photosynthesis.
- H** It recycles carbon dioxide within plant systems.
- J** It protects plant tissues from predators.

Average Radius of Trees in a Forest

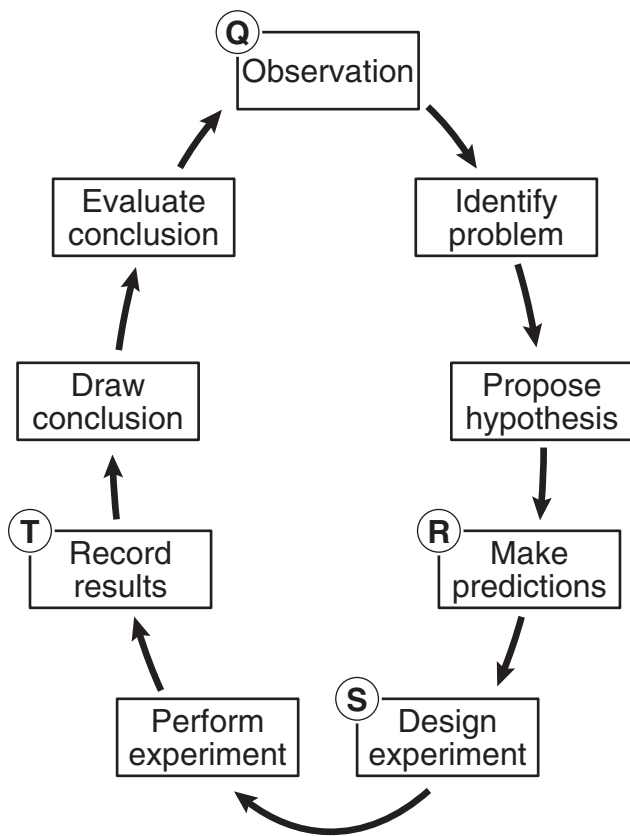
Age of Trees (years)	Average Radius (cm)
1	2.2
2	2.6
3	
4	
5	
6	4.4

Average Radius of Trees in a Forest



- 45 The data table shows how the thickness of tree trunks in a certain forest is related to tree age. Use these data to plot points on the graph above. Draw a straight line to show a linear relationship for the data. According to these data, what is the most likely average radius of 4-year-old trees in this forest?
- A 3.0 cm
 - B 3.3 cm
 - C 3.6 cm
 - D 3.9 cm

Investigation Cycle



- 46 In what part of this process should safety precautions be planned?

F Q
G R
H S
J T

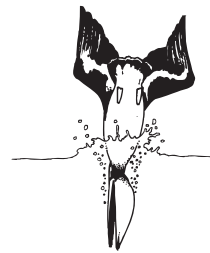
Pelican Fish-Catching Behavior



- Identifies prey



- Plunges toward prey



- Folds wings at moment of impact with water

- 47 Pelicans prevent serious wing damage by entering the water in the manner shown above. Which two organ systems in the pelican work together the most to accomplish this maneuver?

A Circulatory and nervous systems
B Nervous and muscular systems
C Muscular and digestive systems
D Digestive and circulatory systems

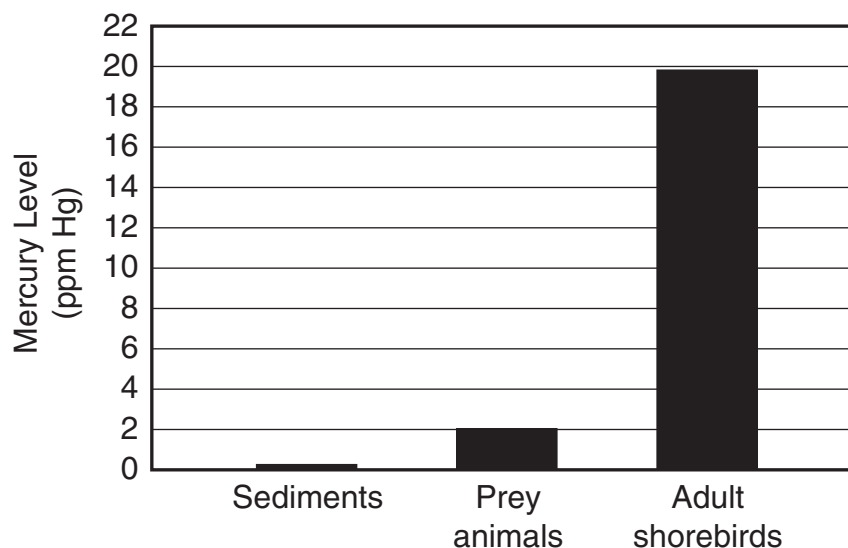
- 48** The guppy is a species of small freshwater fish. Scientists observed that the average size of guppies in a pond decreased over a few years after a guppy predator was introduced into the pond. Which of the following best explains the change in guppy size?

F Speciation
G Convergent evolution
H Inbreeding
J Natural selection

Time (min)	Mass of Alcohol and Beaker (g)
0	73.97
5	73.46
10	72.94
20	71.91
30	70.88
40	69.85

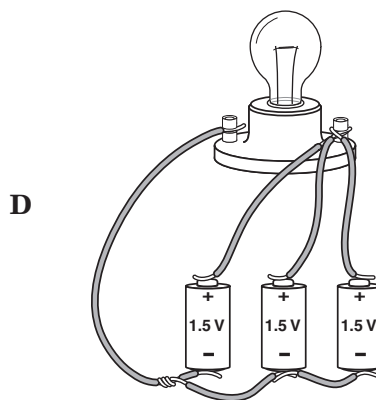
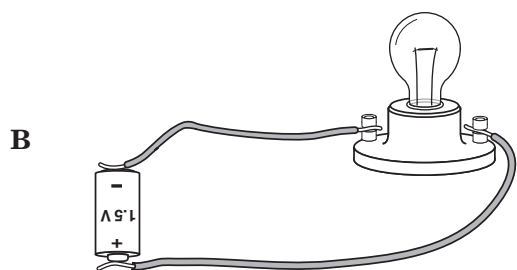
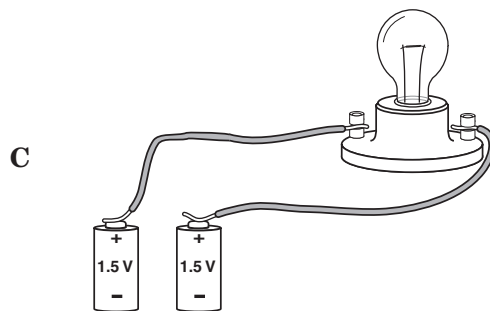
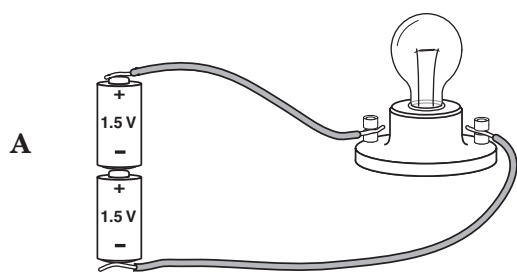
Mass of beaker = 59.02 g

- 49** These data show how the mass of an undisturbed beaker of alcohol varied during a class period. Which of the following is the best conclusion that can be made about the investigation?
- A** The beaker absorbed moisture from the air.
B A chemical change occurred in the beaker.
C The beaker experienced a change of state.
D Some material evaporated from the beaker.



- 50** The graph shows mercury levels found in sediments, prey animals, and adult shorebirds in a bay along the Gulf Coast. Which inference can best be drawn from these data?
- F** Mercury levels are elevated by the presence of shorebirds.
 - G** Mercury concentrations are highest in shorebirds.
 - H** Mercury is produced by sediments.
 - J** Mercury assures the survival of prey animals.

- 51 The bulb will light when a current supplied by at least one 1.5 V battery is available. Which circuit will fail to light the bulb?



Characteristics of a Newly Discovered Organism

- Absorbs blue light
- Emits infrared radiation
- Contains RNA in nucleus
- Appears as a red organism in full daylight
- Can obtain nutrition through photosynthesis

52 Knowledge of which of these is most important in classifying this new organism into a kingdom?

- F** The color of light absorbed by the organism
- G** The type of radiation emitted
- H** The use of photosynthesis
- J** The color of the organism

Clear Your Home of Asthma Triggers

Secondhand Smoke

Asthma can be triggered by the smoke from a burning cigarette, pipe, or cigar or by the smoke breathed out by a smoker.

- Choose not to smoke in your home or car and do not allow others to do so either.

Pets

Your pet's saliva, skin flakes, and urine can be asthma triggers.

- Consider keeping pets outdoors or even finding a new home for your pets, if necessary.
- Keep pets out of bedrooms at all times and keep bedroom doors closed.
- Keep pets away from fabric-covered furniture, carpets, and stuffed toys.



Not all the asthma triggers addressed in this brochure affect every person with asthma. Not all asthma triggers are listed here.

See your doctor or health-care provider for more information.

53 Which of these is supported by the information above?

- A** Pets should be kept away from public parks.
- B** Smokers should get frequent medical checkups.
- C** Pet immunizations should be kept up to date.
- D** Smoking in enclosed places should be discouraged.

Protein and Fiber Content of Different Flours

Type of Flour	Protein Content (grams per serving)	Dietary Fiber Content (grams per serving)
Whole wheat	4	4
White wheat	3	<1
Oat	4	3
Rice	3	1

- 54** Protein and dietary fiber are beneficial to health. According to the information in the table, which flour is the most nutritious?

F Whole wheat
G White wheat
H Oat
J Rice

California Sea Lions

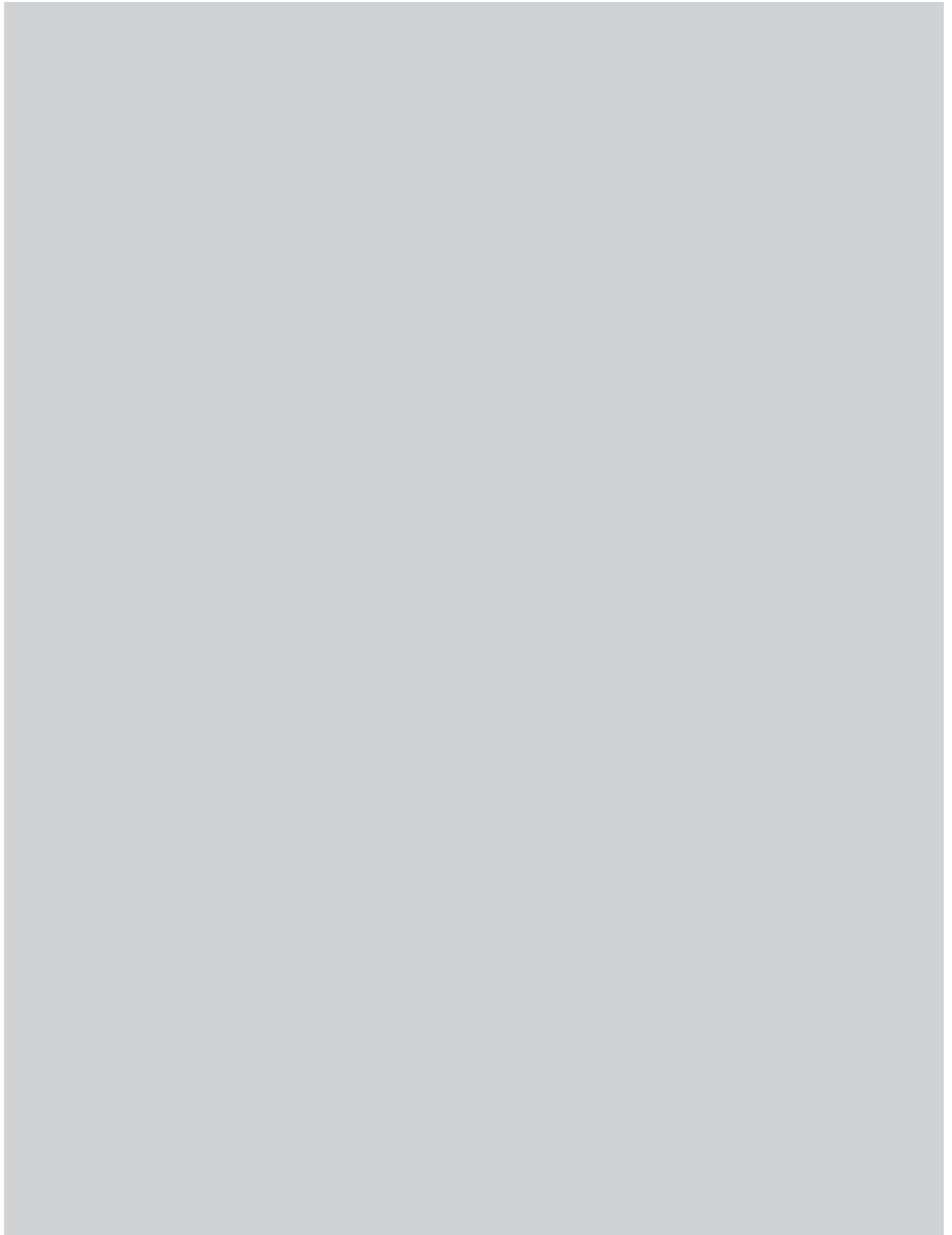
- Mammals
- Hold breath while diving
- Can dive as deep as 250 m
- Hunt on land and at sea
- Preyed on by orcas and great white sharks
- Establish large communities
- Males compete for females
- Males can reach a mass of 300 kg
- Females can reach a mass of 150 kg

55 Male sea lions can be twice the size of female sea lions. Which best explains the difference in size between male and female sea lions?

- A** Orcas and sharks prey on sea lions.
- B** Male and female sea lions hunt on land and at sea.
- C** Sea lions hold their breath while diving.
- D** Males compete with one another for females.

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS
ON THE ANSWER DOCUMENT.





SOCIAL STUDIES

DIRECTIONS

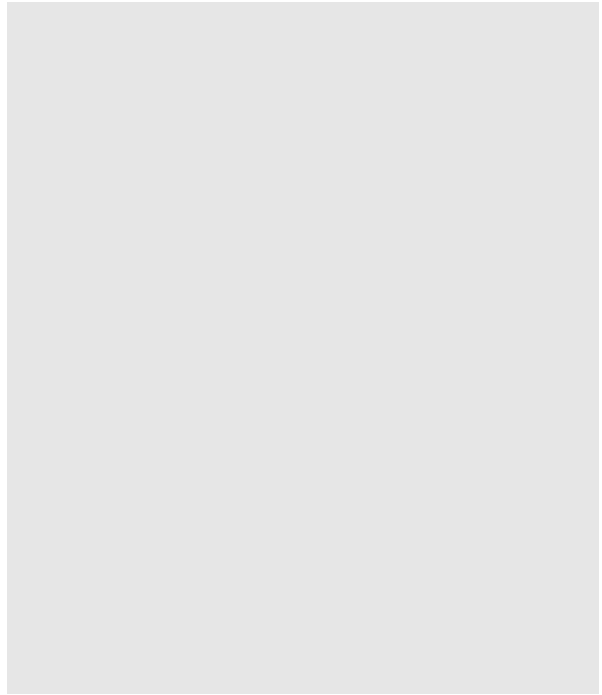
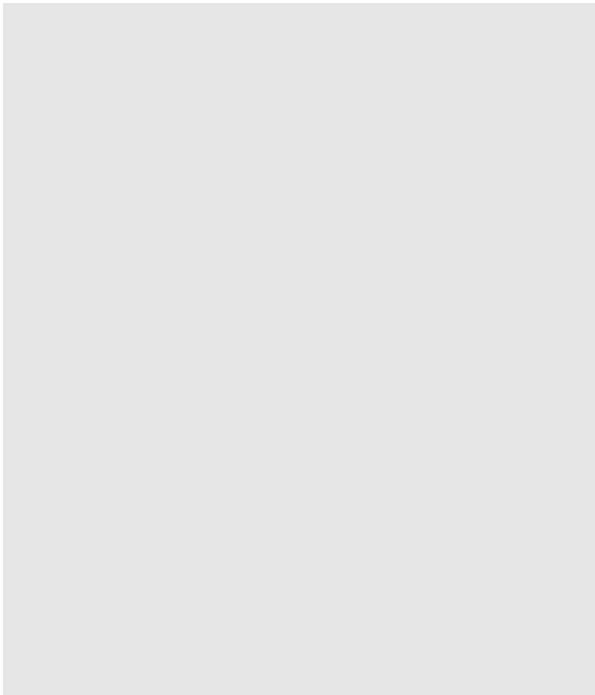
Read each question and choose the best answer. Then fill in the correct answer on your answer document.

SAMPLE A

Who served as president of the United States during the Civil War?

- A** Thomas Jefferson
- B** Andrew Jackson
- C** James K. Polk
- D** Abraham Lincoln





Use the table and your knowledge of social studies to answer the following question.

Economic Statistics for North and South Korea

Nation	GDP	Population	Labor Force
North Korea	\$11 billion	22,409,000	11,510,000
South Korea	\$427.2 billion	47,142,000	24,288,000

Source: U.N. Statistical Division/FAOSTAT 2001

- 2 Which conclusion can correctly be drawn from this information?
- F** North Korean workers are more productive than South Korean workers.
 - G** South Korea has a stronger economy than North Korea.
 - H** North Korea has a higher standard of living than South Korea.
 - J** South Korea is geographically smaller than North Korea.

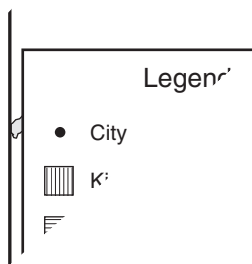
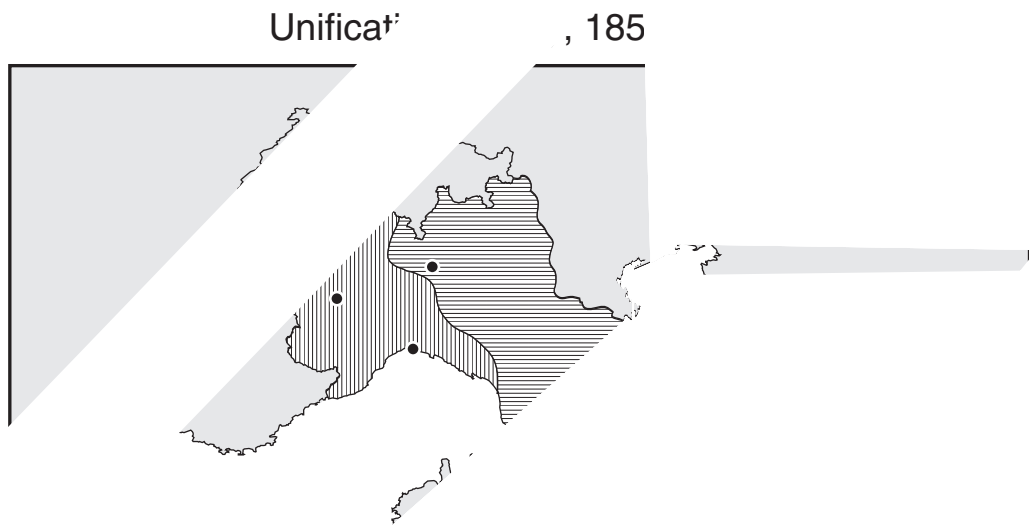
Use the table and your knowledge of social studies to answer the following question.

U.S. Demographics, 1890

Type and Size of Residence	Native-Born	Foreign-Born	Total
Cities of 100,000 or more	6,613,312	3,084,648	9,697,960
Cities of 2,500 to 99,999	10,266,920	2,594,487	12,861,407
Towns of less than 2,500	36,492,471	3,570,412	40,062,883
Total	53,372,703	9,249,547	62,622,250

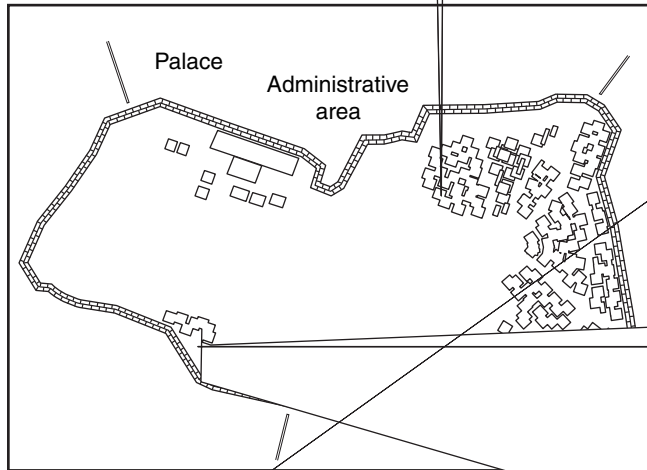
Source: U.S. Bureau of the Census

- 3 According to the table, in 1890 there were more —
- A people who were foreign-born than native-born
 - B native-born people than foreign-born people living in cities with a population of 2,500 to 99,999
 - C foreign-born people than native-born people living in towns with a population of less than 2,500
 - D foreign-born people than native-born people living in cities

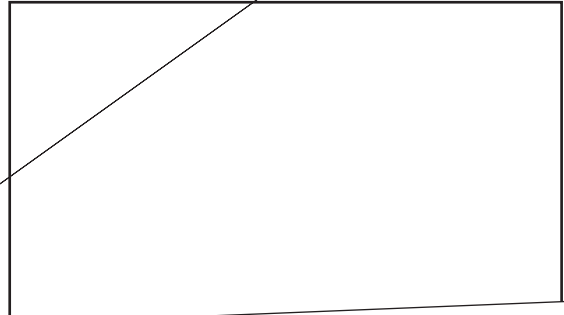


- 5 During the Middle Ages, the most direct effect of the printing press in Europe was the —
- A loss of power among peasants
 - B increase of royal authority
 - C rapid spread of new ideas
 - D limited use of books in universities

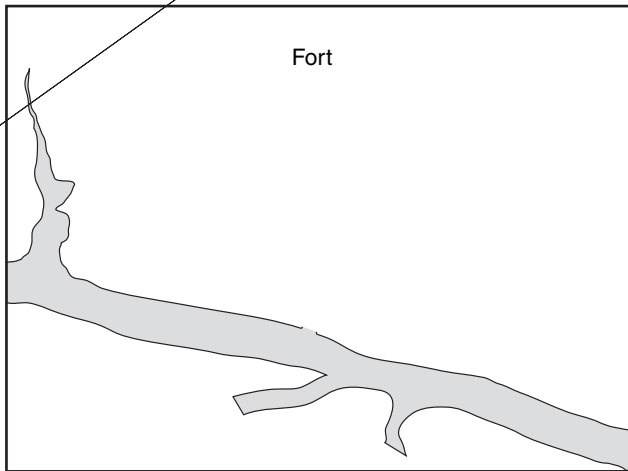
Jerusalem, circa A.D. 66



Changan, circa A.D. 600



Londinium, circa A.D. 200



Use the excerpt and your knowledge of social studies to answer the following question.

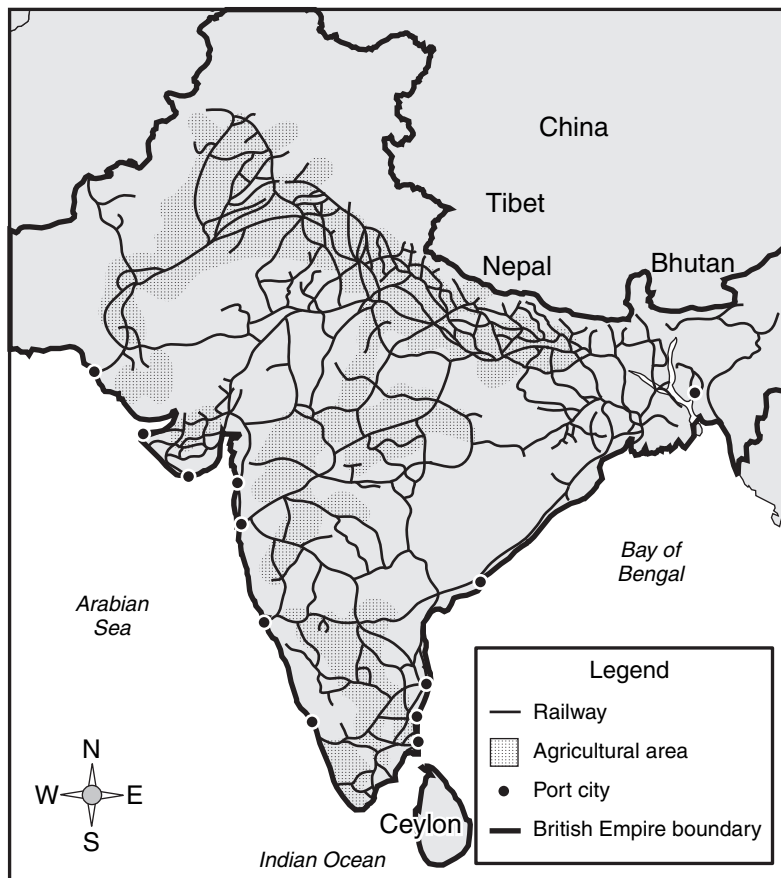
It is a national blessing that the conscription has been imposed. . . . It should now be settled, once for all, whether this government is or is not strong enough to compel military service in its defense. More than any other one thing, this will determine our durability as a republic and our formidableness as a nation.

— *“The Conscription a Great National Benefit,”*
New York Times, *July 13, 1863*

- 7 The author of this editorial believed that the Union’s draft policy during the Civil War was —
- A essential for defeating the Confederacy
 - B an unnecessary use of manpower
 - C unfair to men serving in the Union army
 - D needed to increase the size of the legislature

Use the map and your knowledge of social studies to answer the following question.

Railways and Agriculture in India, 1925



8 Based on the map above, it can be concluded that India's railway system —

- F caused the economic decline of port cities in the west
- G resulted in countrywide efforts to produce a single crop
- H caused many commercial farmers to relocate to the east
- J made the transportation of produce to port cities easier

Use the time line and your knowledge of social studies to answer the following question.

Time Line of Ancient Rome

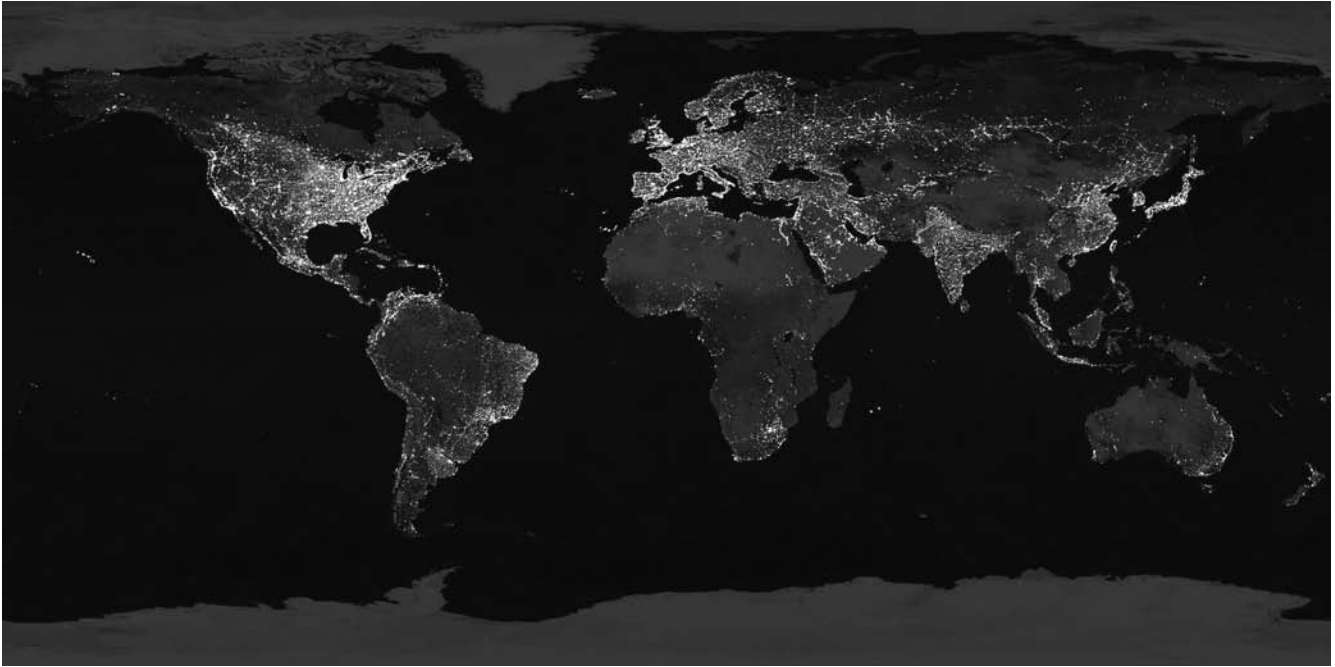
A.D. 33–100

<p>A.D. 33 — Rome has approximately 170 public and private baths.</p>	
<p>A.D. 80 — According to Roman law, water must be conserved for street and sewer cleaning.</p>	<p>A.D. 77 Roman author describes the use of animal bladders to protect mine workers from zinc exposure.</p>
<p>A.D. 100 — Roman architect describes aqueduct construction and sanitation planning and tells of lead poisoning among workers. Roman homes are connected directly to the sewer system.</p>	<p>A.D. 97 Water system in Rome flows through nine aqueducts.</p>

- 9 The events listed in the time line show that ancient Romans strove to —
- A make all types of forced labor illegal
 - B use the city only for industrial purposes
 - C maintain a high standard of public health
 - D limit the making of crafts inside the city

Use the photograph and your knowledge of social studies to answer the following question.

Satellite Image: Lights at Night



Source: NASA

10 This photograph best demonstrates which worldwide distribution pattern?

- F** Most people live in the Southern Hemisphere.
- G** The United States has a larger population than China.
- H** Most industrial nations are located in the Northern Hemisphere.
- J** Australia has more urban centers than Japan.

Use the excerpt and your knowledge of social studies to answer the following question.

Excerpt from the
Declaration of Independence

He has affected to render the military independent of and superior to the civil power.

- 11 Which of the following provisions in the U.S. Constitution addresses the colonial grievance above?
- A The vice president may be impeached.
 - B The president is the commander in chief.
 - C U.S. Supreme Court justices serve for life.
 - D Congress may establish tax laws.

Use the photograph and your knowledge of social studies to answer the following question.

Louis Pasteur Working in a Laboratory



© Hulton-Deutsch Collection/CORBIS

12 The work of Louis Pasteur, shown above, helped improve global —

- F** communication
- G** peace
- H** health
- J** transportation

Use the information in the box and your knowledge of social studies to answer the following question.

- Potato crops in Ireland are devastated by black rot fungus.
- Famine and disease spread across Ireland.
- Northern European culture develops in the United States.
- Industrial jobs become available in the northeastern United States.
- Cheap overseas transportation to U.S. ports becomes available.

- 13 All the factors listed above contributed to the mid-19th-century wave of —
- A Chinese laborers immigrating to the United States
 - B Irish immigration to the United States
 - C increased slave revolts in the South
 - D abolition movements in Ireland

- 14 John Locke's philosophy of natural rights asserts that all people have certain basic rights from birth. In the Declaration of Independence, these rights are referred to as —

- F political rights
- G unalienable rights
- H states' rights
- J women's rights

Use the excerpts and your knowledge of social studies to answer the following question.

Excerpts from the Constitution of the Iroquois Confederacy

Excerpt 1

[It is] against the Great Binding Law to pass measures in the Confederate Council after the Mohawk Lords have protested against them.

Excerpt 2

If . . . a Confederate Lord . . . disobeys the rules of this Great Law, the men or women of the Confederacy . . . shall come to the Council and upbraid the erring Lord through his War Chief.

Excerpt 3

If a Confederate Lord desires to resign his title he shall notify the Lords of the Nation of which he is a member of his intention. If his coactive Lords refuse to accept his resignation he may not resign his title.

Excerpt 4

[D]elegates from all the council fires may be appointed to unite in a general council for discussing the interests of the people. The people shall have the right to make appointments and to delegate their power to others of their number.

- 15 Which of the above excerpts is most similar to the idea of representative government as reflected in the U.S. Constitution?
- A Excerpt 1
 - B Excerpt 2
 - C Excerpt 3
 - D Excerpt 4

16 Which of the following contributed the most to the spread of popular culture in Europe and North America during the 20th century?

- F** Harsh conditions for workers
- G** Severe outbreaks of disease
- H** The survival of cottage industries
- J** Advances in communications

Use the information in the box and your knowledge of social studies to answer the following question.

- Reflected the idea of limited government
- Reflected the idea that the governed have rights
- Expressed the idea of government based on the rule of law
- Resulted from a struggle between the king and his nobles

17 Which of the following is best described by the characteristics listed above?

- A** Magna Carta
- B** *The Federalist Papers*
- C** Fundamental Orders of Connecticut
- D** Mayflower Compact

- 18** Following the battles of Lexington and Concord in 1775, the Second Continental Congress created the Continental army. The commander in charge of uniting American militias under this new army was —

F Baron von Steuben
G Benjamin Franklin
H Thomas Jefferson
J George Washington

Use the information in the box and your knowledge of social studies to answer the following question.

Cu Chi Tunnel Complex

- Located in the Iron Triangle, the Cu Chi tunnels were an important base area for the Vietcong during the Vietnam Conflict.
- More than 50 square miles of tunnels in this area of Vietnam allowed the Vietcong to move about undetected.
- The tunnel complex included space for barracks, first-aid stations, kitchens, sleeping quarters, and storage for weapons.
- The tunnel complex also included booby traps meant for U.S. soldiers.

- 19** Based on the information above, what was the primary purpose of the Cu Chi tunnel complex?
- A** To provide a military advantage to the Vietcong
- B** To protect villagers from gas attacks by the Vietcong
- C** To protect the harvest from destruction by U.S. troops
- D** To provide an escape route for U.S. soldiers

Use the time line and your knowledge of social studies to answer the following question.

Time Line of Alexander the Great

336 B.C.	332 B.C.	330 B.C.	326 B.C.
Alexander became king of Macedonia.	Alexander entered Egypt.	Alexander conquered Persia and Babylon.	Alexander's troops reached the Indus River Valley.

20 As a result of Alexander's conquests and military campaigns, Greek culture spread from —

- F** Asia to Africa
- G** Europe to Africa and Asia
- H** North Africa to Rome
- J** Europe to North and South America

21 The firing on Fort Sumter on April 12, 1861, was the first armed conflict of the —

- A** Revolutionary War
- B** Civil War
- C** Seven Years' War
- D** Mexican War

Use the information in the box and your knowledge of social studies to answer the following question.

Doctrines Presented in the Virginia and Kentucky Resolutions of 1798

- States have fundamental rights that the federal government cannot abridge.
- The U.S. Constitution exists as a compact between the federal and state governments.
- States can nullify federal laws that they judge to be unconstitutional.

22 The doctrines described in the Virginia and Kentucky Resolutions outlined the conflict over the —

- F** extent of the powers of the national government
- G** rise of the abolitionist movement
- H** use of the power of judicial review
- J** amendment of the Articles of Confederation

23 In 1930 Mohandas Gandhi publicly opposed the British monopoly on the production and sale of salt in India. He led an illegal march to gather salt from the Arabian Sea. What effect did Gandhi's actions have on Indians living under British authority?

- A** Indians started using nonviolent methods to defy British law.
- B** Indians began promoting the caste system in other countries.
- C** Indians held large rallies in support of British rule.
- D** Indians continued to boycott the use of homespun textiles.

Use the cartoon and your knowledge of social studies to answer the following question.



Source: *Nashville Tennessean*

- 24 The point of view expressed in this political cartoon is that U.S. foreign policy under the Monroe Doctrine —
- F caused fighting in areas beyond the Western Hemisphere
 - G encouraged Europeans to travel to the Northern Hemisphere
 - H protected the Western Hemisphere from hostilities overseas
 - J secured European possessions in the Northern Hemisphere

- 25** One factor that enabled the growth of independent colonial government in British North America was the —
- A** lack of social and economic provisions in the charters
 - B** creation of wealth through the development of industry
 - C** difficulty of exercising governmental control from a distance
 - D** extensive cooperation between native peoples and settlers

Use the information in the box and your knowledge of social studies to answer the following question.

How Some Families Earn a Living

Family A — The entire family works for minimum wage on a pineapple plantation.

Family B — The family produces only enough food from its garden to live on.

Family C — The entire family weaves straw mats and sells them in a local market.

Family D — The family grows wheat commercially on 6,000 acres of land.

- 26** Which of the families described above is engaged in subsistence agriculture?

F Family A
G Family B
H Family C
J Family D

Use the excerpt and your knowledge of social studies to answer the following question.

Excerpt of Retired Union General Benjamin F. Butler's Report to the 43rd Congress

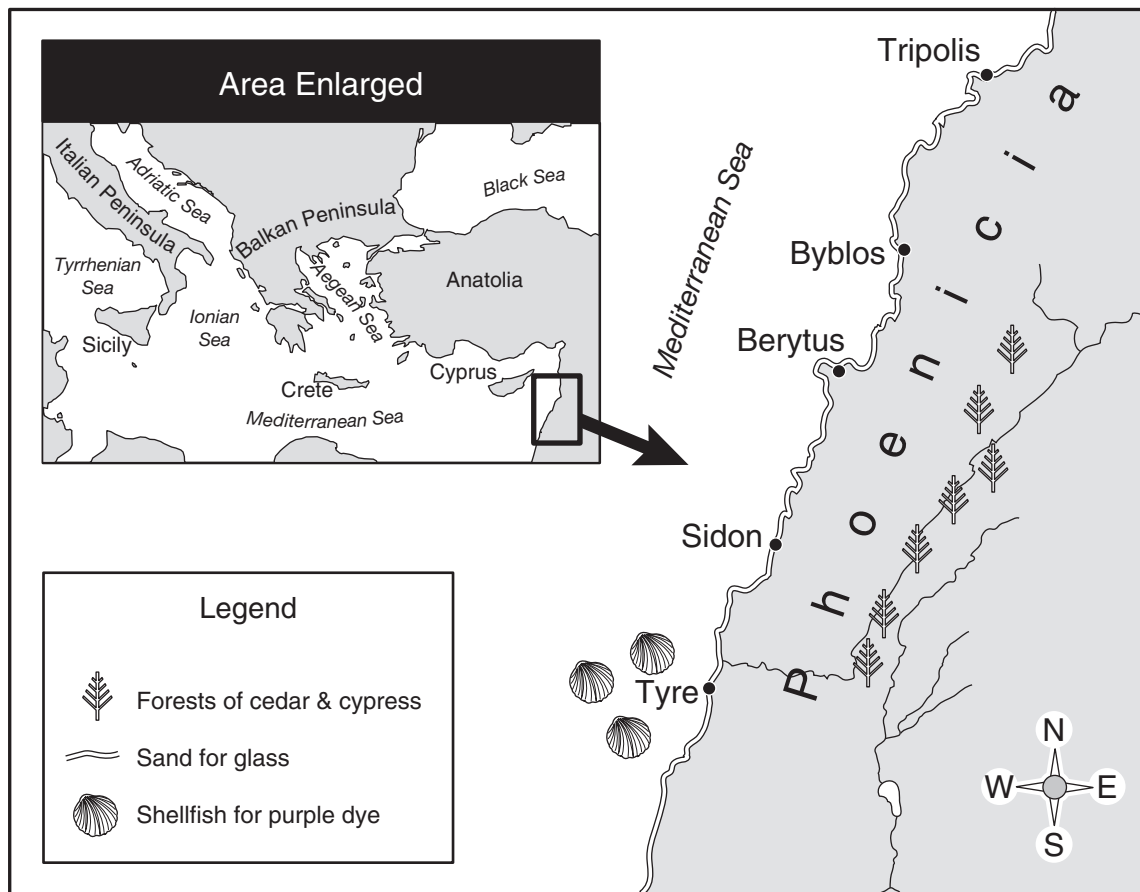
There, in a space not wider than the clerk's desk, and three hundred yards long, lay the dead bodies of 543 of my colored comrades, slain in the defense of their country. . . . Feeling I had wronged them in the past, and believing what was the future duty of my country to them I swore to . . . defend the rights of the men who have given their blood for me and my country this day and for their race forever.

- 27** In the excerpt above, General Butler recounts the sacrifices of African Americans killed in a battle during the —

A American Revolution
B War of 1812
C Mexican War
D Civil War

Use the map and your knowledge of social studies to answer the following question.

Phoenicia, Circa 1000 B.C.



28 As illustrated on the map above, Phoenicia became a great trading power in the Mediterranean partially because of its —

- F climate
- G latitude
- H resources
- J elevation

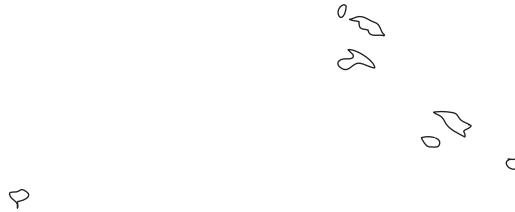
29 Under the constitutional principle of popular sovereignty, the authority of government is derived from —

- A** state legislatures
- B** the U.S. Supreme Court
- C** acts of the U.S. Congress
- D** the will of the people

30 One reason that the U.S. Congress was unable to resolve the nation's economic problems while operating under the Articles of Confederation was that it —

- F** had no power to levy taxes
- G** was unable to secure foreign aid
- H** had to fund a large national army
- J** was feuding with the judicial branch

Expansion of the Swedish Empire, 1560–1660



- 32** Which of the following sets of characteristics typically determined the right to vote in American colonies?
- F** Gender, race, and property ownership
 - G** National origin, religion, and social class
 - H** Social class, race, and property ownership
 - J** Gender, national origin, and social class

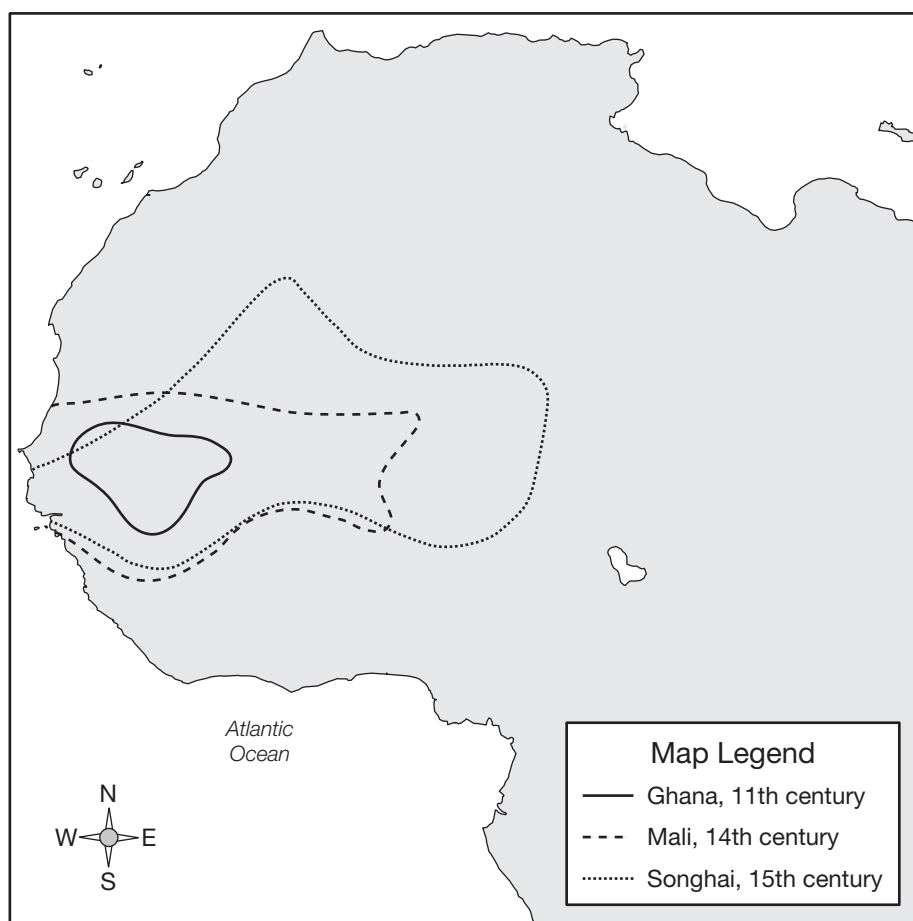
Use the information in the box and your knowledge of social studies to answer the following question.

- Population boom
- New inventions
- Investment funds
- Natural resources
- Business leadership

- 33** In the late 1700s, the factors listed above contributed to the development of —
- A** industrialization
 - B** a stock exchange
 - C** a common currency
 - D** agricultural cooperatives

- 34** The constitutional guarantees of free speech and a free press are important to a free society because they —
- F** support a one-party political system
 - G** protect majority rights
 - H** encourage an open exchange of ideas
 - J** require all citizens to vote

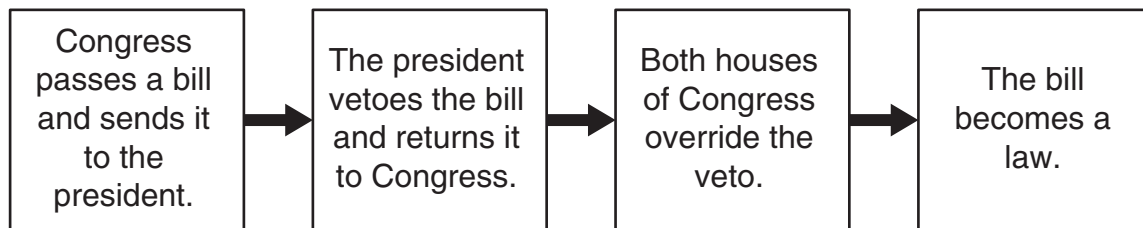
West African Kingdoms



35 The map best supports the conclusion that over time, each successive West African kingdom —

- A** covered more territory
- B** negotiated with other empires
- C** developed metalworking technology
- D** became less powerful

Use the diagram and your knowledge of social studies to answer the following question.



36 The sequence of events shown above best illustrates what constitutional principle?

- F** Checks and balances
- G** Individual rights
- H** Limited government
- J** Popular sovereignty

Use the illustration and your knowledge of social studies to answer the following question.



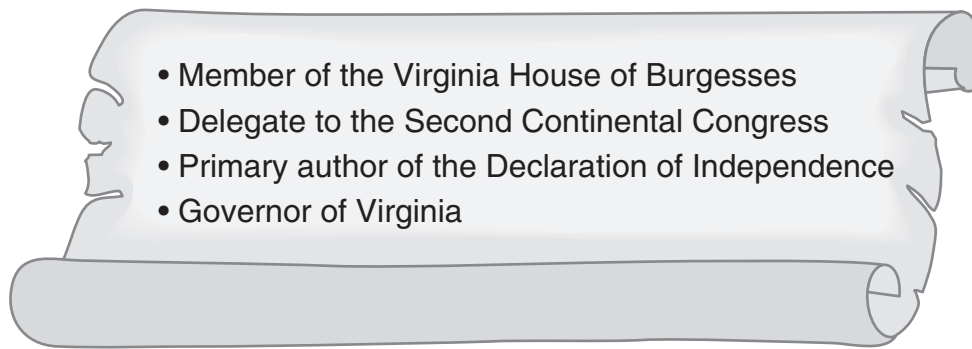
PROCESSION FIVE HUNDRED STRONG.

Source: Ohio State University

37 This illustration of an 1873 anti-saloon demonstration shows that women —

- A** had little interest in reform campaigns
- B** preferred to exercise free speech in private
- C** were active in reform movements
- D** rejected male support for female suffrage

Use the illustration and your knowledge of social studies to answer the following question.



38 Which Revolutionary Era leader is described above?

- F** Thomas Jefferson
- G** John Adams
- H** Benedict Arnold
- J** Alexander Hamilton

39 Which of the following is a common characteristic of the 13th, 14th, and 15th Amendments?

- A** They aim to protect the civil rights of African Americans.
- B** They guarantee a high standard of living for workers.
- C** They offer economic concessions to southern landowners.
- D** They strengthen the authority of state governments.

Use the map and your knowledge of social studies to answer the following question.

Kurdish Population Distribution in the Middle East



40 Which nation would lose the most territory if the Kurdish area, as shown on the map above, became an independent nation?

- F Iran
- G Iraq
- H Syria
- J Turkey

41 Which of the following contributed most to the decline of Native American civilizations in Latin America after the arrival of European explorers?

- A Food exchange
- B Overpopulation
- C Infectious disease
- D Climate change



43 Which type of government best safeguards the individual rights of its citizens?

- A** Modern autocracy
- B** Theocratic state
- C** Modern democracy
- D** Totalitarian state

Use the information in the box and your knowledge of social studies to answer the following question.

Miranda Warning

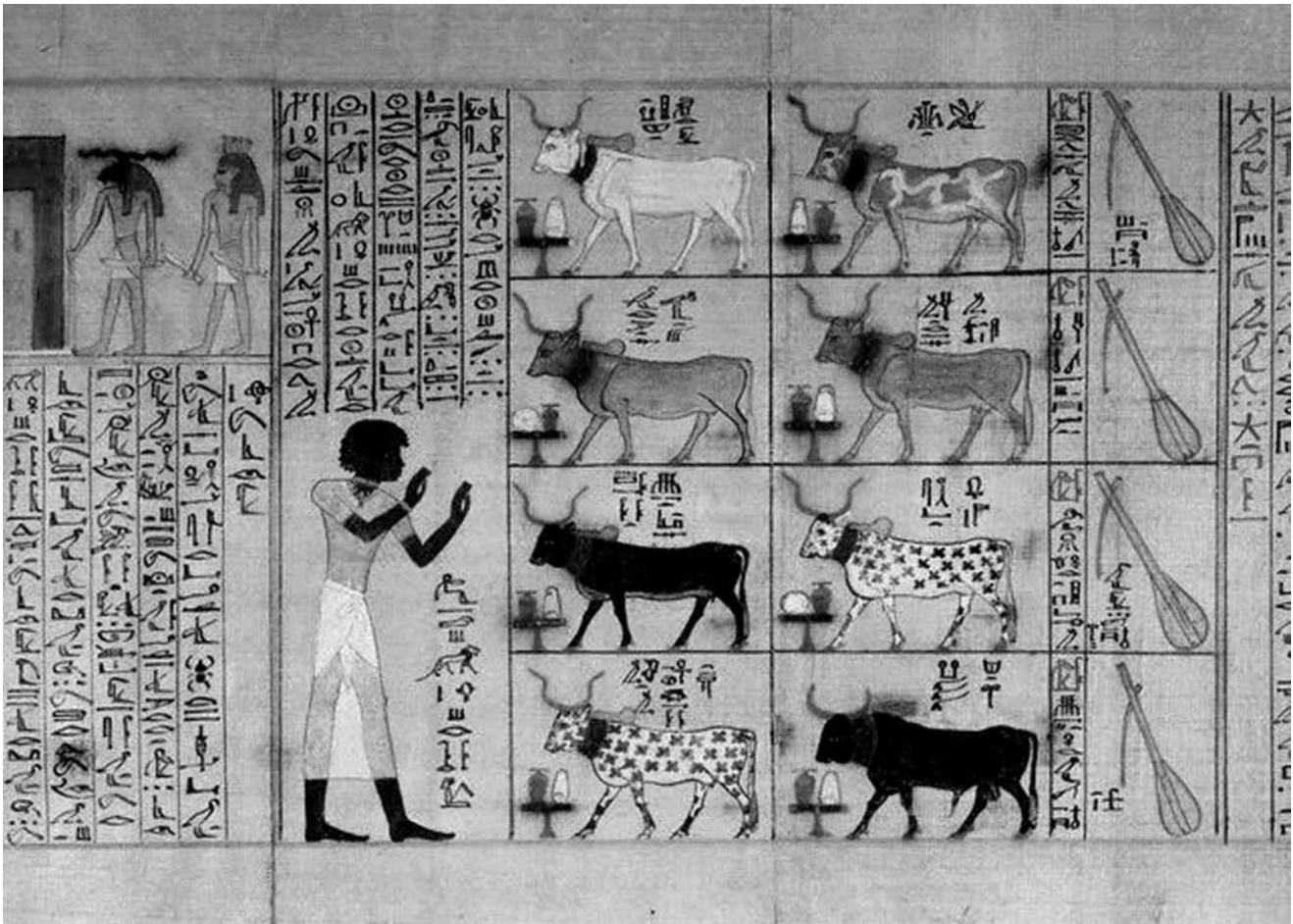
1. You have the right to remain silent.
2. Anything you say can and will be used against you in a court of law.
3. You have the right to talk to a lawyer and have him or her present with you while you are being questioned.
4. If you cannot afford to hire a lawyer, one will be appointed to represent you before any questioning, if you wish.

44 The list above is an example of how the U.S. Bill of Rights —

- F** ensures cooperation from suspects
- G** provides job security for attorneys
- H** protects the rights of the accused
- J** limits the rights of judges

Use the photograph and your knowledge of social studies to answer the following question.

Egyptian Art from the Book of the Dead



© Sandro Vannini/CORBIS

- 45 The photograph above best depicts which of the following advancements of civilization?
- A Written language
 - B Lunar calendar
 - C Complex government
 - D Use of metal

Use the table and your knowledge of social studies to answer the following question.

Female Literacy Rates and Birthrates
in Selected Latin American Nations, 2003 (estimated)

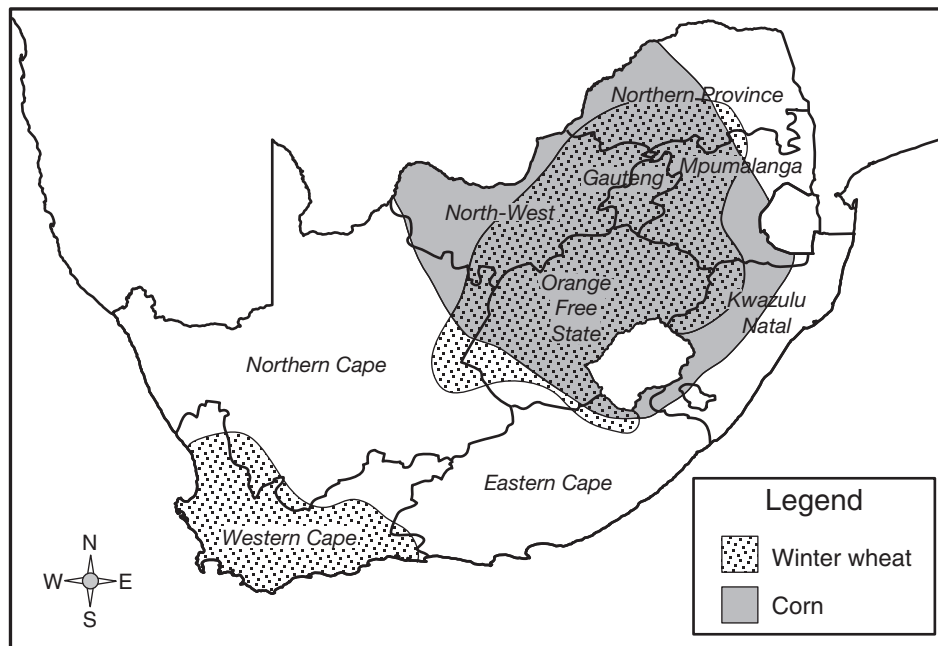
Nation	Female Literacy Rate	Birthrate (per 1,000 people)
Argentina	97.1%	17.47
Bolivia	81.6%	25.53
Brazil	86.6%	17.67
Costa Rica	96.1%	19.40
El Salvador	77.7%	27.90
Uruguay	98.4%	17.19

Source: CIA World Factbook

- 46 Which of the following conclusions is best supported by the information in the table?
- F South American nations have lower female literacy rates than those in Central America.
 - G Countries with high birthrates have no public education system.
 - H Birthrates are lower in South American nations than in North American nations.
 - J Nations with higher percentages of literate women tend to have lower birthrates.

Use the map and your knowledge of social studies to answer the following question.

Selected Crops of South Africa



- 47 According to the map, which South African province specializes in producing only one of these crops?
- A Mpumalanga
 - B Orange Free State
 - C Eastern Cape
 - D Western Cape

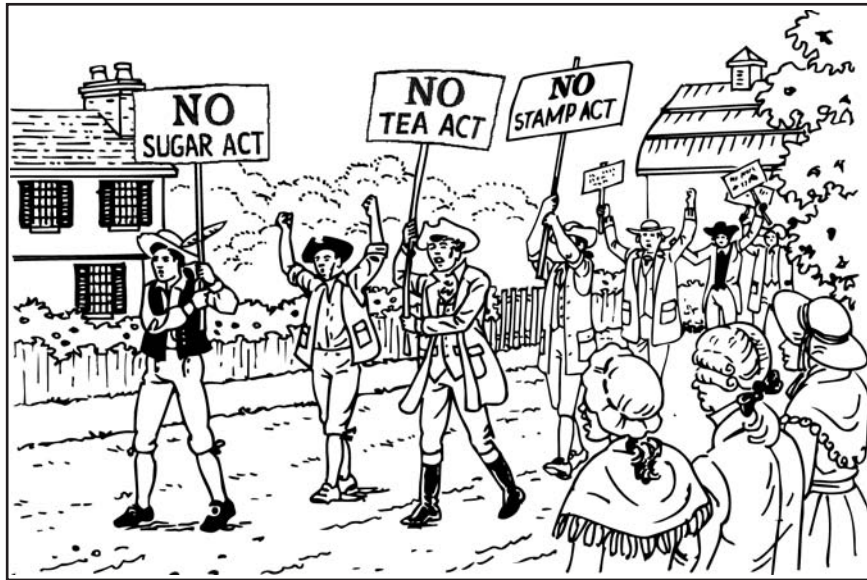
Use the diagram and your knowledge of social studies to answer the following question.



48 These three statements best reflect the results of —

- F** cultural diffusion
- G** technological innovation
- H** the socialist system
- J** the feudal system

Use the cartoon and your knowledge of social studies to answer the following question.

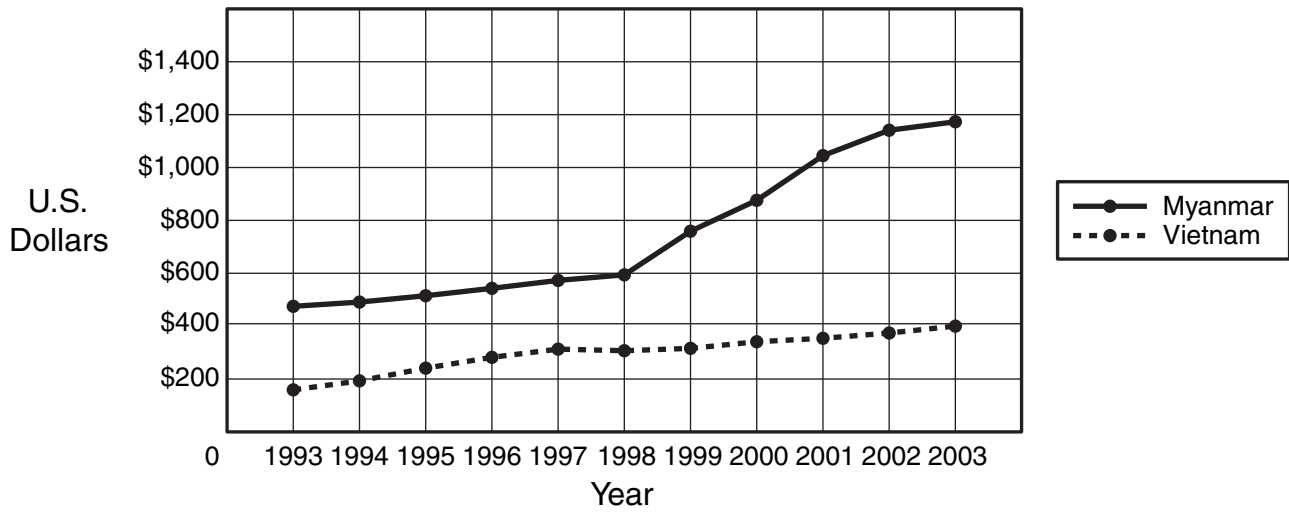


49 Which colonial issue is this cartoon most likely about?

- A Censorship of the press
- B Taxation without representation
- C Establishing a national religion
- D Quartering of troops

Use the graph and your knowledge of social studies to answer the following question.

Estimated National Income per Capita
of Myanmar and Vietnam, 1993–2003



Source: United Nations Statistical Division

50 According to the graph, the per capita income —

- F** for Myanmar and Vietnam rapidly declined
- G** in Myanmar increased the most between 1998 and 2002
- H** for both nations remained the same
- J** in Vietnam decreased the most between 1994 and 1997

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS
ON THE ANSWER DOCUMENT.



