STUDENT NAME _____

TAKS
Texas Assessment of Knowledge and Skills

EXIT LEVEL
ENGLISH LANGUAGE ARTS
MATHEMATICS
SOCIAL STUDIES
SCIENCE

Administered Spring 2004

READING
AND
WRITTEN
COMPOSITION

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

The Snob

by Morley Callaghan

1   IT WAS at the book counter in the department store that John Harcourt, the student, caught a glimpse of his father. At first he could not be sure in the crowd that pushed along the aisle, but there was something about the color of the back of the elderly man's neck, something about the faded felt hat, that he knew very well. Harcourt was standing with the girl he loved, buying a book for her. All afternoon he had been talking to her, eagerly, but with an anxious diffidence, as if there still remained in him an innocent wonder that she should be delighted to be with him. From underneath her wide-brimmed straw hat, her face, so fair and beautifully strong with its expression of cool independence, kept turning up to him and sometimes smiled at what he said. That was the way they always talked, never daring to show much full, strong feeling. Harcourt had just bought the book, and had reached into his pocket for the money with a free, ready gesture to make it appear that he was accustomed to buying books for young ladies, when the white-haired man in the faded felt hat, at the other end of the counter, turned half-toward him, and Harcourt knew he was standing only a few feet away from his father.

2   The young man's easy words trailed away and his voice became little more than a whisper, as if he were afraid that everyone in the store might recognize it. There was rising in him a dreadful uneasiness; something very precious that he wanted to hold seemed close to destruction. His father, standing at the end of the bargain counter, was planted squarely on his two feet, turning a book over thoughtfully in his hands. Then he took out his glasses from an old, worn leather case and adjusted them on the end of his nose, looking down over them at the book. His coat was thrown open, two buttons on his vest were undone, his hair was too long, and in his rather shabby clothes he looked very much like a workingman, a carpenter perhaps. Such a resentment rose in young Harcourt that he wanted to cry out bitterly, "Why does he dress as if he never owned a decent suit in his life? He doesn't care what the whole world thinks of him. He never did. I've told him a hundred times he ought to wear his good clothes when he goes out. Mother's told him the same thing. He just laughs. And now Grace may see him. Grace will meet him."

3   So young Harcourt stood still, with his head down, feeling that something very painful was impending. Once

he looked anxiously at Grace, who had turned to the bargain counter. Among those people drifting aimlessly by with hot red faces, getting in each other's way, using their elbows but keeping their faces detached and wooden, she looked tall and splendidly alone. She was so sure of herself, her relation to the people in the aisles, the clerks behind the counters, the books on the shelves, and everything around her. Still keeping his head down and moving close, he whispered uneasily, "Let's go and have tea somewhere, Grace."

4   "In a minute, dear," she said.

5   "Let's go now."

6   "In just a minute, dear," she repeated absently.

7   "There's not a breath of air in here. Let's go now."

8   "What makes you so impatient?"

9   "There's nothing but old books on that counter."

10   "There may be something here I've wanted all my life," she said, smiling at him brightly and not noticing the uneasiness in his face.

11   So Harcourt had to move slowly behind her, getting closer to his father all the time. He could feel the space that separated them narrowing. Once he looked up with a vague, sidelong glance. But his father, red-faced and happy, was still reading the book, only now there was a meditative expression on his face, as if something in the book had stirred him and he intended to stay there reading for some time.

12   Old Harcourt had lots of time to amuse himself, because he was on a pension after working hard all his life. He had sent John to the university and he was eager to have him distinguish himself. Every night when John came home, whether it was early or late, he used to go into his father and mother's bedroom and turn on the light and talk to them about the interesting things that had happened to him during the day. They listened and shared this new world with him. They both sat up in their night clothes and, while his mother asked all the questions, his father listened attentively with his head cocked on one side and a smile or a frown on his face. The memory of all this was in John now, and there was also a desperate longing and a pain within him growing harder to bear as he glanced fearfully at his father, but he thought stubbornly, "I can't introduce him. It'll be easier for everybody if he doesn't see us. I'm not ashamed. But it will be easier. It'll be more sensible. It'll only embarrass him to see Grace." By this time he knew he was ashamed, but he felt that his shame

GO ON

was justified, for Grace's father had the smooth, confident manner of a man who had lived all his life among people who were rich and sure of themselves. Often when he had been in Grace's home talking politely to her mother, John had kept on thinking of the plainness of his own home and of his parents' laughing, good-natured untidiness, and he resolved desperately that he must make Grace's people admire him.

13   He looked up cautiously, for they were about eight feet away from his father, but at that moment his father, too, looked up and John's glance shifted swiftly far over the aisle, over the counters, seeing nothing. As his father's blue, calm eyes stared steadily over the glasses, there was an instant when their glances might have met. Neither one could have been certain, yet John, as he turned away and began to talk hurriedly to Grace, knew surely that his father had seen him. He knew it by the steady calmness in his father's blue eyes. John's shame grew, and then humiliation sickened him as he waited and did nothing.

14   His father turned away, going down the aisle, walking erectly in his shabby clothes, his shoulders very straight, never once looking back. His father would walk slowly down the street, he knew, with that meditative expression deepening and becoming grave.

15   Young Harcourt stood beside Grace, brushing against her soft shoulder, and made faintly aware again of the delicate scent she used. There, so close beside him, she was holding within her everything he wanted to reach out for, only now he felt a sharp hostility that made him sullen and silent.

16   "You were right, John," she was drawling in her soft voice. "It does get unbearable in here on a hot day. Do let's go now. Have you ever noticed that department stores after a time can make you really hate people?" But she smiled when she spoke, so he might see that she really hated no one.

17   "You don't like people, do you?" he said sharply.

18   "People? What people? What do you mean?"

19   "I mean," he went on irritably, "you don't like the kind of people you bump into here, for example."

20   "Not especially. Who does? What are you talking about?"

21   "Anybody could see you don't," he said recklessly, full of a savage eagerness to hurt her. "I say you don't like simple, honest people, the kind of people you meet all over the city." He blurted the words out as if he wanted to shake her, but

he was longing to say, "You wouldn't like my family. Why couldn't I take you home to have dinner with them? You'd turn up your nose at them, because they've no pretensions. As soon as my father saw you, he knew you wouldn't want to meet him. I could tell by the way he turned."

22   His father was on his way home now, he knew, and that evening at dinner they would meet. His mother and sister would talk rapidly, but his father would say nothing to him, or to anyone. There would only be Harcourt's memory of the level look in the blue eyes, and the knowledge of his father's pain as he walked away.

23   Grace watched John's gloomy face as they walked through the store, and she knew he was nursing some private rage, and so her own resentment and exasperation kept growing, and she said crisply, "You're entitled to your moods on a hot afternoon, I suppose, but if I feel I don't like it here, then I don't like it. You wanted to go yourself. Who likes to spend very much time in a department store on a hot afternoon? I begin to hate every stupid person that bangs into me, everybody near me. What does that make me?"

24   "It makes you a snob."

25   "So I'm a snob now?" she asked angrily.

26   "Certainly you're a snob," he said. They were at the door and going out to the street. As they walked in the sunlight, in the crowd moving slowly down the street, he was groping for words to describe the secret thoughts he had always had about her. "I've always known how you'd feel about people I like who didn't fit into your private world," he said.

27   "You're a very stupid person," she said. Her face was flushed now, and it was hard for her to express her indignation, so she stared straight ahead as she walked along.

28   They had never talked in this way, and now they were both quickly eager to hurt each other. With a flow of words, she started to argue with him, then she checked herself and said calmly, "Listen, John, I imagine you're tired of my company. There's no sense in having tea together. I think I'd better leave you right here."

29   "That's fine," he said. "Good afternoon."

30   "Good-by."

31   "Good-by."

32   She started to go, she had gone two paces, but he reached out desperately and held her arm, and he was frightened, and pleading, "Please don't go, Grace."

33   All the anger and irritation had left him; there was just a desperate anxiety in his voice as he pleaded, "Please forgive me. I've no right to talk to you like that. I don't know why I'm so rude or what's the matter. I'm ridiculous. I'm very, very ridiculous. Please, you must forgive me. Don't leave me."

34   He had never talked to her so brokenly, and his sincerity, the depth of his feeling, began to stir her. While she listened, feeling all the yearning in him, they seemed to have been brought closer together, by opposing each other, than ever before, and she began to feel almost shy. "I don't know what's the matter. I suppose we're both irritable. It must be the weather," she said. "But I'm not angry, John."

35   He nodded his head miserably. He longed to tell her that he was sure she would have been charming to his father, but he had never felt so wretched in his life. He held her arm tight, as if he must hold it or what he wanted most in the world would slip away from him, yet he kept thinking, as he would ever think, of his father walking away quietly with his head never turning.

Common Threads

by Ana Veciana-Suarez

1   On a sweltering summer day, we head north from the southernmost tip of America in a caravan of cars loaded with all the accouterments needed for a family outing into the unknown. Somebody has brought a big thermos of *café con leche*, someone else several bakery boxes of guava pastries. In the cooler, cans of Coca-Cola and Materva grow cold. We are aiming for Parris Island, a spit of land in South Carolina where our country's few and proud are trained.

2   My nephew Juan Andres is graduating from Marine basic training. Seventeen and just out of a Catholic prep school, he'd never been away from home before. So for the past 13 weeks, as he has endured the toughest basic training dished out by any of the U.S. armed forces, the family in Miami—aunts, uncles, cousins and grandparents—has made sure Juan Andres is the star of every barracks mail call.

3   Now a whole platoon of us—21 by actual count—are driving in a caravan up the long spine of Florida, through the red clay of Georgia and into the Carolina marshes. Notoriety precedes us. No other recruit, his drill sergeant notes, has had as many relatives attend the ceremony. We hope Juan Andres is as proud of us as we are of him. I have to admit, though, this clamoring crowd of *tías* and *tíos* chattering in Spanish does have the potential for embarrassment from a teenage recruit's point of view.

4   We've been told to dress casually and to wear red, the color of his battalion. Days before we left, I scrambled to make sure all of us would display a bright proclamation of this hue. Inspired by renewed patriotic fervor, we also brought little American flags.

5   The morning of the ceremony dawns hot and humid. In the motel lobby we gather for breakfast and discuss the day's strategy. Can we clap during the ceremony? Should we cheer? Shout out his name? Boost the younger children on our shoulders so they can admire their brave cousin as he marches by?

6   Heaven knows we don't want to do the wrong thing. Already, we have drawn attention during our overnight stay in the quaint little city of Beaufort. It was impossible to ignore the hard popping sound of our Cuban Spanish against the smooth, sweet Southern drawl that surrounded it.

7   In the midst of our discussion, I look across the lobby and spot my father. He squints into the distance, looking lost. He is wearing—oh, my God! No!—black nylon socks and inexpensive black rubber sandals with white Bermuda shorts and a paisley jersey shirt buttoned snugly against his ample belly. His legs are whiter than a Canadian tourist's. Tacky, and not even a touch of red.

8   "Is he in his underwear?" my husband whispers as he follows my stare. I'm speechless. I nudge my sister, who elbows my other sister, a chain reaction through my generation's stronghold.

9   "He *can't* go out like that," gasps one of us.

10   We decide to mount an assault, but the ambush fails to persuade. He cannot understand why we think he needs to change.

11   "You're wearing dress socks with sandals!" I sputter. "And those shorts look like your boxers."

12   "But your mother picked out the clothes." He stares at us, perplexed. "They're brand-new. And they weren't cheap either."

13   I detect a whiff of aftershave, and something tightens hard across my chest. Suffering the embarrassment of parents is a verity of childhood, as inevitable as scraped knees and bent bicycles. It is doubly uncomfortable, however, when you are the child of immigrants, the prized possession of a well-meaning but clueless Mami and Papi who just don't get it, and maybe never will.

14   I see my father in his ridiculous outfit and cringe, for this and all the mortifications of the past: The chaperons of my dating years. The hand-packed school lunches that smelled funny. The out-of-date haircuts given at home. The frilly dresses when I wanted jeans instead.

15   I'm forced out of my wallow by the need to rush off to grab seats in the bleachers for the big event. I watch as the old man who is my father struggles to get into the front seat of the rented van. I think I can hear his joints creak. He winces when my nephew Mikey shuts his door, but manages to pull himself up and straighten his shoulders. He pats down his hair, fiddles with his collar.

16   This is the same man who, many years earlier, fled Communist Cuba in the dark of night on a 14-foot boat, a man who gave up a stellar business career to start anew in freedom. A man who, long past retirement, still works seven days a week in the family marine business. A man who has always managed to soldier on bravely, no matter how alien or difficult the circumstances.

17   At the ceremony, the viewing stands undulate in Marine red and yellow. Though we strain to search for my nephew as the platoons file in, we can't spot him in the perfectly starched and straight rows. All the soldier boys (and even the girls) look the same in their blue pants, khaki shirts and white caps—a dazzling display of uniformity. The band strikes up. My father bends forward to relieve the pain in his back, but even as he does, he holds his head high and smiles.

18   I know the precise measure of pride beating fervent and steady in his chest. It occurs to me that the distance between one old man in a ridiculous outfit that blares out its oddness and a young man in a uniform that blends in with blinding conformity is more than two generations. It is a long story of sacrifice and risk told countless times in our history, that of the immigrant and exile, the stranger in a strange land whose children and grandchildren become as American as frijoles. As American as Marines.

DO **CLOTHES**
really make
the**MAN**?

Join fashion designer
Tristan Marks
for a candid discussion of
What Your Clothing Choices Say About You!
Wednesday, March 2
7:00 P.M.

Pleasant Valley Mall Atrium

Three lucky audience members will be selected for wardrobe makeovers.*

* Makeovers sponsored by the retailers of Pleasant Valley Mall.

GO ON

1 Which words from paragraph 15 help the reader understand the meaning of the word *sullen*?

   A *faintly aware*

   B *delicate scent*

   C *sharp hostility*

   D *brushing against*

2 Paragraph 12 is mainly about —

   F the interest that John's parents have in his life at the university

   G John's resentment of his father for wearing shabby clothes

   H the differences John perceives between his family and Grace's family

   J John's wish to have Grace's parents accept and admire him

3 John first recognizes his father by his —

   A neck

   B coat

   C eyeglasses

   D hair

4 Paragraph 34 is mainly about —

   F John's fear that Grace won't forgive him

   G Grace's reaction to John's plea for forgiveness

   H John's apology to Grace for his behavior

   J Grace's feelings of shyness toward John

5 What do the father's clothes symbolize in this story?

   A The bond between John and his father

   B John's shame about his family

   C The father's wish to live in the past

   D Grace's rejection of John's parents

6 Which sentence provides a clue about John's internal conflict?

   F *"You don't like people, do you?" he said sharply.*

   G *"You're a very stupid person," she said.*

   H *He had never talked to her so brokenly, and his sincerity, the depth of his feeling, began to stir her.*

   J *He longed to tell her that he was sure she would have been charming to his father, but he had never felt so wretched in his life.*

GO ON

7 The description of the people near the bargain book counter in paragraph 3 creates a mood of —

A   irritation

B   relief

C   hopelessness

D   loneliness

8 The story's point of view helps the reader understand —

F   why John and Grace are attracted to each other

G   why John doesn't want Grace to meet his father

H   how the life of John's father differs from that of Grace's father

J   why children sometimes rebel against their parents

9 In paragraph 7, when John says, "There's not a breath of air in here," it emphasizes his —

A   sensitivity to crowds

B   desperation to leave

C   tendency to exaggerate

D   desire to control Grace

10 In paragraphs 16 through 20, the presence of a crowd around John and Grace adds to their conflict by —

F   allowing John the opportunity to hide from his father

G   making it easier for Grace to leave John

H   providing witnesses to their disagreement

J   giving John an excuse to accuse Grace of snobbery

11 The author includes background information about John's parents in the first part of paragraph 12 in order to —

A   show that John values his parents' support

B   reveal that John and his parents don't communicate well with one another

C   highlight their lack of education

D   explain why John and his father don't get along

12 From the description of John's father, the reader can tell that he is —

F   more ambitious than his son

G   gruff and demanding

H   eager to make a good impression

J   quiet and thoughtful

GO ON

13 In paragraph 13, the word *verity* means —

   A truth

   B mystery

   C resentment

   D delight

14 The author's father is a —

   F retired businessman

   G drill sergeant

   H U.S. Marine

   J Cuban immigrant

15 Which of these is the best summary of the article?

   A Ana Veciana-Suarez is embarrassed to be on a journey with her numerous Cuban relatives, who persist in speaking loudly in Spanish. She fears that her family's behavior at a formal ceremony will further embarrass her. The woman's father fulfills her prediction by dressing for a public ceremony in a ridiculous outfit.

   B Ana Veciana-Suarez has traveled with her large family to a ceremony for a relative in another state. She laments that the older family members draw attention to themselves by speaking Spanish loudly. However, her embarrassment is overshadowed by pride in her nephew, who has successfully graduated from marine basic training.

   C Ana Veciana-Suarez looks back on her childhood in an immigrant home. She regrets that her parents were "clueless," though well-meaning. When she was a teenager, her dates were chaperoned, and her haircuts and clothing were hopelessly out-of-date. Her father's outfit at a family gathering emphasizes his lack of taste. Veciana-Suarez begins to feel like a "stranger in a strange land."

   D Ana Veciana-Suarez and her large family attend the graduation of a nephew from marine basic training. On the morning of the ceremony, Veciana-Suarez's father embarrasses her by wearing a ridiculous outfit. Her embarrassment dissolves into pride when she recalls her father's courage in fleeing his native country and building a new life in the United States.

GO ON

16 The author notes that her nephew may —

    F feel embarrassed by his relatives

    G not be present at the ceremony

    H be sent overseas as a marine

    J return home to the family business

17 In paragraph 15, what does the description of the father's behavior in the car suggest about his attitude toward growing old?

    A Old age can be faced with dignity and courage.

    B Children should take care of their parents.

    C People should work as long as they are able.

    D The aches and pains of old age are overwhelming.

18 Why does the author's chest tighten when she smells her father's aftershave?

    F She is afraid that she might cry in front of her family.

    G The scent reminds her of the times when she was ashamed of her parents.

    H The scent is overpowering and threatens to cause her further distress.

    J She is feeling strong admiration for her father.

19 A turning point in this article occurs when —

    A the family arrives in South Carolina

    B the nephew graduates from basic training

    C the author watches her father getting into the van

    D the members of the family discuss their plans for the day

20 Which quotation from the article best summarizes the author's overall view of her father?

    F *He cannot understand why we think he needs to change.*

    G *A man who has always managed to soldier on bravely, no matter how alien or difficult the circumstances.*

    H *I see my father in his ridiculous outfit and cringe. . . .*

    J *A man who, long past retirement, still works seven days a week in the family marine business.*

21 Which of these best describes the tone of paragraphs 16 through 18?

    A Impatient

    B Admiring

    C Somber

    D Humorous

22 Why does the author use the words *platoon* in paragraph 3 and *mount an assault* and *ambush* in paragraph 10?

    F She is emphasizing the military theme.

    G She wants to show her patriotic feelings.

    H She is showing her strong resolve.

    J She was raised in a family of marines.

23 The next time the author sees her father dressed in an outfit that she finds ridiculous, she is more likely to —

    A make jokes with her husband about her father's clothes

    B give her father money to buy more-stylish clothes

    C see beyond his outward appearance

    D criticize his appearance

24 Which issue seems more important to John in "The Snob" than to the author of "Common Threads"?

   F Cultural heritage

   G Education

   H Income

   J Social class

25 The fathers in "The Snob" and "Common Threads" represent the value of —

   A hard work

   B ambition

   C academic achievement

   D thrift

26 One underlying message of the flyer is that —

   F your outer appearance reveals your character

   G you should change clothing styles frequently

   H classic styles in clothing are the wisest choice

   J people should not judge others by their clothing

27 One assumption in the text of the flyer is that most people —

   A spend their free time at the mall

   B can't afford stylish clothes

   C are content with their appearance

   D desire a makeover

28 What information is missing from the flyer?

   F The location of the event

   G The exact time of the event

   H The topic of discussion for the event

   J The method of selecting the makeover recipients

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

29 In "The Snob," which character do you think is the snob? Explain your answer and support it with evidence from the selection.

30 In "Common Threads," how does the author's attitude toward her father change from the beginning to the end of the selection? Support your answer with evidence from the selection.

31 Do John in "The Snob" and the author of "Common Threads" share a similar concern? Explain your answer and support it with evidence from **both** selections.

BE SURE YOU HAVE WRITTEN YOUR ANSWERS
ON THE ANSWER DOCUMENT.

GO ON

WRITTEN COMPOSITION

Write an essay explaining the importance of accepting others as they are.

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.

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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

STOP

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.

STOP

Hannah had to write a paper about an influential American. She decided to write an essay about a famous movie director and producer. She wants you to read her essay and think about the corrections and improvements she should make. When you finish reading, answer the questions that follow.

A Special Gift

(1) It all began with a Father's Day gift. (2) The gift was an eight-millimeter movie camera, which was supposed to be used to record camping trips and other family events. (3) However, the father who received the camera didn't hardly enjoy using it, so he gave it to his 12-year-old son. (4) In no time at all, young Steven Spielberg having developed a passion for filmmaking.

(5) The boy's first films documented family camping trips. (6) Later he began to experiment with special effects creating some short films about trains crashing into each other. (7) At the age of 13, Spielberg made a 40-minute war movie that featured a battle between Nazi and British soldiers. (8) He used classmates as actors and produced his own special effects. (9) Titled *Escape to Nowhere*, the film won first prize at a teen film festival.

(10) Three years later Spielberg wrote and directed a 140-minute movie he called *Firelight*. (11) Spielberg's father rented out a local theater and ran the movie for one night. (12) Spielberg's sisters and mother sold popcorn and sodas, and the talented teenager made his first small profit of $100. (13) In this film, scientists investigate some mysterious lights in the sky.

(14) In 1969, when Spielberg was just 23 years old, he and his friend Dennis Hoffman made a 24-minute film titled *Amblin'*. (15) The film earned several

prizes and was released in some theaters. (16) Impressing executives at Universal Television Studios, they offered Spielberg a job. (17) At 24 he was invited to direct the TV movie *Duel*. (18) The finished product was highly praised, and the young filmmaker was on his way to famous.

(19) Over the next 30 years, Spielberg made scores of movies, they included *Jaws*, the first movie in history to gross more than $100 million, and *Close Encounters of the Third Kind*, for which he earned his first Oscar nomination. (20) Other huge hits included *Raiders of the Lost Ark*, *E.T.*, and *Schindler's List*. (21) These films, as well as a ton of others, have entertained people all over the world. (22) Steven Spielberg is one of the most respected directors in the industry. (23) Moviegoers should be glad that his mother decided to give his father an eight-millimeter camera on that Father's Day so many years ago.

32 What change should be made in sentence 3?

F Delete the comma after *However*

G Change *received* to **recieved**

H Delete *hardly*

J Change *he* to **they**

33 What change, if any, should be made in sentence 4?

A Change *no* to **know**

B Change *having developed* to **had developed**

C Insert **it was** after *passion*

D Make no change

34 What change should be made in sentence 6?

F Change *began* to **begins**

G Insert a comma after *effects*

H Change *trains* to **train's**

J Change *crashing* to **crashed**

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

A Change *made* to **makes**

B Change *British* to **british**

C Change *soldiers* to **soldier's**

D Make no change

36 What is the most effective way to improve the organization of the third paragraph (sentences 10–13)?

F Delete sentence 10

G Switch sentences 10 and 11

H Move sentence 12 to the beginning of the paragraph

J Move sentence 13 so that it follows sentence 10

37 What revision, if any, is needed in sentence 16?

A Executives at Universal Television Studios were impressed, and they offered Spielberg a job.

B Impressing executives at Universal Television Studios. They offered Spielberg a job.

C It impressed executives at Universal Television Studios, they offered Spielberg a job.

D No revision is needed.

38 What change should be made in sentence 18?

F Change *highly* to **high**

G Delete the comma after *praised*

H Change *his* to **their**

J Change *famous* to **fame**

39 What is the most effective way to rewrite the ideas in sentence 19?

A Over the next 30 years, Spielberg made scores of movies. Including *Jaws*, the first movie in history to gross more than $100 million, and *Close Encounters of the Third Kind*, for which he earned his first Oscar nomination.

B Over the next 30 years, Spielberg made scores of movies, including *Jaws*, the first movie in history to gross more than $100 million, and *Close Encounters of the Third Kind*, for which he earned his first Oscar nomination.

C Over the next 30 years, Spielberg made scores of movies, including *Jaws*, this is the first movie in history to gross more than $100 million, and *Close Encounters of the Third Kind*, for which he earned his first Oscar nomination.

D Over the next 30 years, Spielberg made scores of movies, including *Jaws*, the first movie in history to gross more than $100 million. And *Close Encounters of the Third Kind*, for which he earned his first Oscar nomination.

40 What change, if any, should be made in sentence 21?

F Change *a ton of* to **numerous**

G Delete the comma after *others*

H Change *world* to **World**

J Make no change

41 What transition should be added to the beginning of sentence 22?

A In contrast,

B Then

C For instance,

D Today

Josephina's English teacher asked each student to write a paper about making changes. Josephina decided to write a narrative for the assignment. She wants you to read her story and think about the corrections and improvements she should make. When you finish reading, answer the questions that follow.

Small-Town Blues

(1) Sonia stood in her new bedroom and looked around. (2) She had to admit the room was nice. (3) It had plenty of space and two big windows that overlooked a tree-filled backyard. (4) But it didn't feel like home. (5) Home was hundreds of miles away, in the city where she had lived for the past 15 years. (6) Sonia looked at her watch and realized she didn't have time to feel sorry for her. (7) It was time to pick up her brother Sam from baseball practice.

(8) Outside, the sun was extremely bright. (9) Sonia noticed that there were no tall buildings to block it, just small houses. (10) And the neighborhood seemed incredibly quiet. (11) There were no car horns or other traffic noises. (12) There wasn't any music pouring out of open windows. (13) The familar city smells were missing, too, such as the delicious aromas from the Portuguese, Mexican, and Thai restaurants on Front Street. (14) Sonia's favorite place to eat had been Matt's, a restaurant near her old house.

(15) As Sonia walked the next few blocks, she began to notice some sounds that were new to her. (16) Birds were singing, lawn mowers were buzzing, and whirring sprinklers. (17) She took a breath, slowly taking in the sent of the flowers and the freshly cut grass. (18) She smiled as she heard salsa music coming from a nearby backyard.

(19) Finally Sonia reached the entrance to the park. (20) She immediately

noticed a game in progress on the basketball court. (21) Several girls who appeared to be about Sonia's age was playing. (22) They were just as good as Sonia and her old friends. (23) The girls were playing hard, but Sonia could see that the girls were laughing and playfully teasing one another, too. (24) Sonia watched intently, wishing she were a part of the action. (25) When the game ended, one of the girls walked to the bench near Sonia to pick up a gym bag.

(26) Suddenly Sonia felt shy she realized she had never known what it felt like to be an outsider. (27) "Do you and your friends play here a lot? she finally asked the girl.

(28) The girl nodded. (29) "It keeps us in shape for the regular season," she answered. (30) "We're all on the team at Carter High School."

(31) "My family just moved here," Sonia said. (32) "I played basketball at my old school."

(33) "We can always use another good player," the girl replied with a smile. (34) "Why don't you come play with us tomorrow after school?"

(35) Sonia felt her shyness evaporating. (36) "Great" she said excitedly. (37) If she could find some friends to play basketball with, maybe she could adjust to this small town after all.

---

42 What change, if any, should be made in sentence 6?

  F Change *and* to **she**

  G Change *realized* to **realizes**

  H Change the second *her* to **herself**

  J Make no change

43 What change should be made in sentence 13?

  A Change *familar* to **familiar**

  B Change *were missing* to **are missing**

  C Change *too* to **to**

  D Change *Street* to **street**

44 What is the most effective way to improve the organization of the second paragraph (sentences 8–14)?

F Switch sentences 8 and 9

G Delete sentence 11

H Move sentence 11 to the end of the paragraph

J Delete sentence 14

45 What revision, if any, is needed in sentence 16?

A Birds were singing, lawn mowers were buzzing, and sprinklers were whirring.

B Birds singing, lawn mowers buzzing, and sprinklers whirring.

C Birds were singing. Lawn mowers were buzzing. There were also whirring sprinklers.

D No revision is needed.

46 What change, if any, should be made in sentence 17?

F Delete the comma after *breath*

G Change *taking* to **take**

H Change *sent* to **scent**

J Make no change

47 What change, if any, should be made in sentence 21?

A Change *appeared* to **apeared**

B Change *Sonia's* to **Sonias**

C Change *was playing* to **were playing**

D Make no change

48 What is the most effective way to rewrite the ideas in sentence 23?

F The girls were playing hard, but Sonia could see it. The girls were laughing and playfully teasing one another, too.

G The girls were playing hard, Sonia could see that they were laughing and playfully teasing one another, too.

H The girls were playing hard, but Sonia could see that they were laughing and playfully teasing one another, too.

J The girls were playing hard, and the girls were laughing and playfully teasing one another, too, Sonia could see.

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

A Insert a semicolon after *shy*

B Change *had never known* to **has never known**

C Change *it* to **she**

D Make no change

50 What change should be made in sentence 27?

F Change *a lot* to **alot**

G Change the question mark to a comma

H Insert quotation marks after the question mark

J Change *the girl* to **her**

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

A Insert an exclamation point after *Great*

B Change *said* to **says**

C Change *excitedly* to **exitedly**

D Make no change

STOP
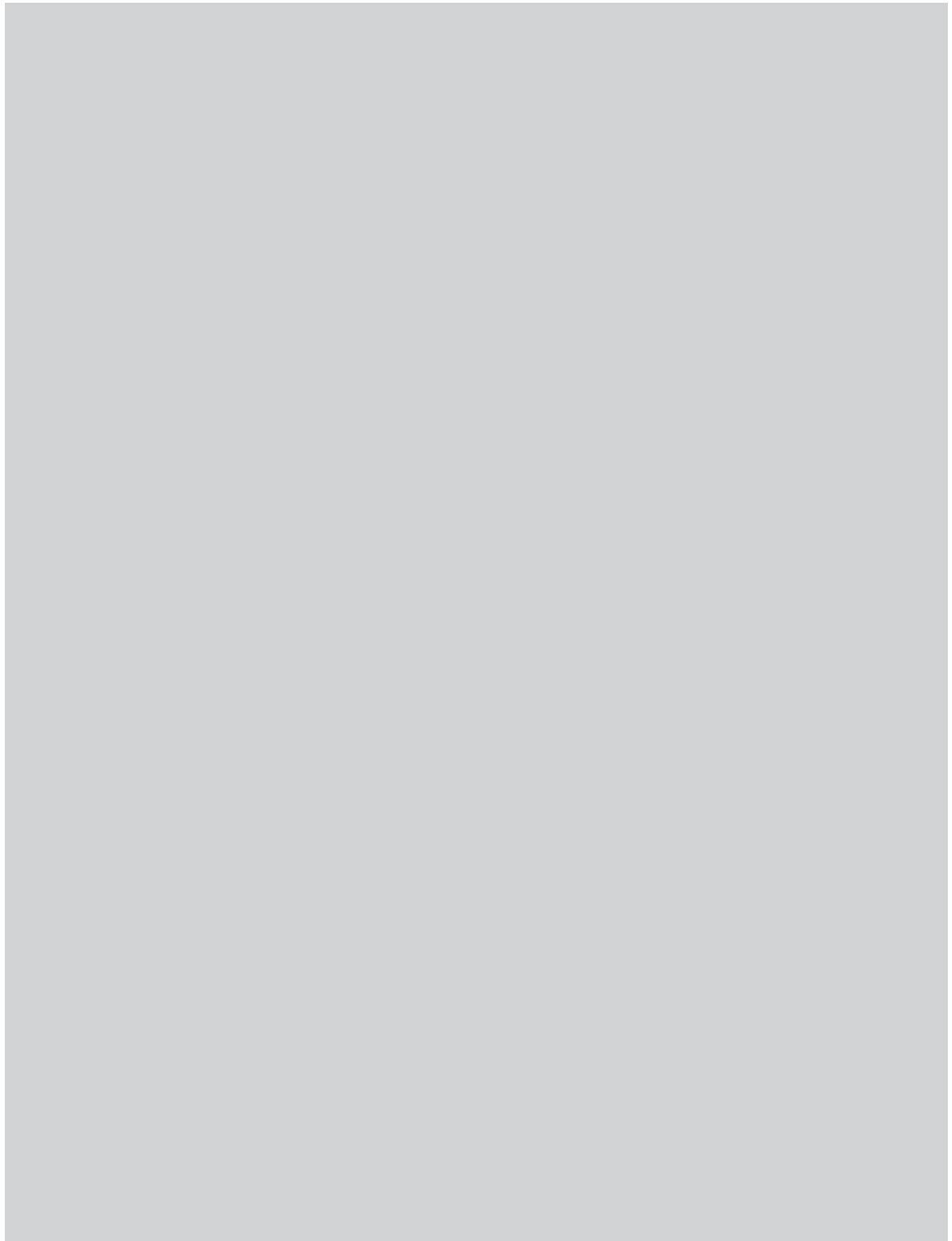
MATHEMATICS

Mathematics Chart

LENGTH

Metric	**Customary**
1 kilometer = 1000 meters	1 mile = 1760 yards
1 meter = 100 centimeters	1 mile = 5280 feet
1 centimeter = 10 millimeters	1 yard = 3 feet
	1 foot = 12 inches

CAPACITY AND VOLUME

Metric	**Customary**
1 liter = 1000 milliliters	1 gallon = 4 quarts
	1 gallon = 128 ounces
	1 quart = 2 pints
	1 pint = 2 cups
	1 cup = 8 ounces

MASS AND WEIGHT

Metric	**Customary**
1 kilogram = 1000 grams	1 ton = 2000 pounds
1 gram = 1000 milligrams	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	$A = \dfrac{1}{2}\, bh$ or $A = \dfrac{bh}{2}$
	trapezoid	$A = \dfrac{1}{2}\,(b_1 + b_2)h$ or $A = \dfrac{(b_1 + b_2)h}{2}$
	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	$V = \dfrac{1}{3}\, Bh$*
	sphere	$V = \dfrac{4}{3}\, \pi r^3$

B represents the area of the Base of a solid figure.

Pi	π	$\pi \approx 3.14$ or $\pi \approx \dfrac{22}{7}$
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		$m = \dfrac{y_2 - y_1}{x_2 - x_1}$
Midpoint Formula		$M = \left(\dfrac{x_1 + x_2}{2},\ \dfrac{y_1 + y_2}{2} \right)$
Quadratic Formula		$x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
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		$I = prt$

Read each question. Then fill in the correct answer on your answer document. If a correct answer is <u>not</u> <u>here</u>, mark the letter for "Not here."

SAMPLE A

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

A $\quad -\dfrac{3}{2}$

B $\quad 4$

C $\quad 8$

D $\quad$ 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 An artist studies human proportions in order to make realistic drawings. He observes that a person's kneeling height, y, is $\frac{3}{4}$ of the person's standing height, x. Which equation best represents this relationship?

A $y = \frac{3}{4}x$

B $y = -\frac{3}{4}x$

C $y = x - \frac{3}{4}$

D $y = x + \frac{3}{4}$

2 In a high school auditorium, 1 junior and 2 sophomores are seated randomly together in a row. What is the probability that the 2 sophomores are seated next to each other?

F $\frac{1}{9}$

G $\frac{1}{3}$

H $\frac{2}{3}$

J $\frac{5}{6}$

3 Karen jogs at a steady pace up a hill in her neighborhood. She then runs down the hill, and her speed increases. Which graph best describes this situation?

A

Speed / Time

C

Speed / Time

B

Speed / Time

D

Speed / Time
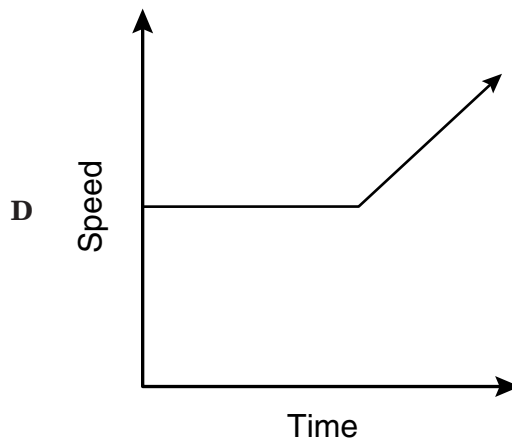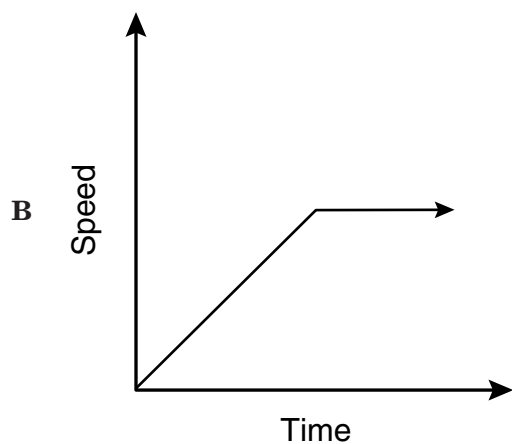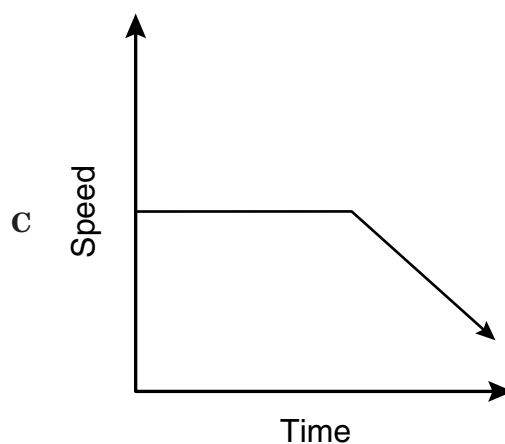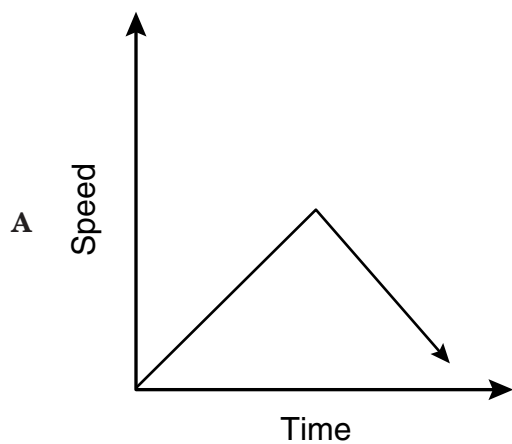
4 The graph below shows the height of a baseball from the time it is thrown from the top of a building to the time it hits the ground.
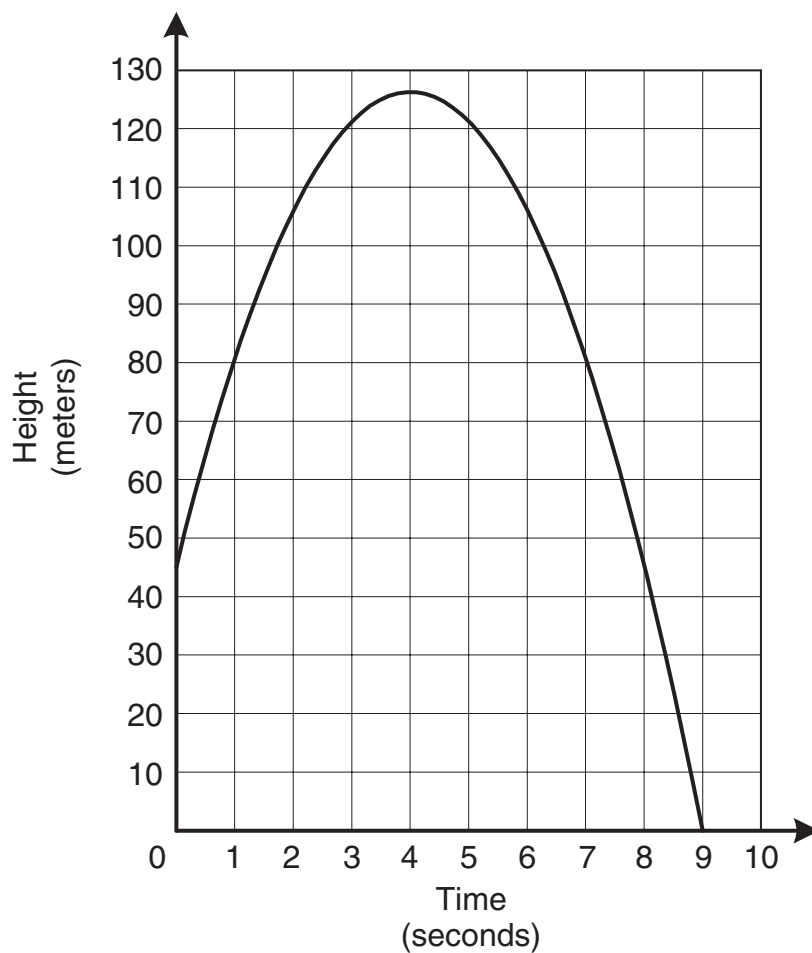
How much time elapses while the baseball is 80 meters or more above the ground?

F   1 sec

G   9 sec

H   7 sec

J   6 sec

5 Use the table to determine the expression that best represents the number of diagonals of any convex polygon having n sides.

Polygon	Number of Sides	Number of Diagonals
Triangle	3	0
Quadrilateral	4	2
Pentagon	5	5
Hexagon	6	9
Heptagon	7	14
Octagon	8	20

A $n - 3$

B $\dfrac{n - 3}{2}$

C $\dfrac{n(n - 3)}{2}$

D $n(n - 3)$

6 Which set of dimensions corresponds to a rectangular prism similar to the one shown below?

12

8

6
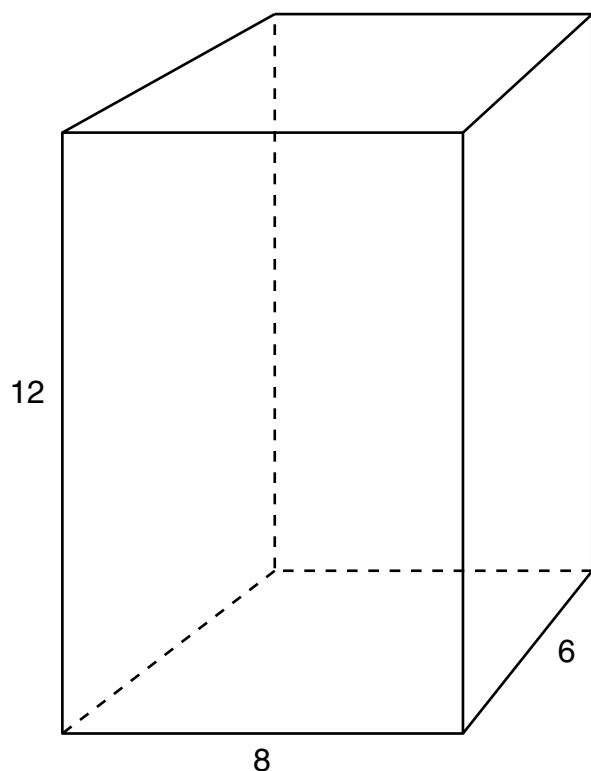
F 2 units by 3 units by 4 units

G 4 units by 2 units by 8 units

H 2 units by 1 unit by 6 units

J 4 units by 3 units by 6 units

7 Doris had a circular garden with a radius of 30 feet. She used all of the fencing from the circular garden to enclose a square garden. The length of each side of Doris's square garden was approximately —

A 47 feet

B 94 feet

C 120 feet

D 188 feet

8 What are the coordinates of the x-intercept of the equation $-3y = 8 - 2x$?

F $(-2, 0)$

G $(0, -\frac{8}{3})$

H $(\frac{2}{3}, 0)$

J $(4, 0)$

9 How many 2-inch cubes can be placed completely inside a box that is 8 inches long, 2 inches wide, and 6 inches tall?

A 8

B 12

C 24

D 48

GO ON

10 Which pair of the following polygons is congruent?
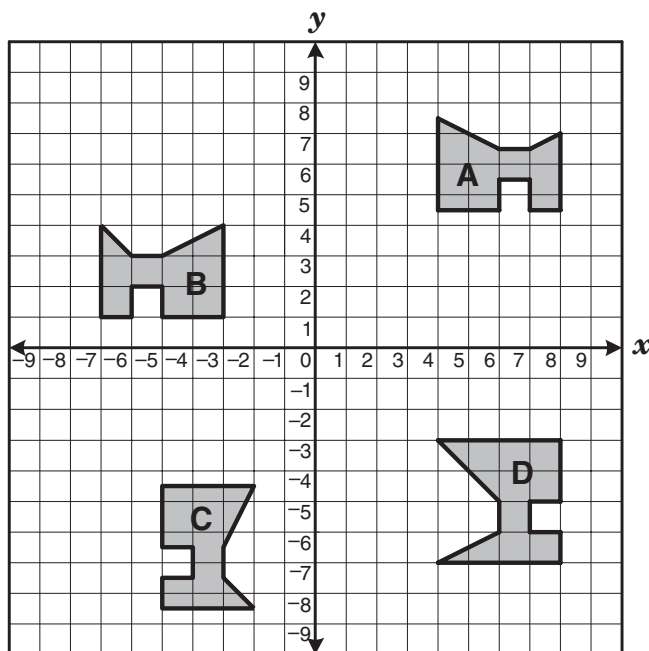
F Polygon A and Polygon C

G Polygon B and Polygon D

H Polygon A and Polygon B

J Polygon B and Polygon C

11 Let a represent the average speed in miles per hour a car traveled on a trip. Let $f(t)$ represent the distance in miles the car had traveled t hours after the beginning of the trip. The function $f(t)$ is best represented by —

A $t^2 + a$

B at^2

C $t + a$

D at

GO ON

12 A kite string is 220 feet long from the kite to the ground. The string makes a 45° angle with the ground.
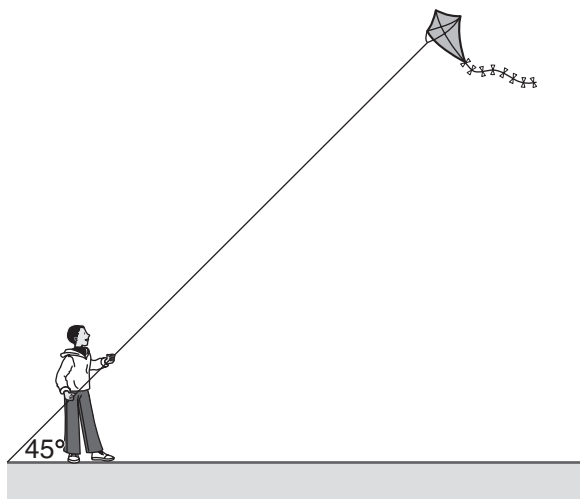
About how high off the ground is the kite?

F 110 ft

G 127 ft

H 156 ft

J 311 ft

13 What are the slope and *y*-intercept of the equation of the line graphed below?
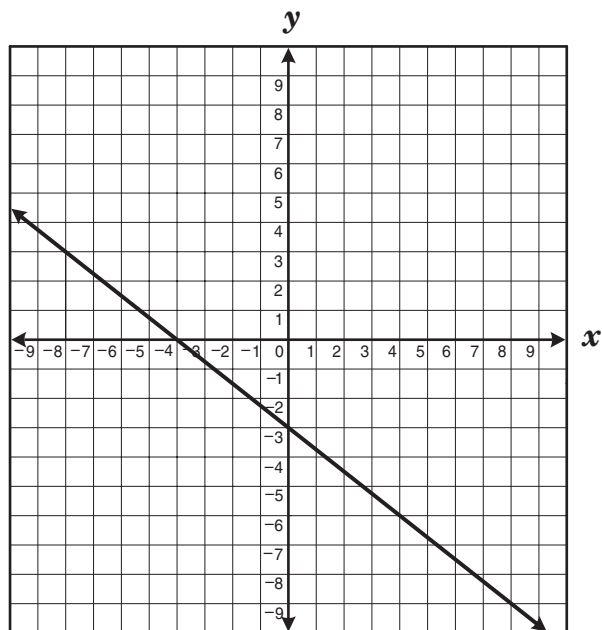
A $m = -\dfrac{3}{4}$

$b = -4$

B $m = -\dfrac{4}{3}$

$b = -4$

C $m = -\dfrac{4}{3}$

$b = -3$

D $m = -\dfrac{3}{4}$

$b = -3$

14 Jamal has a game with 2 groups of tiles. The first group of 26 tiles is labeled with all the letters of the alphabet. The second group of 10 tiles is numbered 0 through 9. If Jamal draws 1 letter tile and 1 number tile at random, what is the probability that he will draw a letter in his name and an odd number?

F $\dfrac{1}{13}$

G $\dfrac{5}{52}$

H $\dfrac{1}{4}$

J $\dfrac{7}{26}$

15 Which of the following best represents the front view of the solid shown below?
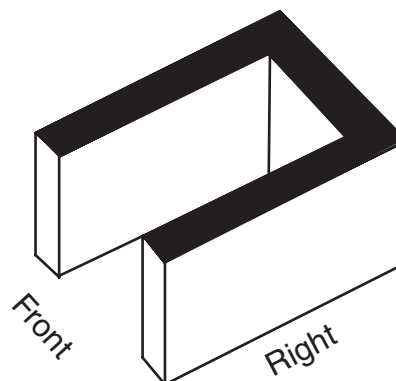
A

B
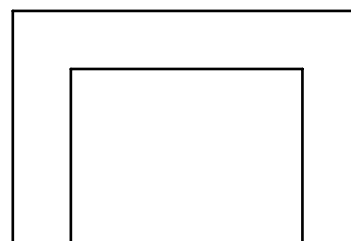
C
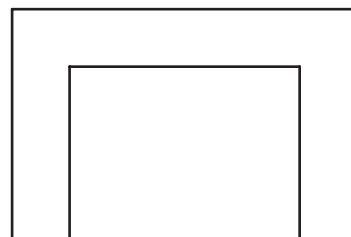
D
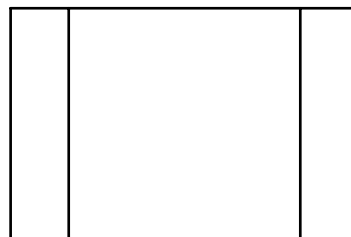
16 Which of the following best describes the graph of the equations below?

$$2y = 3x + 2$$

$$4y = 6x + 1$$

F The lines have the same y-intercept.

G The lines have the same x-intercept.

H The lines are perpendicular.

J The lines are parallel.

17 The graph of a line is shown below.
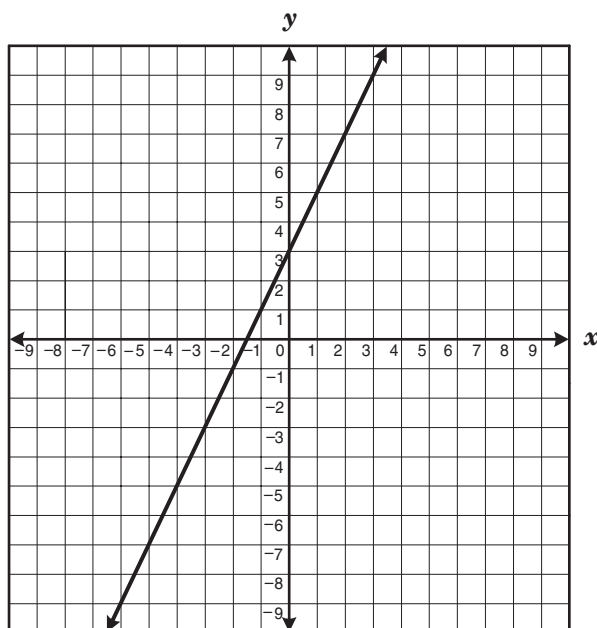
If the slope of this line is multiplied by -1 and the y-intercept decreases by 2 units, which linear equation represents these changes?

A $y = -2x + 1$

B $y = -x + 1$

C $y = -x - 1$

D $y = -\dfrac{1}{2}x - 1$

18 Given: Two angles are supplementary. The measure of one angle is 20° more than the measure of the other angle.

Conclusion: The measures of the angles are 70° and 90°.

This conclusion —

F is contradicted by the first statement given

G is verified by the first statement given

H invalidates itself because a 90° angle cannot be supplementary to another

J verifies itself because 90° is 20° more than 70°

19 Megan is using an equilateral triangle as part of a design on a sweatshirt. Each side of the triangle is 12 inches long. Megan is sewing a line of sequins from the midpoint of one side of this triangle to the opposite vertex. Approximately how long will the line of sequins be?

A 13.4 in.

B 10.4 in.

C 8.5 in.

D 5.2 in.

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20 Which graph best represents the inequality $x + 2y \leq -14$?
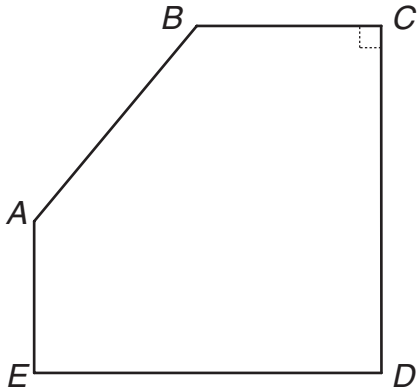
F
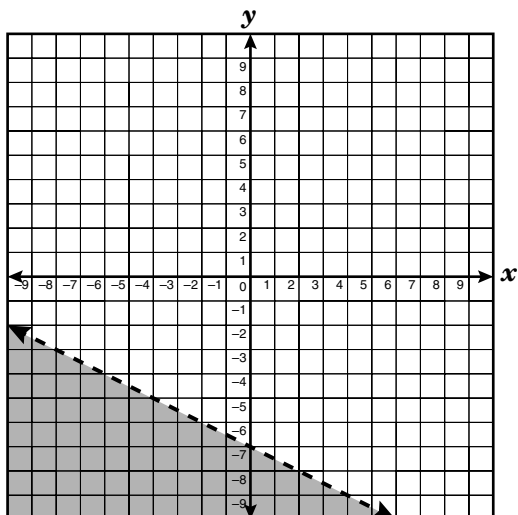
H
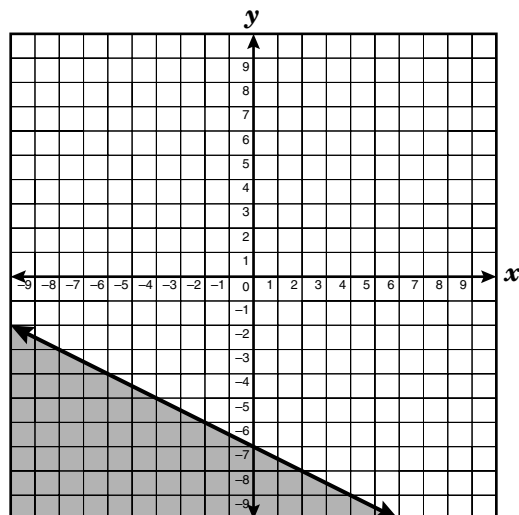
G
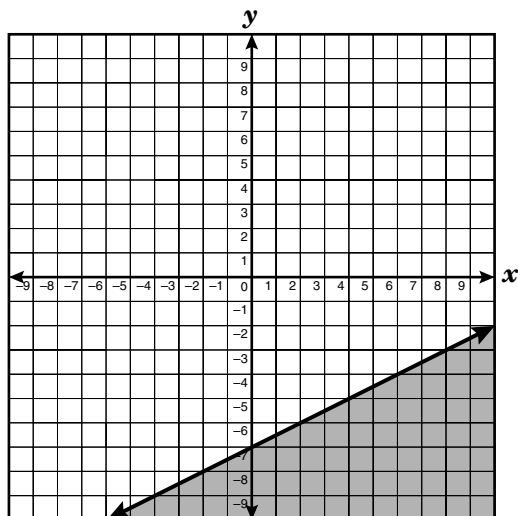
J
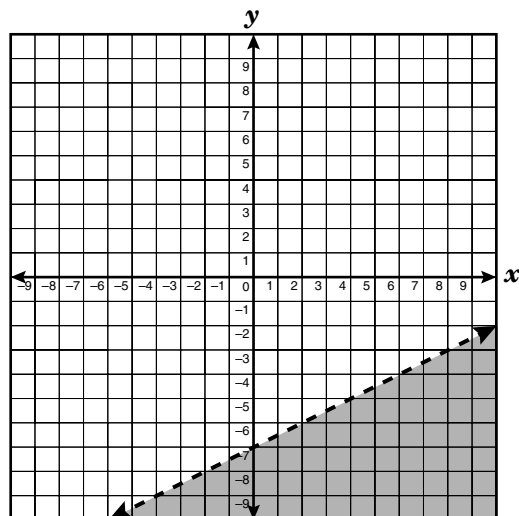
21 In the figure shown below, $\overline{BC}$ is parallel to $\overline{ED}$, and $\overline{AE}$ is perpendicular to $\overline{ED}$. The measure of $\angle ABC$ is 130°.

What is the measure of $\angle BAE$ in degrees?

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

22 A wooden pole was broken during a windstorm. Before it broke, the total height of the pole above the ground was 25 feet. After it broke, the top of the pole touched the ground 15 feet from the base.
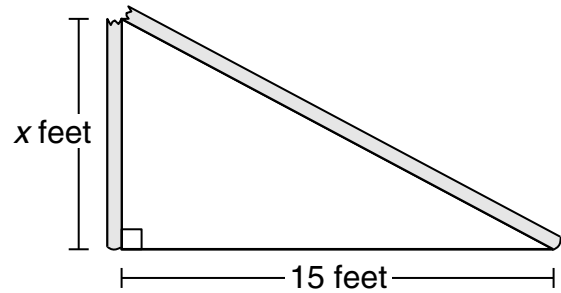
How tall was the part of the pole that was left standing?

F   8 ft

G   10 ft

H   17 ft

J   20 ft

GO ON

23 A rectangle has a length of 4 feet and a perimeter of 14 feet. What is the perimeter of a similar rectangle with a width of 9 feet?
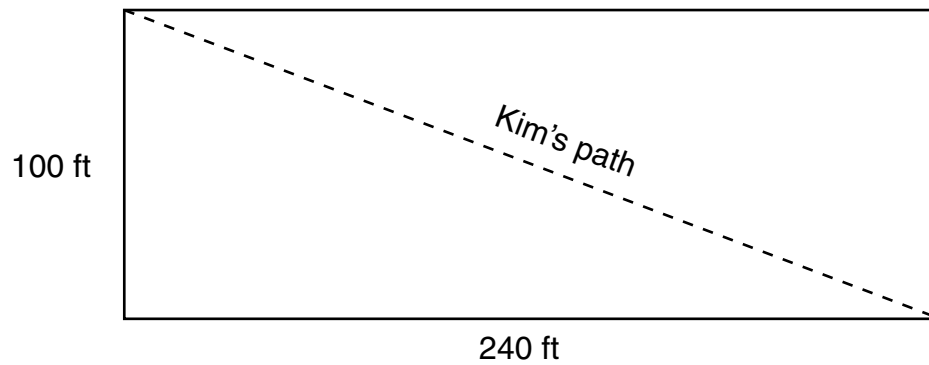
A 36 ft

B 42 ft

C 108 ft

D 126 ft

24 Which two 3-dimensional figures have the same number of faces?

F A triangular prism and a square pyramid

G A triangular prism and a rectangular prism

H A triangular pyramid and a square pyramid

J A triangular pyramid and a rectangular prism

25 Kim walked diagonally across a rectangular field that measured 100 feet by 240 feet.

Which expression could be used to determine how far Kim walked?

A $2(100 + 240)$

B $\sqrt{100} + \sqrt{240}$

C $\dfrac{100 \times 240}{2}$

D $\sqrt{(100^2) + (240^2)}$

---

26 If the surface area of a cube is increased by a factor of 4, what is the change in the length of the sides of the cube?

F The length is 2 times the original length.

G The length is 4 times the original length.

H The length is 6 times the original length.

J The length is 8 times the original length.

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27 What is the domain of the function shown on the graph?
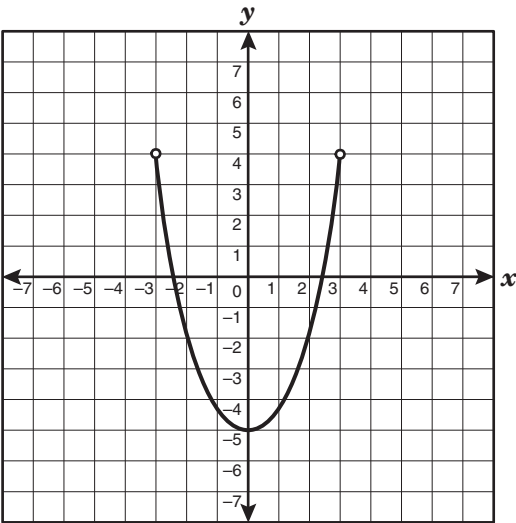
A $-3 \leq x \leq 3$

B $-3 < x < 3$

C $-5 < x \leq 4$

D $-5 \leq x < 4$

28 Marsha brought cookies to school. She gave a third of her cookies to Ana. Ana then gave a fourth of her cookies to Cybil. Cybil gave half of her cookies to Betsy. If Betsy has 2 cookies, how many cookies did Marsha have in the beginning?

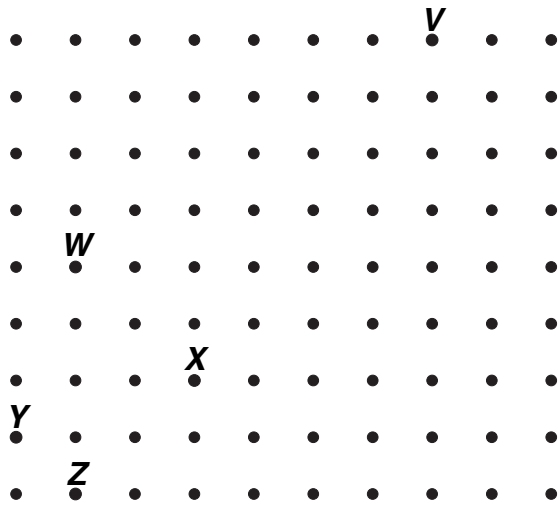**F** 18

G 24

H 36

J 48

29 The graph of the equation $y = \frac{5}{3}x - 3$ is given below. Graph $y = x + 1$ on the grid.
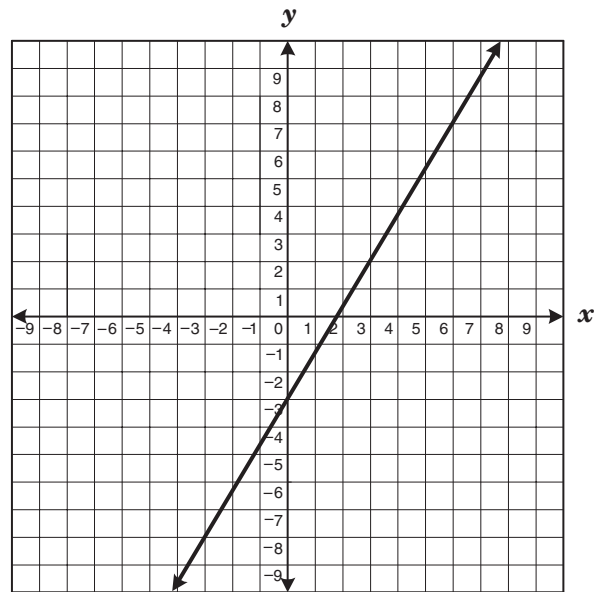
What is the solution to this system of equations?

A (0, 1)

B (5, 6)

C (6, 7)

D No solution

GO ON

30 As part of a classroom assignment, Kimberly was given this geoboard to model the slope of $\frac{2}{3}$.

If the peg in the lower left-hand corner represents the origin on a coordinate plane, where could Kimberly place a rubber band to represent the given slope?

F From peg V to peg W

G From peg V to peg X

H From peg V to peg Y

J From peg V to peg Z

31 Which equation best describes the relationship between x and y shown in the table below?

x	y
1	3
2	12
4	48
6	108
9	243

A $y = 3x$

B $x = 3y$

C $x = 3y^2$

D $y = 3x^2$

32 Chase wanted to find 3 consecutive whole numbers that add up to 81. He wrote the equation $(n - 1) + n + (n + 1) = 81$. What does the variable n represent in the equation?

F The least of the 3 whole numbers

G The middle of the 3 whole numbers

H The greatest of the 3 whole numbers

J The difference between the least and greatest of the 3 whole numbers

33 A leap year occurs when the number of a year is a multiple of 4. However, year numbers that are multiples of 100 are not leap years unless they are multiples of 400. Which is not an example of a leap year?

A 2440

B 2400

C 2340

D 2300

**34** Which equation is the parent function of the graph represented below?
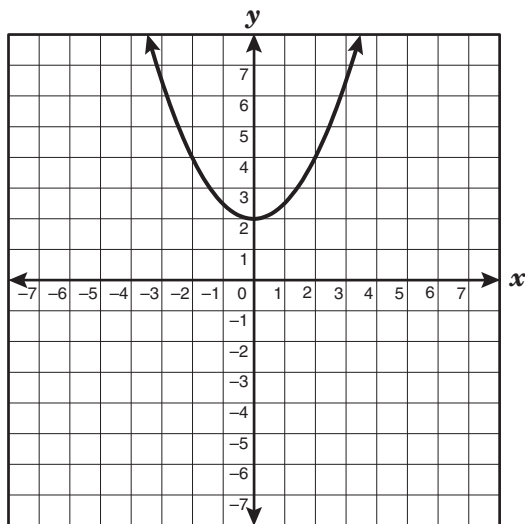
F $y = |x|$

G $y = x$

H $y = x^2$

J $y = \sqrt{x}$

35 Two race cars travel at constant speeds in the same direction around a track. The faster car travels 186 miles per hour and completes 50 laps each time the slower car completes 47.6 laps. Which is a reasonable estimate of the slower driver's speed?

A Between 180 mph and 185 mph

B Between 175 mph and 180 mph

C Between 145 mph and 150 mph

D Between 135 mph and 140 mph

GO ON

36 For a sports banquet Coach Mackey must use the rectangular tables in the school cafeteria. The diagram below shows the seating arrangements that Coach Mackey can use at 1 and 2 tables.


$\times$ = 1 person
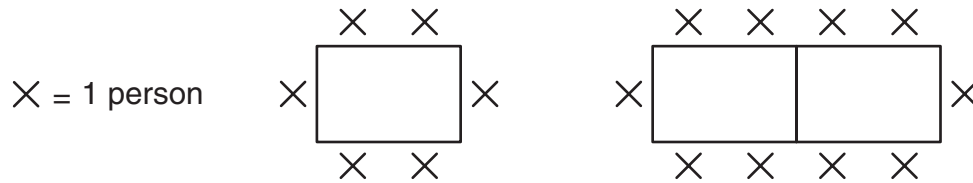
Which expression can be used to determine the number of people who can sit as a group if y tables are joined to form 1 long table?

F $6y$

G $4(y + 1)$

H $3(y + 1)$

J $2(2y + 1)$

---

37 The completion of a certain chemical reaction is expressed by the equation $y = 250 - 5x - x^2$, where y is the number of seconds needed to complete the reaction and x is the temperature in degrees Celsius at which the reaction occurs. If the reaction is complete in 200 seconds, what is the temperature at which the reaction occurs?

A 5°C

B 7°C

C 10°C

D 12°C

38 Which of the following is a true statement about the net of the cube shown?
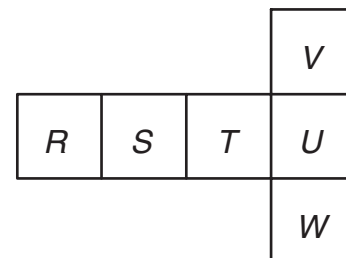
F Faces R and S are parallel.

G Faces R and U are parallel.

H Faces S and U are perpendicular.

J Faces T and U are perpendicular.

GO ON

39 Amber is making a patchwork quilt using 3 different types of fabric. Each type of fabric is cut into rectangles. The first fabric is cut into pieces measuring 3 inches by 5 inches. The dimensions of the rectangles of the second type of fabric are 125% those of the first type, and the dimensions of the third type of fabric are 125% those of the second. What are the approximate dimensions of the third type of fabric?

A 3.75 in. by 6.25 in.

B 4.69 in. by 7.81 in.

C 5.50 in. by 7.50 in.

D 4.25 in. by 6.25 in.

40 At a college bookstore, Carla purchased a math textbook and a novel that cost a total of $54, not including tax. If the price of the math textbook, m, is $8 more than 3 times the price of the novel, n, which system of linear equations could be used to determine the price of each book?

F $m + n = 8$
$m = 3n + 54$

G $m + n = 8$
$m = 3n - 54$

H $m + n = 54$
$m = 3n + 8$

J $m + n = 54$
$m = 3n - 8$

41 Which expression is equivalent to $\frac{2}{3}(3x - 15y) + (9y - 11x)$?

A $-9x - y$

B $11x - 21y$

C $10x - 4y$

D $-9x - 26y$

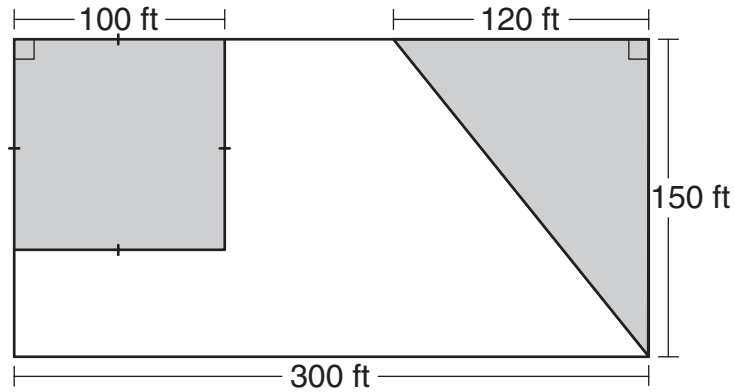**42** Which ordered pair represents one of the roots of the function $f(x) = 2x^2 + 3x - 20$?

F $\left(-\frac{5}{2}, 0\right)$

G $(-4, 0)$

H $(-5, 0)$

J $(-20, 0)$

43 What is the area of the unshaded part of the rectangle below?

- **A** 19,000 ft^2
- **B** 45,000 ft^2
- **C** 28,000 ft^2
- **D** 26,000 ft^2

44 Which equation represents the line that passes through the points $(-1, 4)$ and $(3, 2)$?

- **F** $y = -\dfrac{1}{2}x + \dfrac{7}{2}$

- **G** $y = -\dfrac{1}{2}x + \dfrac{9}{2}$

- **H** $y = -2x + 7$

- **J** $y = -2x + 3$

GO ON

45 Matt is a speed skater. His coach recorded the following data during a timed practice period.

Time (seconds)	Distance (meters)
4.50	50
9.00	100
11.25	125

If Matt continues to skate at the rate shown in the table, what is the approximate distance in meters he will skate in 25 seconds?

A 250 m

B 175 m

C 150 m

D 278 m

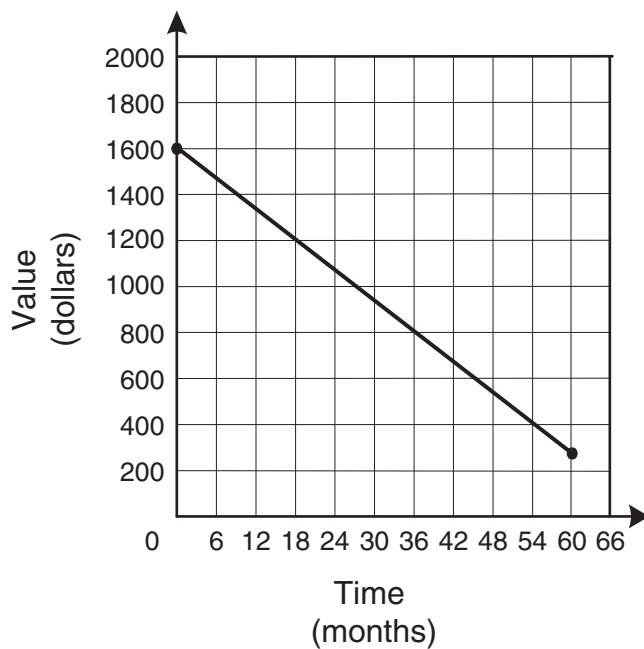**46** The lengths of the bases of an isosceles trapezoid are shown below.
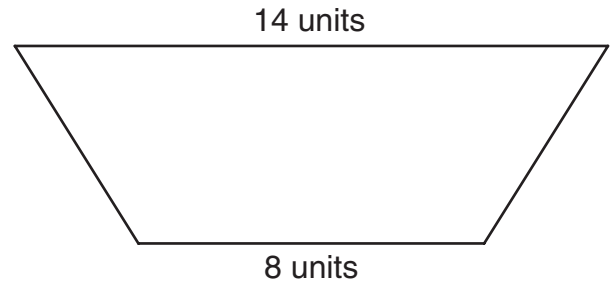
If the perimeter of this trapezoid is 32 units, what is its area?

F 44 square units

G 110 square units

H 88 square units

J 55 square units

47 The graph below shows the decrease in the value of a personal computer over a period of 60 months.

Which is a reasonable conclusion about the value of this personal computer during the time shown on the graph?

A Its value at 18 months was twice its value at 36 months.

B Its value at 36 months was half its value at 54 months.

C It depreciated $200 every 12 months.

D It depreciated $400 every 18 months.

48 The amount of an employee's weekly pay, p, including a bonus, can be represented by the inequality $6.00h + 100 < p < 6.50h + 125$, where h represents the number of hours worked by the employee. If an employee worked 25 hours, which of the following is a reasonable amount for that week's pay?

F $118.75

G $250.00

H $272.50

J $290.25

**49** The table below shows the cost of fertilizer, depending on the amount purchased.

Cost of Fertilizer

Number of Pounds	Cost
5	$1.95
20	$6.95
50	$15.95
100	$28.95

Which conclusion can be made based on information in the table?

A The cost of 10 pounds of fertilizer would be more than $4.00.

B The cost of 200 pounds of fertilizer would be less than $57.00.

C The cost of fertilizer is always more than $0.35 per pound.

D The cost of fertilizer is always less than $0.30 per pound.

**50** A hexagon is graphed on the coordinate grid.
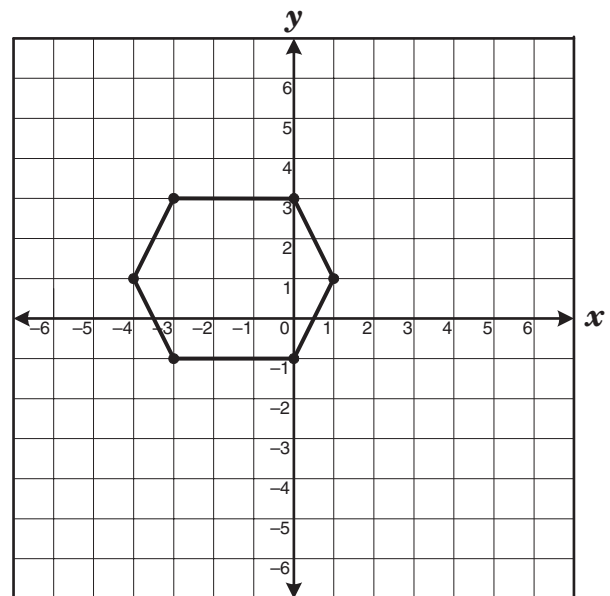
Which two coordinate points lie on the same line of symmetry on this hexagon?

F $(-3, -1)$ and $(0, 3)$

G $(-1, 3)$ and $(-1, -1)$

H $(0, 3)$ and $(0, -1)$

J $(-4, 1)$ and $(1, 1)$

GO ON

51 About how many feet of fencing are needed to enclose a rectangular garden with a 30-foot-long side and a 40-foot-long diagonal?

A   113 ft

B   133 ft

C   140 ft

D   160 ft

52 A frozen dinner is divided into 3 sections on a circular plate with a 12-inch diameter.
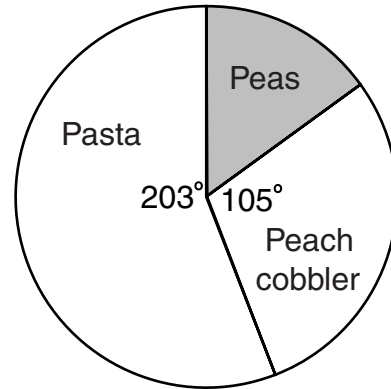
What is the approximate length of the arc of the section containing peas?

F   3 in.

G   21 in.

H   16 in.

J   5 in.

GO ON

53 The price, e, of an entertainment system at Extreme Electronics is $220 less than twice the price, u, of the same system at Ultra Electronics. The difference in price between the system at Extreme Electronics and Ultra Electronics is $175. Which system of linear equations can be used to determine the price of the system at each store?

A $2e - u = 220$

$e - u = -175$

B $2e - u = 220$

$e + u = 175$

C $2e - 2u = 440$

$e - u = -175$

D $e - 2u = -220$

$e - u = 175$

---

54 The area of a rectangle is $144j^9k^{15}$ square units. If the width of the rectangle is $8j^4k^5$ units, what is the rectangle's length?

F $1152j^{13}k^{20}$ units

G $152j^{13}k^{20}$ units

H $136j^5k^{10}$ units

J $18j^5k^{10}$ units

55 A department store had a 20%-off sale on all clothing items. Which statement best represents the functional relationship between the sale price of an article of clothing and the original price?
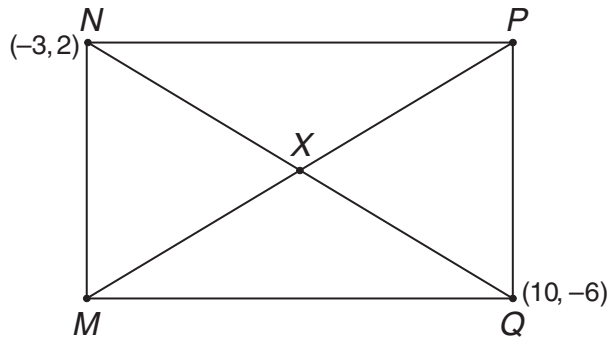
A The original price is dependent on the sale price.

B The sale price is dependent on the original price.

C The sale price and the original price are independent of each other.

D The relationship cannot be determined.

56 Rectangle *MNPQ* has diagonals that intersect at point *X*.

Which of the following represents point *X*?

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

G $(\frac{13}{2}, 4)$

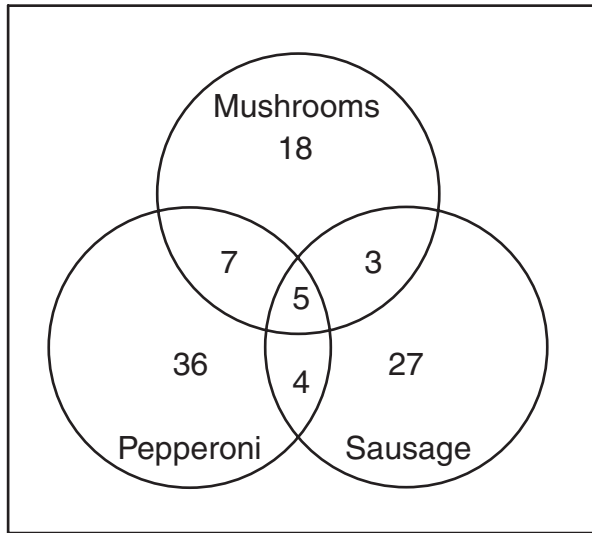**H** $(-\frac{13}{2}, -4)$

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

57 Line *q* is shown below.
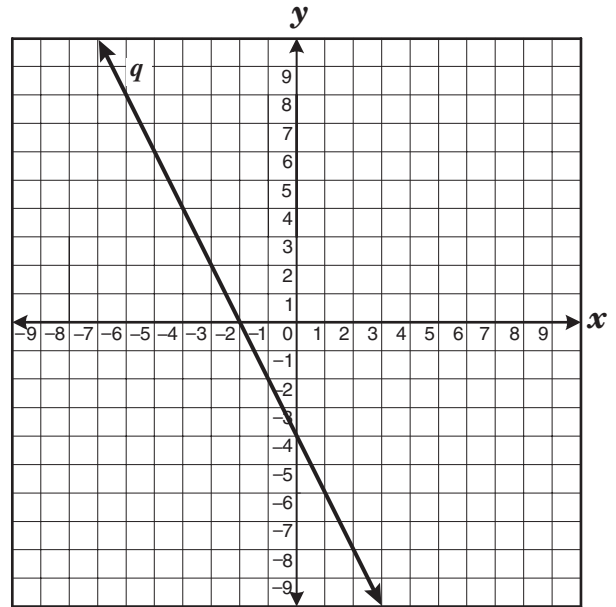
Which equation best represents a line parallel to line *q*?

A $y = -\frac{1}{2}x + 4$

B $y = \frac{1}{2}x - 3$

C $y = 2x - 5$

D $y = -2x + 1$

GO ON

58 A pizza parlor surveyed 100 customers to determine their favorite pizza topping or combination of toppings. The results are shown below.

How many of the customers surveyed picked a combination of only 2 toppings as their favorite?

F 5

G 7

H 14

J 19

59 Which equation will produce the widest parabola when graphed?

A $y = 2x^2$

B $y = -6x^2$

C $y = -0.6x^2$

D $y = 0.2x^2$

60 Ms. Barton determined that the total cost of her wedding, c, could be represented by the equation $c = 75n + 1500$, where n is the number of people attending the wedding. If Ms. Barton's wedding cost $8625, how many people attended the wedding?

F 135

G 95

H 115

J 75

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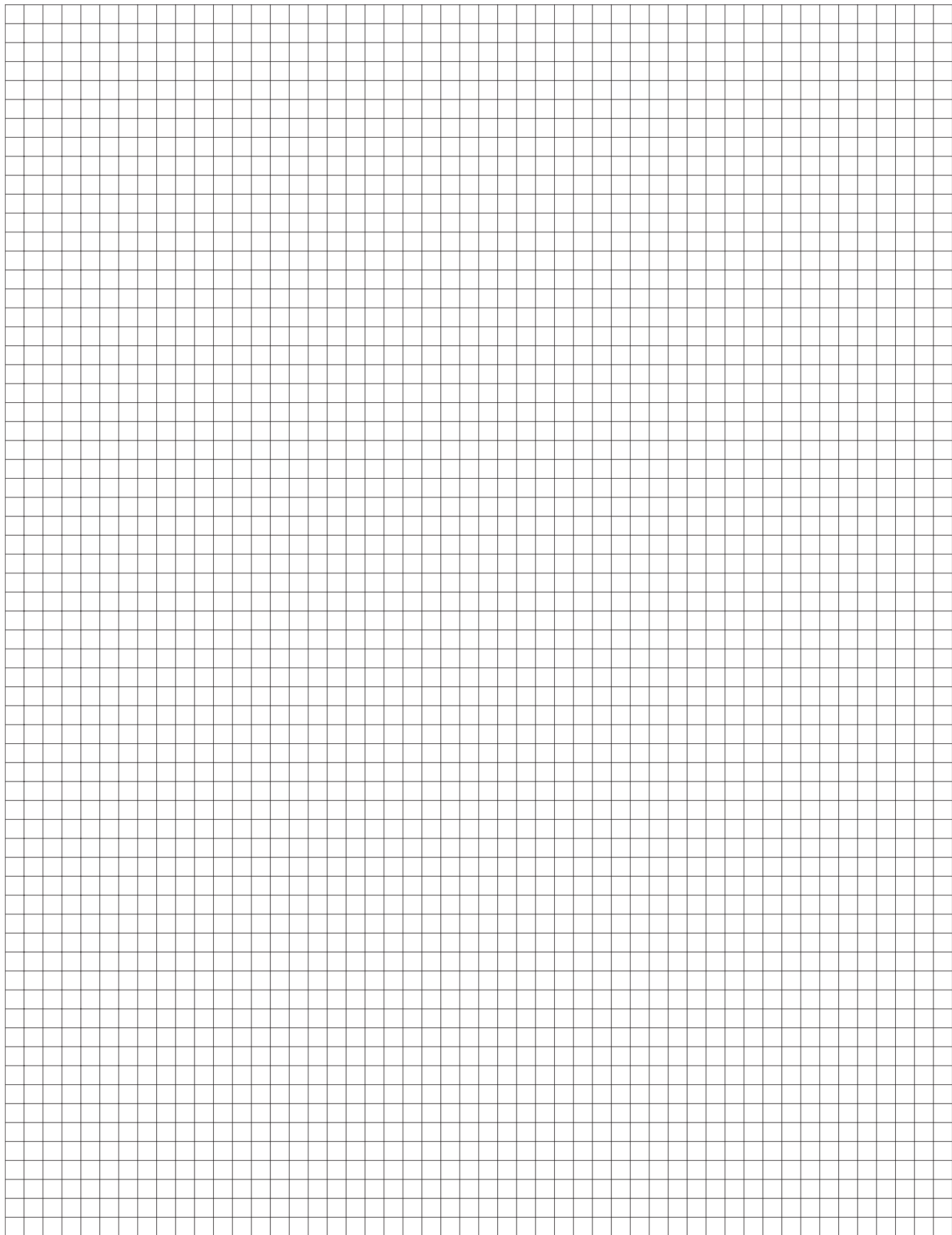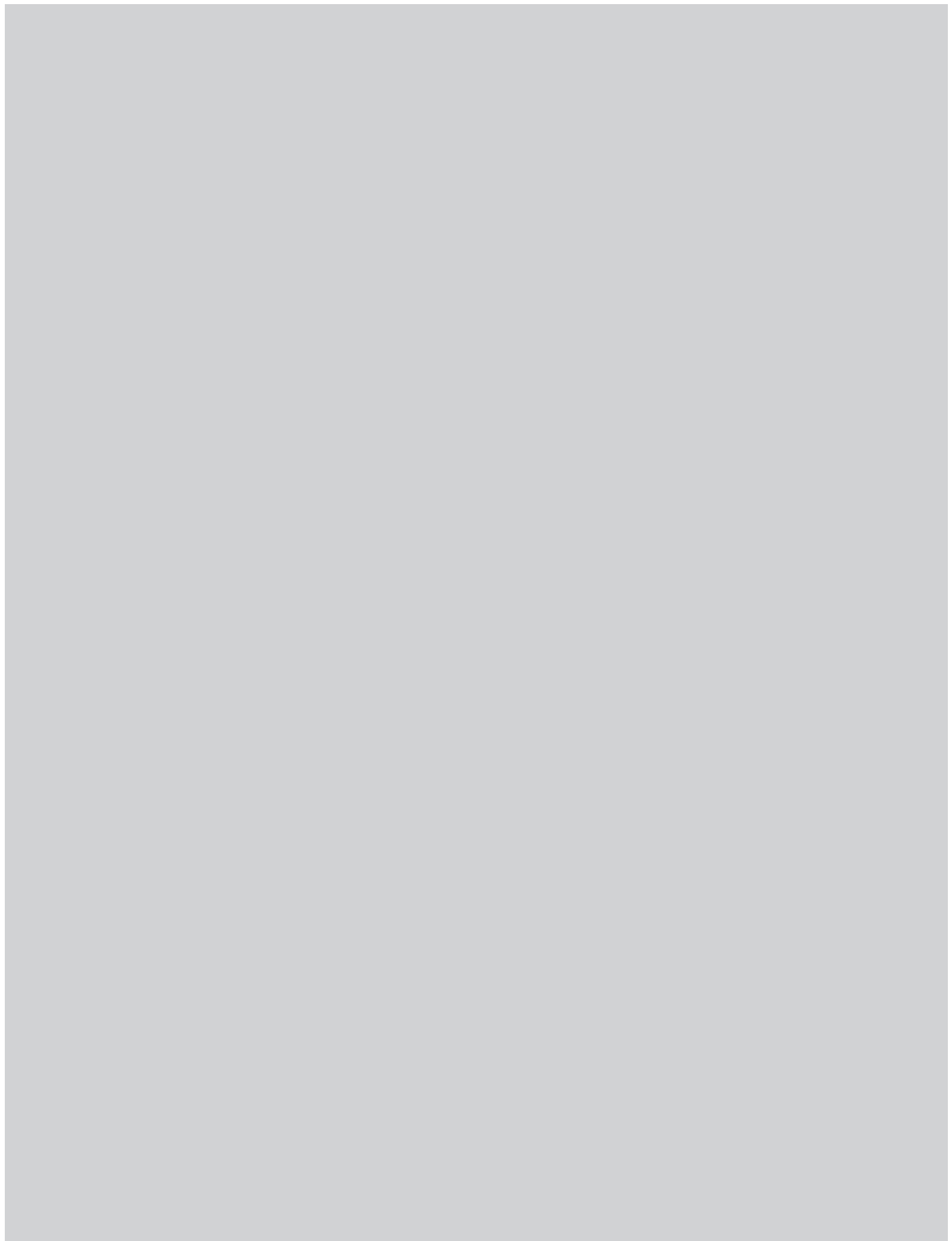
STOP

SOCIAL STUDIES

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

STOP

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

Montgomery Bus Boycott

March on Washington

Sit-ins in Greensboro, North Carolina

March from Selma to Montgomery

---

1   All of these were examples of demonstrations that occurred to —

   A   end the Vietnam War

   B   focus on environmental issues

   C   obtain equal rights for African Americans

   D   lower the voting age

GO ON

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

Overcrowded cities

Dwindling resources

?

Air pollution

Limited water supply
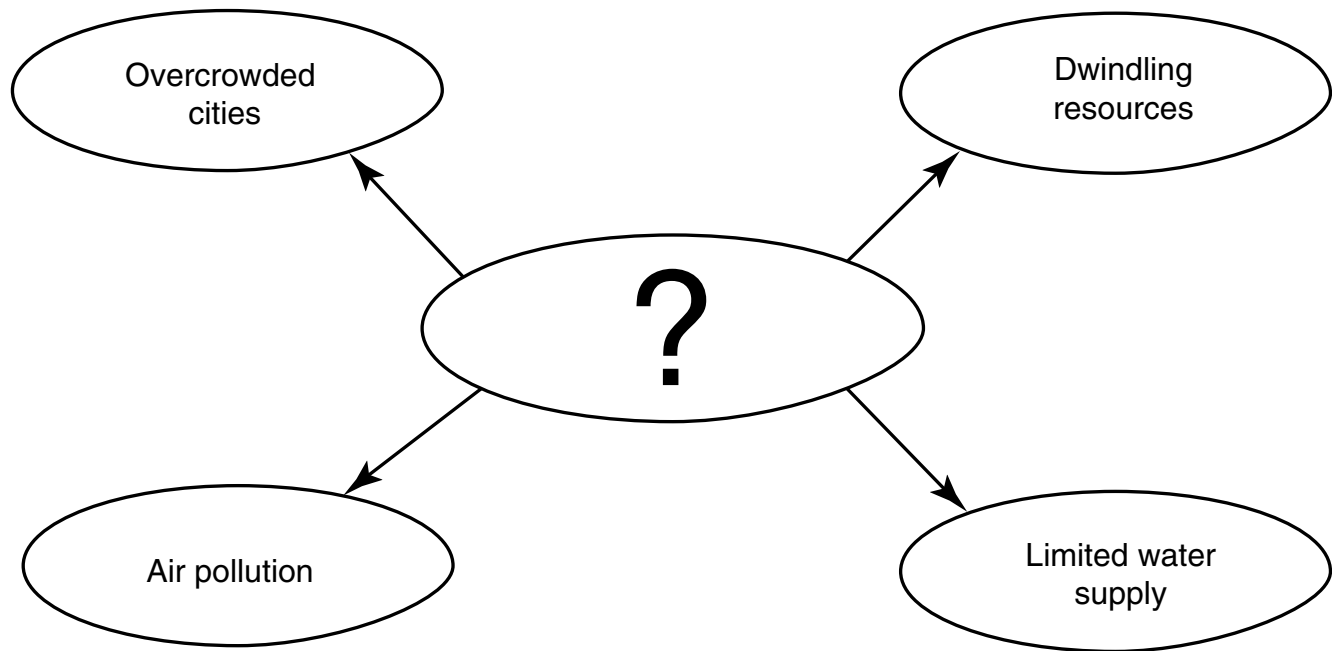
2   Which of the following best completes the diagram above?

    F   Population Growth

    G   U.S. Trade Policies

    H   Supply-Side Economics

    J   Immigration Restrictions

GO ON

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

<div style="display:flex;justify-content:space-between">Source: Bettmann/CORBIS   Source: CORBIS</div>

3 Both of these photographs were taken in the South in the mid-1900s. What conclusion can be drawn by comparing them?

A Because of differences in the facilities, white students most likely received a better education than African Americans.

B Despite differences in the facilities, African American students most likely received a better education than white students.

C Southern state governments provided equal funding for both African American and white students.

D Segregation of southern schools had no impact on the quality of education.

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

> The state very properly assumes the right to provide that all its children shall be furnished with the means of education; and for years has required that children of tender age shall not be employed in factories unless they have attended school a certain number of months in each year.
>
> — *Massachusetts House Document No. 44, 1867*

4 The excerpt addresses which of the following issues?

    F   The minimum wage

    G   Private education

    H   Day care

    J   Child labor

5 Which of these made it possible for women to become full participants in American political life?

    A   Appointment of women to the U.S. Supreme Court

    B   Passage of the 19th Amendment granting women voting rights

    C   Creation of the National Organization for Women (NOW)

    D   Equal pay for female factory workers

GO ON

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

The Explorations of Lewis and Clark

British Territory (Canada)

Ft. Clatsop

Lewis and Clark 1806

Lewis's return

Ft. Mandan

Oregon

Territory

Clark's return

Legend:

Louisiana Purchase

Oregon Territory

Spanish Possessions

Pacific Ocean

Rocky Mountains

Spanish Possessions

Missouri River

Lewis and Clark (1804–1805)

Louisiana Purchase 1803

St. Louis

United States in 1803

Mississippi R.

Rio Grande

New Orleans

Gulf of Mexico

Atlantic Ocean

N
W — E
S

6 It can be concluded from the map that one purpose of the Lewis and Clark expedition was to —

F gain information about Spanish possessions in the Southwest

G explore Canadian territory

H explore areas west of the Mississippi River

J lay claim to the Rio Grande

7 Why were labor strikes in the late 19th century not as effective in industries that depended largely on unskilled workers?

A Most unskilled workers were paid high wages.

B Unskilled workers could be replaced more easily than skilled workers.

C Unskilled workers were not allowed to join unions.

D Many unskilled workers were deported for supporting unions.

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

> • Direct election of senators
>
> • Women's suffrage
>
> • Direct primary elections

8 What was the immediate effect of the Progressive reforms listed in the box?

F Shareholders began to elect corporate officers.

G Big business came under greater government control.

H Citizens had a larger role in selecting their elected representatives.

J Political bosses in large cities gained greater control over local governments.

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

> No freeman shall be seized, imprisoned, . . . or in any way destroyed; nor will we [the king] proceed against or prosecute him except by the lawful judgment of his peers, or by the law of the land.
>
> — *Magna Carta, 1215*

9 Which democratic principle is based on the excerpt above?

A Right to bear arms

B Freedom of speech

C Freedom of the press

D Right to a trial by jury

10 The development of both the telegraph and telephone contributed to the economic expansion of the United States by increasing the —

F willingness of communications companies to share technology

G price and durability of communications equipment

H scale and speed of nationwide communications
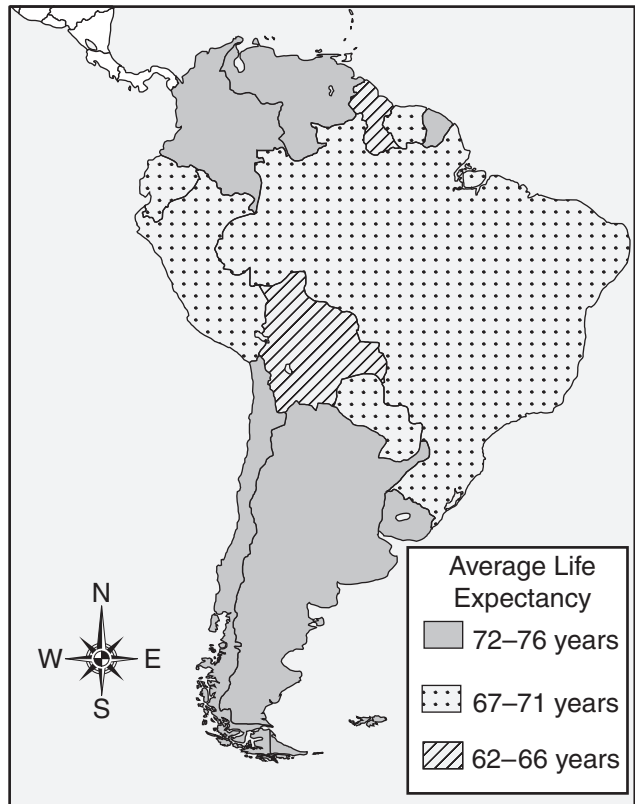
J importation of foreign communications products

GO ON

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

Literacy Rate in South American Countries, 2001

Projected Life Expectancy in South American Countries, 2000–2005

Literacy Rate
90%–100%
80%–89%
70%–79%

N
W E
S
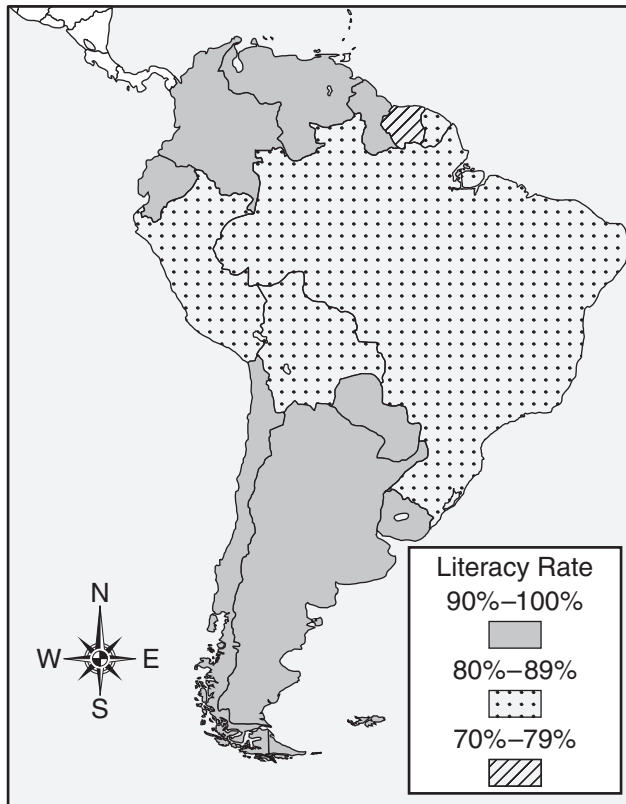
Source: CIA World Factbook, 2001

Average Life Expectancy
72–76 years
67–71 years
62–66 years

N
W E
S

Source: United Nations Statistics Division

11 It can be concluded from the maps that in South America —

A there is no relationship between literacy rate and life expectancy

B countries in the southern part of the continent have lower literacy rates than those in the north

C countries in the central part of the continent generally have the highest life expectancy

D literacy rates and life expectancy are generally highest in the same countries

GO ON

Use the poster and your knowledge of social studies to answer the following question.
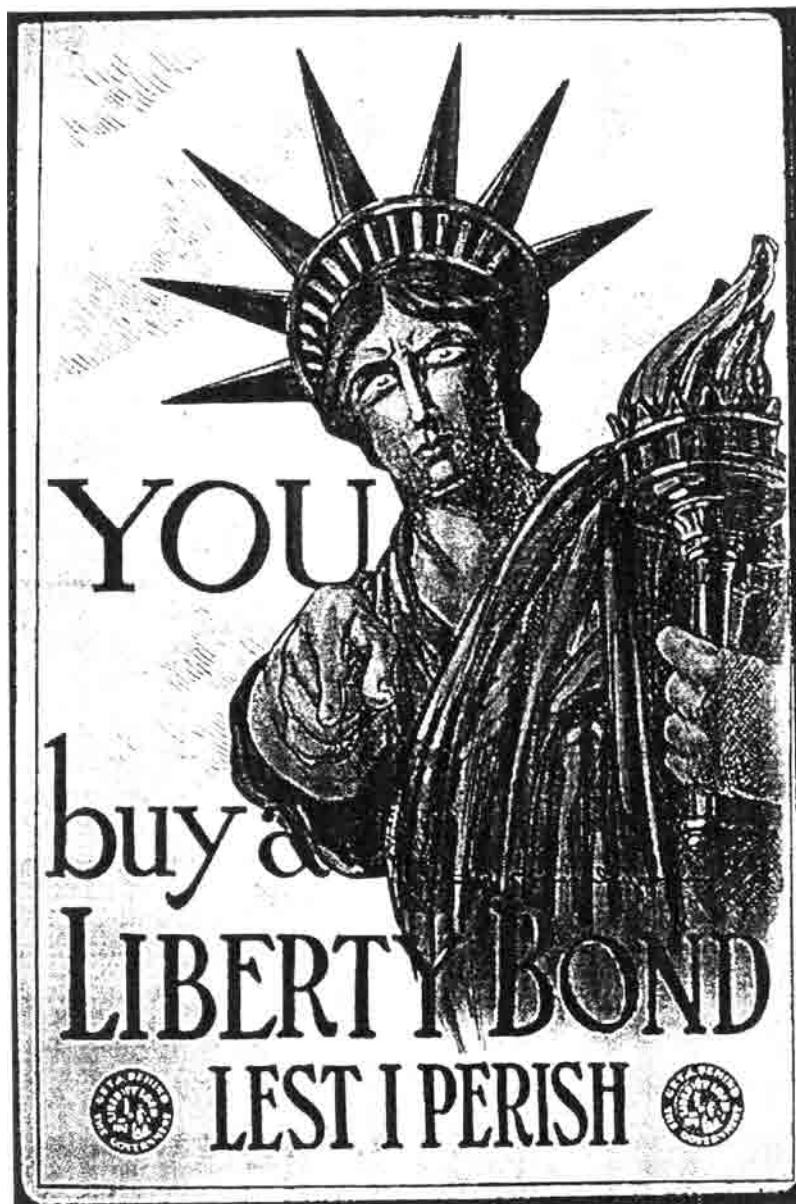
Source: NARA

12 The point of view expressed in this poster is that if Americans failed to support the war effort by purchasing government bonds, then —

   F freedom would be threatened

   G the government would increase rationing

   H more soldiers would have to be drafted

   J the United States would be expelled from the Allied powers

13 One reason people overextended their use of credit in the stock market during the late 1920s was that they believed —

   A debts would not have to be repaid for many years

   B the federal government would assume their debts

   C they would make quick profits and be able to repay their debts

   D overspending would bolster the weak economy

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

> And so, my fellow Americans: ask not what your country can do for you—ask what you can do for your country.
>
> — *John F. Kennedy, Inaugural Address, January 20, 1961*

14 Which of the following would be the best example of what President Kennedy asked Americans to do in the excerpt above?

   F Conserve energy

   G Support his reelection

   H Perform civil service

   J Oppose Supreme Court rulings

15 The opening of the Erie Canal in 1825 —

   A ended the use of natural waterways for trade

   B increased trade between the Midwest and the East Coast

   C diminished the importance of railroads

   D improved the delivery of cotton and rice to markets in the South

16 Many U.S. farmers from the Great Plains left their farms and migrated to California in the 1930s because of —

   F the excessively high cost of new farm machinery

   G federal and state assistance programs available to farmers in California

   H drought and dust storms that destroyed their crops

   J the availability of factory jobs in California

17 Which of the following was the immediate result of the Supreme Court's decision in *Brown* v. *Board of Education of Topeka* (1954)?

A   The all-white primary was declared unconstitutional.

B   States were permitted to adopt Jim Crow laws.

C   Poll taxes were upheld as a legitimate restriction on voting.

D   Public schools were ordered to desegregate.

18 How did the introduction of the assembly line affect the U.S. automobile industry in the early 20th century?

F   There was an increase in federal regulation of automobile production.

G   The United States began to import large numbers of cars.

H   There was a decrease in demand for unskilled labor.

J   The demand for cars increased as they became affordable for the average person.

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

Excerpt from *Federalist* No. 51

[I]t is evident that each department should have a will of its own; and consequently should be so constituted that the members of each should have as little agency as possible in the appointment of the members of the others.

— *James Madison, 1788*

19 According to the excerpt above, Madison favored the basic constitutional principle of —

A   separation of powers

B   republicanism

C   federalism

D   popular sovereignty

20 During World War II, the Soviet Union pressured the other Allies to open a second front in France in order to —

F   allow the Soviet Union to send troops to fight in North Africa

G   help French communists resist the Nazis

H   free the Soviet Union to concentrate on fighting Japan

J   force Germany to move some of its troops away from the eastern front

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

> I believe that it must be the policy of the United States to support free peoples who are resisting attempted subjugation by armed minorities or by outside pressures. . . . If we falter in our leadership, we may endanger the peace of the world—and we shall surely endanger the welfare of our own nation.
>
> — *President Harry Truman, 1947*

21 What threat was President Truman referring to in the excerpt above?

    A Regional wars in South America

    B The spread of communism

    C Civil disobedience in U.S. cities

    D The formation of the United Nations

22 Which of the following events prompted the ratification of the 26th Amendment, which gave 18-year-olds the right to vote?

    F The Watergate scandal

    G The election of Richard M. Nixon

    H The energy crisis

    J The Vietnam War

23 The purpose of the Open Door policy proposed by the United States in 1899 was to —

    A protect U.S. interests by establishing equal trading rights in China

    B establish a trade embargo against Japan until the Japanese withdrew from Korea

    C form a military alliance with countries opposed to Russian expansion

    D encourage Asian nations to form an economic coalition

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

Levittown, New York

24 The construction of tract-housing suburbs such as the one shown above was a response to the growth of the U.S. population immediately following —

   F   World War I

   G   the Great Depression

   H   World War II

   J   the Vietnam War

25 Which of the following statements best characterizes the purpose of the North Atlantic Treaty Organization (NATO), which was created in 1949?

   A Each member nation is committed to the defense of all other member nations.

   B All member nations will cooperate in rebuilding war-torn nations.

   C Trade barriers between all member nations will be removed.

   D All member nations will enforce trade embargoes against communist countries.

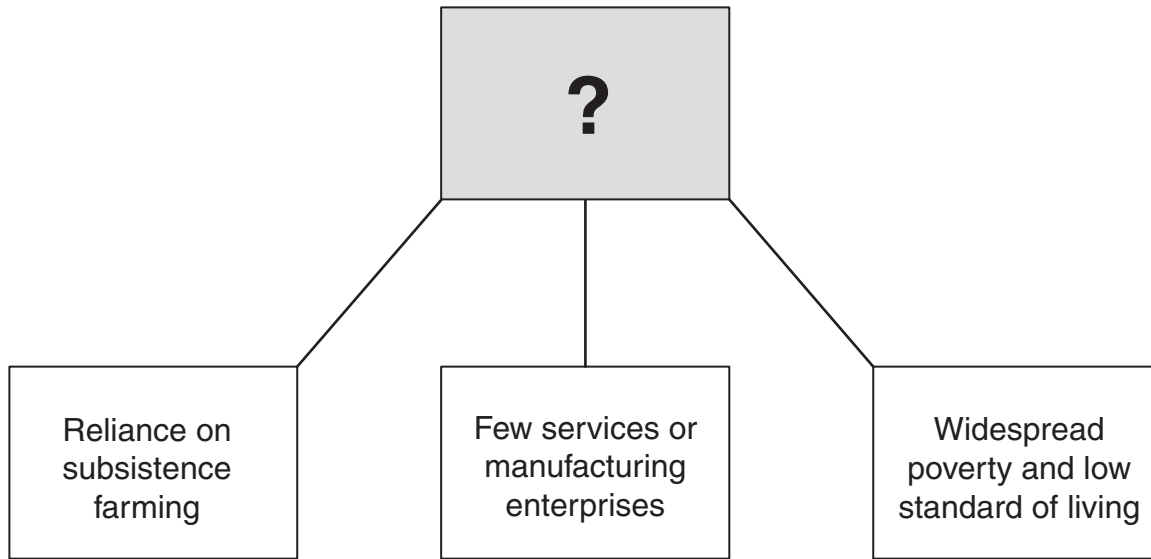**26** The Battle of Midway was a crucial victory for the United States because it —

   F dealt a severe blow to the Japanese navy

   G was the last sea battle of the war with Japan

   H was fought on Japanese territory

   J destroyed Japan's will to continue fighting

27 Which of these periods in U.S. history occurred first?

   A Great Depression

   B Progressive Era

   C Cold War

   D Gilded Age

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

```
                    ┌───────────┐
                    │     ?     │
                    └───────────┘
           ┌────────────┼────────────┐
 ┌──────────────┐ ┌──────────────┐ ┌──────────────┐
 │ Reliance on  │ │ Few services │ │  Widespread  │
 │ subsistence  │ │     or       │ │ poverty and  │
 │   farming    │ │ manufacturing│ │ low standard │
 │              │ │ enterprises  │ │  of living   │
 └──────────────┘ └──────────────┘ └──────────────┘
```

28 The best title for the diagram above is —

    F   Characteristics of Developing Nations

    G   Characteristics of Industrialized Nations

    H   Characteristics of a Free-Enterprise System

    J   Characteristics of a Command Economic System

29 Which of the following actions by Germany led to the end of U.S. neutrality during World War I?

    A   The invasion of Russia

    B   The use of unrestricted submarine warfare

    C   Attacks on U.S. colonies

    D   The assassination of Archduke Franz Ferdinand

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

- NAACP founded

- Pure Food and Drug Act passed

- 19th Amendment ratified

- Clayton Antitrust Act passed

---

30 The events in the box are all associated with which period in U.S. history?

   F   The Progressive Era

   G   The Gilded Age

   H   The Great Depression

   J   Reconstruction

31 In the early 20th century, the increase in ethnic diversity in the United States because of immigration from southern and eastern Europe contributed to —

   A   increased social tension

   B   a decrease in urban populations

   C   increased religious tolerance

   D   an extended economic decline

32 Compared to a market-oriented economy, a subsistence-based economy has a higher percentage of agricultural output that is —

   F   sold for profit

   G   produced for personal use

   H   collected for payment of taxes

   J   distributed to the poor by the government

33 President Theodore Roosevelt increased American involvement in world affairs by —

   A   issuing the corollary to the Monroe Doctrine

   B   campaigning against international trusts

   C   urging Congress to declare war on Germany

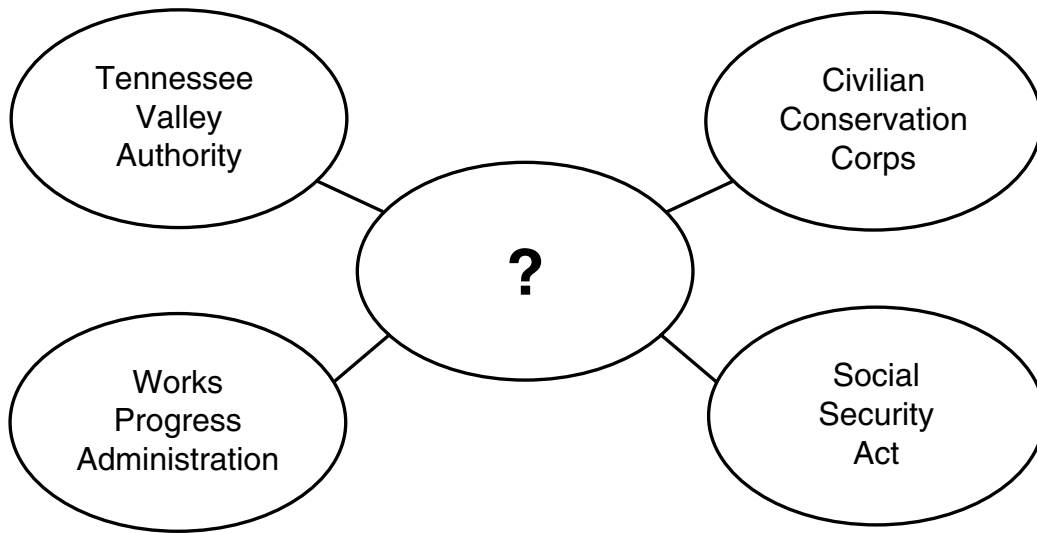   **D**   repealing federal tariff laws

34 The actions of Joseph McCarthy in the early 1950s led many Americans to —

   F   suspect that some government officials had communist sympathies

   G   demand more rights for organized labor

   H   support U.S. involvement in the United Nations

   J   organize to protect the rights of African Americans

GO ON

35 Which of the following would be a primary source for a historian writing an account of the Battle of Wounded Knee?

   A A biography of a battle participant

   B A diary of a cavalry officer who participated in the battle

   C A history book on the Indian Wars

   D An interview with a descendant of Sitting Bull

36 The U.S. Civil Rights movement had its roots in the late 18th and early 19th centuries with the work of —

   F carpetbaggers

   G the Know-Nothings

   H abolitionists

   J the Populists

37 Why did President Woodrow Wilson consider the last item in his Fourteen Points speech, the creation of a general association of nations, to be the most important?

   A Such an organization would provide a forum for addressing international problems.

   B It placed the United States in a leadership position among nations.

   C It excluded small colonial nations from the diplomatic process.

   D It guaranteed that Great Britain, France, and Italy would retain control of Europe.

38 As a result of the passage of the Homestead Act in 1862, the Great Plains —

   F became the most populated region of the United States

   G became the location of the country's largest urban centers

   H was preserved through conservation measures

   J was developed into a major agricultural area

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

```
  Tennessee                          Civilian
    Valley                         Conservation
  Authority                           Corps

              ?

   Works                             Social
  Progress                          Security
Administration                        Act
```

39 Which of the following best completes the diagram?

A Great Society programs

B New Deal programs

C World War I treaty articles

D Roosevelt Corollary

40 In 1898 more than 200 Americans died when the battleship U.S.S. *Maine* exploded in Havana Harbor. This event prompted the beginning of the —

F Mexican-American War

G Civil War

H Spanish-American War

J Russo-Japanese War

41 The purpose of the system of checks and balances in the U.S. Constitution is to —

A grant most legislative power to the House of Representatives

B establish judicial guidelines at the state and local levels

C balance the interests of large and small states

D prevent one branch of the federal government from becoming too powerful

GO ON

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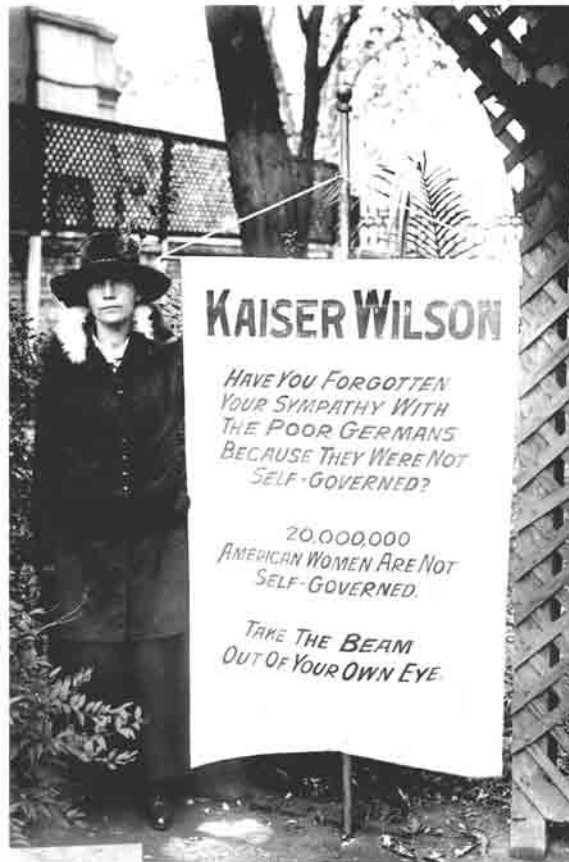
Source: NARA

42 What issue is the person in the photograph trying to pressure President Woodrow Wilson to support?

    F   A graduated income tax

    G   The passage of the Prohibition amendment

    H   A compulsory draft

    J   The expansion of voting rights

43 The Founding Fathers protected freedom of the press in the Bill of Rights because they —

A wanted to secure the authority of the federal government over the states

B hoped that the government would publish a national newspaper

C wanted the government to remain open and accountable to the people

D hoped that the government would establish public libraries

44 The migration of thousands of African Americans to the North in the early 20th century can best be explained by —

F the availability of cheap farmland in the North

G the closing of factories in southern states

H decreased availability of government land for sharecropping in the South

J greater job opportunities in northern cities

45 As a result of the passage of the Civil Rights Act of 1964, segregation was outlawed in —

A public facilities

B the armed forces

C religious institutions

D private universities

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

Source: NARA

46 The World War I poster above shows that —

F victory would result in complete equality for African Americans

G African American families contributed to the war effort

H more African Americans than any other group died in the war

J most African American families opposed the wartime draft

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

Physical Map of Asia
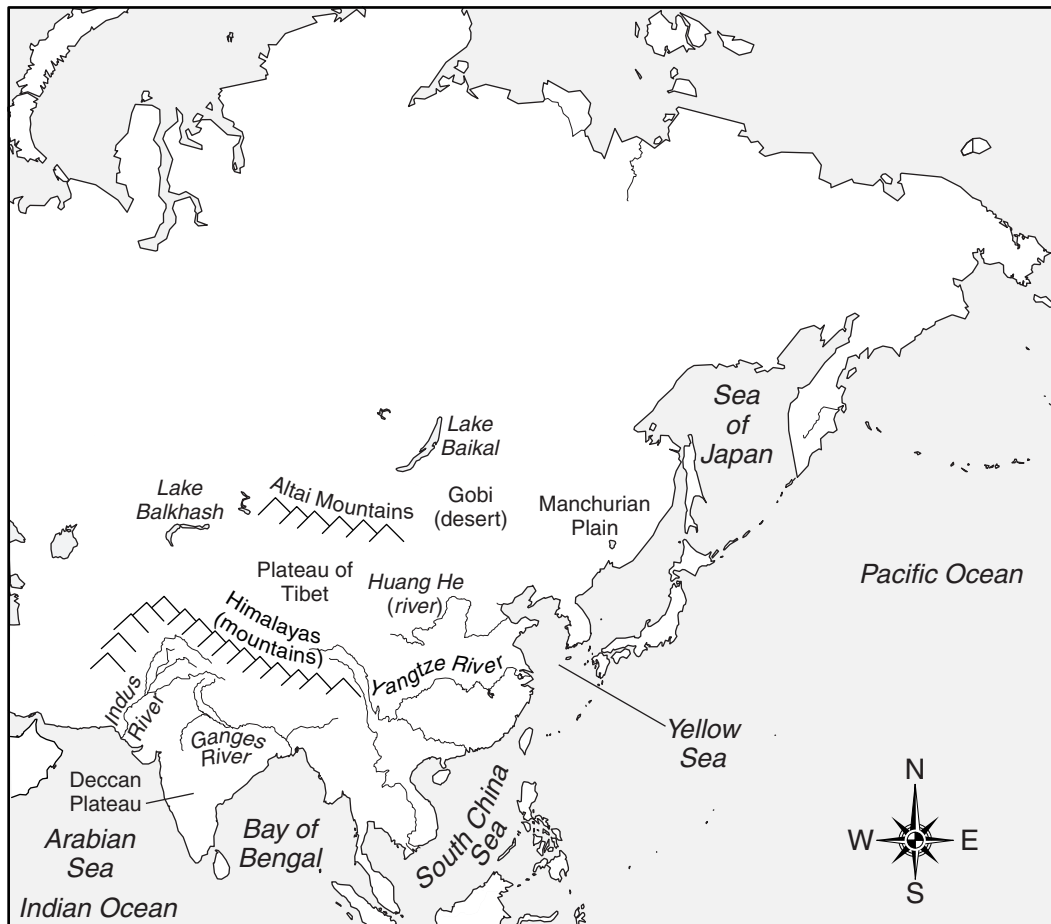
47 Based on the information on the map, which of the following physical geographic features historically isolated India from the rest of Asia?

A The Gobi

B The Deccan Plateau

C The Ganges River

D The Himalayas

48 Which Founding Father of the United States had the most significant role in writing the Declaration of Independence?

    F   Thomas Jefferson

    G   George Washington

    H   John Adams

    J   Benjamin Franklin

49 Which of the following is an accurate statement about the impact of the automobile on American life?

    A   The automobile has improved air quality because fossil fuels are clean-burning.

    B   The automobile has led to the growth of suburbs because cars allow people to commute to work.

    C   The automobile has reduced personal freedom because people must obtain licenses to drive.

    D   The automobile has helped U.S. businesses grow because people are reluctant to buy foreign cars.

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

Press Release from U.S. Department of Justice

FOR IMMEDIATE RELEASE
WEDNESDAY, NOVEMBER 8, 1995

ASSISTANT ATTORNEY GENERAL LOIS SCHIFFER TO ATTEND CHICAGO PRESS
CONFERENCE TO ANNOUNCE MULTI-MILLION DOLLAR TOXIC DUMPING SETTLEMENT

ACTION AIMED AT PROTECTING WATER QUALITY OF LAKE MICHIGAN

WASHINGTON -- Lois J. Schiffer, Assistant Attorney General in charge of the
Environment and Natural Resources Division, will be in Chicago tomorrow to announce the
settlement of a clean water enforcement action involving a Chicago manufacturing company.
Schiffer will join the Environmental Protection Agency's Deputy Regional Administrator and
representatives of environmental and community groups for a morning press conference.

Source: U.S. Department of Justice

50 Based on this news release, which of the following conclusions is most valid?

F The U.S. government has a minimal role in environmental issues.

G The U.S. government and other groups are cooperating to minimize the effects of industrial pollution on the environment.

H Lobbyists have not attempted to pressure the government to enforce existing environmental regulations.

J Industries continue to adhere to government regulations that protect the environment.

GO ON

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

African American Population in Selected Cities, 1910–1930

	1910	1920	1930	Increase, 1910–1930
Chicago	44,103	109,458	233,903	430%
Cleveland	8,448	34,451	71,899	751%
Detroit	5,741	40,838	120,066	1,991%
New York City	91,709	152,467	327,706	257%
Philadelphia	84,459	134,229	219,599	160%
Pittsburgh	25,623	37,725	54,983	115%

Source: University of Missouri, Kansas City School of Law

51   According to the table, the northern city that experienced the largest percentage growth of African American population from 1910 to 1930 was —

   A   Cleveland

   B   New York City

   C   Pittsburgh

   D   Detroit

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

Chinatown, San Francisco, California

Source: CORBIS

52 Which of the following themes does the photograph above illustrate?

   F The United States closes its borders to immigrants.

   G Americans are resistant to Asian businesses.

   H Immigration leads to ethnic neighborhoods in U.S. cities.

   J The United States experiences a decline in Asian immigration.

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

- Commander of the Continental army

- President of the Constitutional Convention

- First president of the United States

53 The person described in the list above is —

   A Thomas Jefferson

   B Benjamin Franklin

   C George Washington

   D John Adams

GO ON

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

```
   ( Martin Luther King, Jr. )          ( Malcolm X )
                      \           /
                       \         /
                        (  ?  )
                       /         \
                      /           \
   ( Stokely Carmichael )          ( Medgar Evers )
```
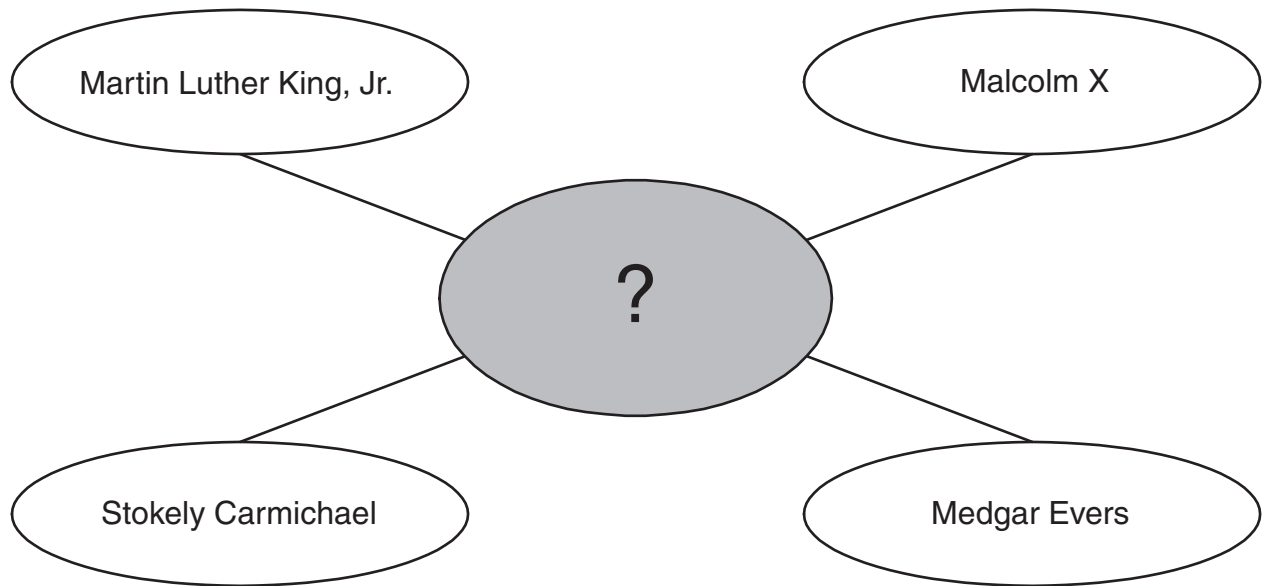
54 Which of the following completes the diagram?

    F Representatives of the American Indian movement

    G Founders of the American Civil Liberties Union

    H Leaders of the Civil Rights movement

    J Leaders of the U.S. labor movement

55 Susan B. Anthony worked for a constitutional amendment that would —

    A end slavery

    B give women the right to vote

    C protect the rights of African Americans

    D allow women to serve in the military

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

STOP

SCIENCE

FORMULA CHART

Density = $\dfrac{\text{mass}}{\text{volume}}$	$D = \dfrac{m}{v}$
$\left(\begin{array}{c}\text{heat gained}\\\text{or lost}\end{array}\right) = \left(\begin{array}{c}\text{mass in}\\\text{grams}\end{array}\right)\left(\begin{array}{c}\text{change in}\\\text{temperature}\end{array}\right)\left(\begin{array}{c}\text{specific}\\\text{heat}\end{array}\right)$	$Q = (m)(\Delta T)(C_p)$
Speed = $\dfrac{\text{distance traveled}}{\text{time}}$	$v = \dfrac{d}{t}$
Acceleration = $\dfrac{\text{final velocity} - \text{initial velocity}}{\text{change in time}}$	$a = \dfrac{v_f - v_i}{\Delta t}$
Momentum = mass $\times$ velocity	$p = mv$
Force = mass $\times$ acceleration	$F = ma$
Work = force $\times$ distance	$W = Fd$
Power = $\dfrac{\text{work}}{\text{time}}$	$P = \dfrac{W}{t}$
% efficiency = $\dfrac{\text{work output}}{\text{work input}} \times 100$	$\% = \dfrac{W_O}{W_I} \times 100$
Kinetic energy = $\dfrac{1}{2}$ (mass $\times$ velocity^2)	$KE = \dfrac{mv^2}{2}$
Gravitational potential energy = mass $\times$ acceleration due to gravity $\times$ height	$PE = mgh$
Energy = mass $\times$ (speed of light)^2	$E = mc^2$
Velocity of a wave = frequency $\times$ wavelength	$v = f\lambda$
Current = $\dfrac{\text{voltage}}{\text{resistance}}$	$I = \dfrac{V}{R}$
Electrical power = voltage $\times$ current	$P = VI$
Electrical energy = power $\times$ time	$E = Pt$

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

Periodic Table of the Elements

Key:
- Atomic number — 14
- Symbol — **Si**
- Atomic mass — 28.086
- Name — Silicon

Mass numbers in parentheses are those of the most stable or most common isotope.

Group 1 IA	2 IIA	3 IIIB	4 IVB	5 VB	6 VIB	7 VIIB	8 VIII	9 VIII	10	11 IB	12 IIB	13 IIIA	14 IVA	15 VA	16 VIA	17 VIIA	18 VIIIA
1 **H** 1.008 Hydrogen																	2 **He** 4.0026 Helium
3 **Li** 6.941 Lithium	4 **Be** 9.012 Beryllium											5 **B** 10.81 Boron	6 **C** 12.011 Carbon	7 **N** 14.007 Nitrogen	8 **O** 15.999 Oxygen	9 **F** 18.998 Fluorine	10 **Ne** 20.179 Neon
11 **Na** 22.990 Sodium	12 **Mg** 24.305 Magnesium											13 **Al** 26.982 Aluminum	14 **Si** 28.086 Silicon	15 **P** 30.974 Phosphorus	16 **S** 32.066 Sulfur	17 **Cl** 35.453 Chlorine	18 **Ar** 39.948 Argon
19 **K** 39.098 Potassium	20 **Ca** 40.08 Calcium	21 **Sc** 44.956 Scandium	22 **Ti** 47.88 Titanium	23 **V** 50.942 Vanadium	24 **Cr** 51.996 Chromium	25 **Mn** 54.938 Manganese	26 **Fe** 55.847 Iron	27 **Co** 58.933 Cobalt	28 **Ni** 58.69 Nickel	29 **Cu** 63.546 Copper	30 **Zn** 65.39 Zinc	31 **Ga** 69.72 Gallium	32 **Ge** 72.61 Germanium	33 **As** 74.922 Arsenic	34 **Se** 78.96 Selenium	35 **Br** 79.904 Bromine	36 **Kr** 83.80 Krypton
37 **Rb** 85.468 Rubidium	38 **Sr** 87.62 Strontium	39 **Y** 88.906 Yttrium	40 **Zr** 91.224 Zirconium	41 **Nb** 92.906 Niobium	42 **Mo** 95.94 Molybdenum	43 **Tc** (98) Technetium	44 **Ru** 101.07 Ruthenium	45 **Rh** 102.906 Rhodium	46 **Pd** 106.42 Palladium	47 **Ag** 107.868 Silver	48 **Cd** 112.41 Cadmium	49 **In** 114.82 Indium	50 **Sn** 118.71 Tin	51 **Sb** 121.763 Antimony	52 **Te** 127.60 Tellurium	53 **I** 126.904 Iodine	54 **Xe** 131.29 Xenon
55 **Cs** 132.905 Cesium	56 **Ba** 137.33 Barium	57 **La** 138.906 Lanthanum	72 **Hf** 178.49 Hafnium	73 **Ta** 180.948 Tantalum	74 **W** 183.84 Tungsten	75 **Re** 186.207 Rhenium	76 **Os** 190.23 Osmium	77 **Ir** 192.22 Iridium	78 **Pt** 195.08 Platinum	79 **Au** 196.967 Gold	80 **Hg** 200.59 Mercury	81 **Tl** 204.383 Thallium	82 **Pb** 207.2 Lead	83 **Bi** 208.980 Bismuth	84 **Po** (209) Polonium	85 **At** (210) Astatine	86 **Rn** (222) Radon
87 **Fr** (223) Francium	88 **Ra** 226.025 Radium	89 **Ac** 227.028 Actinium	104 **Rf** (261) Rutherfordium	105 **Db** (262) Dubnium	106 **Sg** (263) Seaborgium	107 **Bh** (262) Bohrium	108 **Hs** (265) Hassium	109 **Mt** (266) Meitnerium	110 (269)								

Lanthanide Series

58 **Ce** 140.12 Cerium	59 **Pr** 140.908 Praseodymium	60 **Nd** 144.24 Neodymium	61 **Pm** (145) Promethium	62 **Sm** 150.36 Samarium	63 **Eu** 151.97 Europium	64 **Gd** 157.25 Gadolinium	65 **Tb** 158.925 Terbium	66 **Dy** 162.50 Dysprosium	67 **Ho** 164.930 Holmium	68 **Er** 167.26 Erbium	69 **Tm** 168.934 Thulium	70 **Yb** 173.04 Ytterbium	71 **Lu** 174.967 Lutetium

Actinide Series

90 **Th** 232.038 Thorium	91 **Pa** 231.036 Protactinium	92 **U** 238.029 Uranium	93 **Np** 237.048 Neptunium	94 **Pu** (244) Plutonium	95 **Am** (243) Americium	96 **Cm** (247) Curium	97 **Bk** (247) Berkelium	98 **Cf** (251) Californium	99 **Es** (252) Einsteinium	100 **Fm** (257) Fermium	101 **Md** (258) Mendelevium	102 **No** (259) Nobelium	103 **Lr** (262) Lawrencium

Revised October 15, 2001

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

GO ON
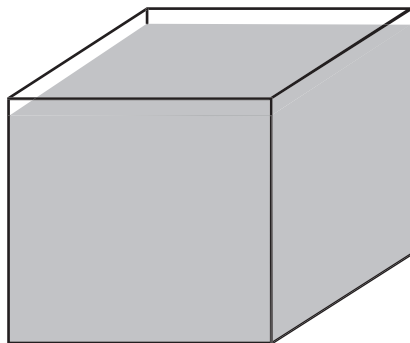
Mass = 40 g

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.

STOP

Adult Onset Diabetes?
Here's something better than
your present diabetes pill!

Glycotac has been proved to lower blood sugar more than other leading brands of medication.

When dieting and exercise don't lower your blood sugar enough, adding Glycotac may help. You may even be able to take less medication to control your blood sugar.

Important Information:

Glycotac is not for everybody. If you have kidney problems, in rare cases Glycotac may cause abnormally low blood pH and may even cause death. Avoid taking this drug if you are 75 or older, are taking medication for heart disease, or have a severe infection.

Ask your doctor about new Glycotac and whether it may be right for you. Live life to the fullest.

For more information, call 1-877-555-7777.

1 Which conclusion can reasonably be made about Glycotac based on the promotional brochure?

   A   All people with diabetes can safely use the product.

   B   Glycotac is guaranteed to lower blood sugar in people without health problems.

   C   Using the product may lower blood-sugar levels.

   D   Glycotac eliminates the need to exercise to control high blood sugar.

2 Species of the genus *Toxicodendron*, which includes poison ivy and poison oak, produce a gummy oil that causes a severe itchy rash in some animals. This substance is part of the *Toxicodendron* species' —

   F   defense mechanisms

   G   nutritional processes

   H   support system

   J   clinging ability

GO ON

Style
Stigma
Filament
Anther
Petal
Ovary
Receptacle
Sepal
Pedicel
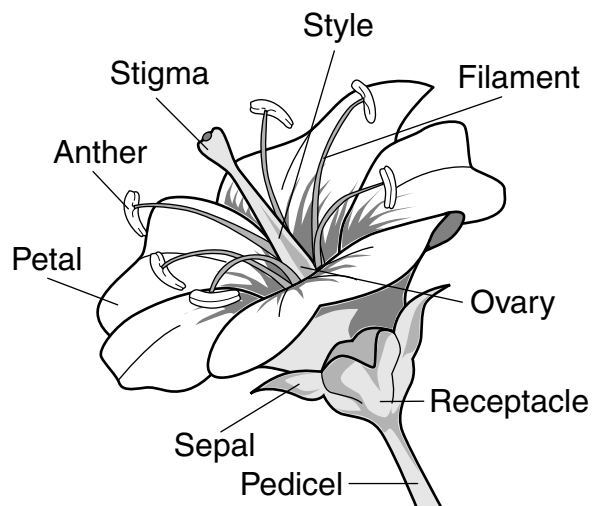
3 The diagram illustrates the parts of this flower. Which of these parts are not directly involved in sexual reproduction?

   A Stigma and style

   B Sepal and pedicel

   C Anther and filament

   D Receptacle and ovary

Students placed equal amounts of bread mold on 12 identical agar plates containing the same amounts and types of nutrients. Four plates were kept at 0°C, four were kept at 45°C, and four were kept at 22°C (room temperature). The plates were examined after five days.

---

4 Which of the following was probably the hypothesis for this experiment?

   F The growth of bread mold increases as temperature increases.

   G The type of nutrient causes bread mold to grow faster at higher temperatures.

   H The size of the plates determines the temperature of bread mold.

   J The temperature of bread mold is determined by the mold's growth.

Spring Stretch

Force (N)	ΔL (cm)
0.98	3.5
1.96	7.0
2.94	10.5

5 According to the data in the table, about how far can a spring be expected to stretch when a force of 3.92 N is applied?

   A 10.5 cm

   B 13.6 cm

   C 14.0 cm

   D 17.3 cm

GO ON

Use the information below and your knowledge of science to answer questions 6–8.

Moon Chemistry

Samples collected by Apollo astronauts have provided new data about the moon. Some of these samples consisted of lunar soil, a fine-grained, sand-like material produced as a result of the destruction of moon rocks. Traces of beryllium-10 were found in the samples. Beryllium-10 is carried by the solar wind, which transports elements from the sun's surface and deposits them on the moon.

The solar wind may also result in the formation of new substances. Tiny teardrops of iron and specks of molybdenum were found inside the particles of lunar soil. This is interesting because these elements have not been found in an uncombined state on Earth. The metal oxides they originally were part of were possibly changed when bombarded by the positively charged particles of the solar wind.

Another interesting find was tiny (1 to 3 micrometers in length) crystals of silver sulfide. Because similar particles are found on Earth, it has been hypothesized that these crystals were created at a time when the moon had a molten core.

6 Which procedure is best to use when determining the density of a rock?

   F Place the rock in a water-filled beaker and find the height at which the rock floats above the water.

   G Use a ruler to measure the rock's dimensions and then find its mass using an analytical balance.

   H Measure the mass of the rock on a balance and then find the volume of water it displaces in a graduated cylinder.

   J Place the rock in three liquids with different known densities and observe which liquid the rock floats in.

7 Which process in the rock cycle is most likely responsible for moon rocks being converted to lunar soil?

   A Metamorphism

   B Weathering

   C Sedimentation

   D Volcanism

8 The moon's surface becomes hot during the long lunar day because the sun transfers heat to the moon. This heat transfer is accomplished almost entirely through the process of —

   F convection

   G refraction

   H conduction

   J radiation
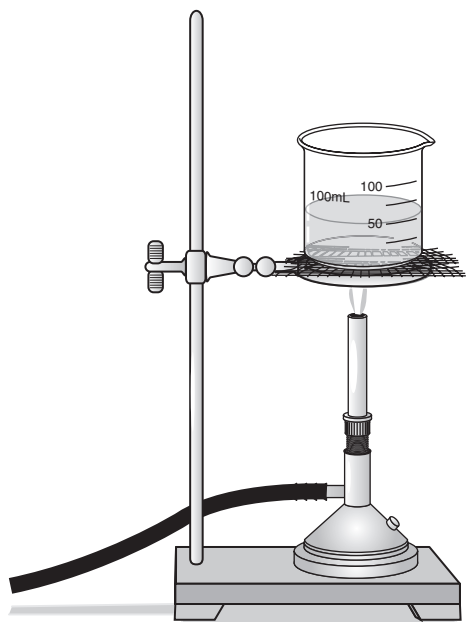
9 All of these procedures must be followed when using the setup shown above except —

A putting on safety goggles

B handling the beaker with tongs

C securing loose clothing

D wearing rubber gloves

10 Elements in Group 16 of the periodic table usually —

F form large molecules

G gain electrons when bonding

H act like metals

**J** solidify at room temperature

Effects of Pesticides
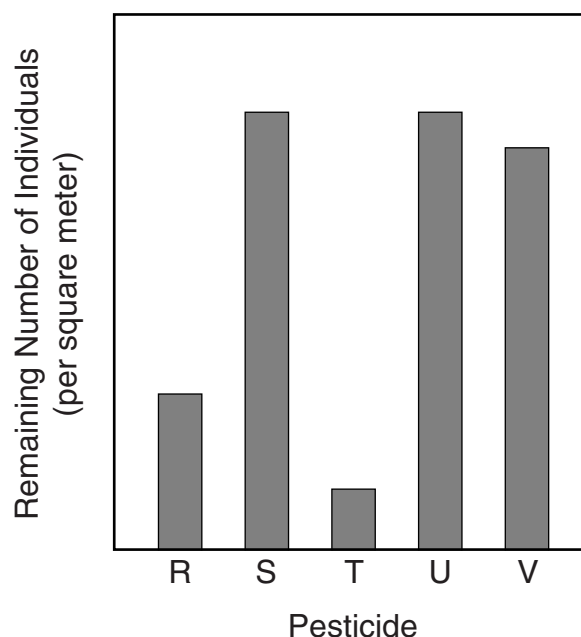
11 The graph shows the results of a study testing chemical pesticides on a pest species common to cotton plants. Different chemical pesticides were used in five different areas. According to these results, which of the following is the most effective chemical for controlling this pest species?

A R

B S

C T

D V

12 Which of the following is an example of solar energy being converted into chemical energy?

F Plants producing sugar during the day

G Water evaporating and condensing in the water cycle

H The sun unevenly heating Earth's surface

J Lava erupting from volcanoes for many days

GO ON
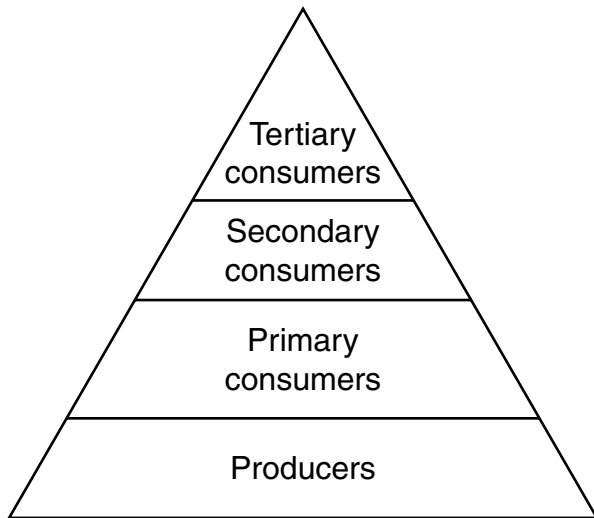
13 In this food pyramid, which level contains the greatest amount of energy?

    A Tertiary consumers

    B Secondary consumers

    C Primary consumers

    D Producers

14 Which of the following factors helps spread disease-causing bacteria?

    F Low temperatures

    G Access to new hosts

    H Mutation by heat energy

    J Availability of light

Body Length of Mosquitoes in a Specific Area
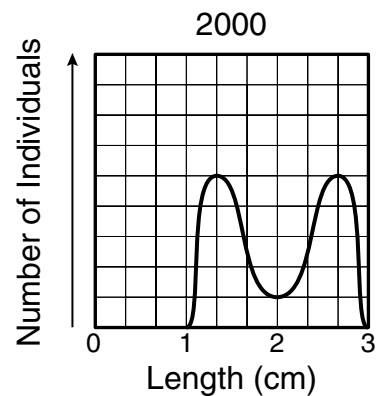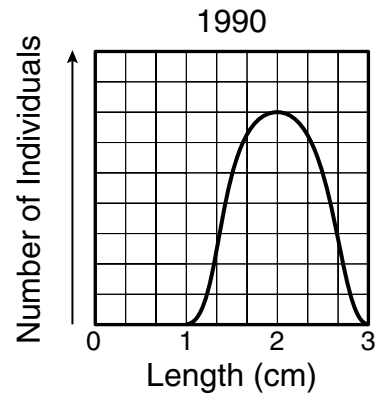
15 Which of these conclusions can be made based on the graphs shown above?

    A Larger mosquitoes have migrated into the area.

    B Smaller mosquitoes are being eaten by larger mosquitoes.

    C A mosquito length of 2 cm has become a disadvantage in this environment.

    D Mosquitoes with a body length of 3 cm have the longest life span.

GO ON

Habitat	Productivity (g/m²/yr)	Bird Diversity (average number of species/km²)
Marsh	2000	14
Grassland	500	12
Shrub land	600	8
Desert	70	3
Coniferous forest	800	17
Upland deciduous forest	1000	21
Floodplain deciduous forest	2000	24

16 Which question could be formed based on these data?

   F What types of plants have increased productivity in different habitats?

   G Is there a relationship between productivity and bird diversity in a habitat?

   H How does the number of birds in a population affect habitats?

   J Do habitats display changes in productivity and bird diversity during different seasons?

17 Which situation best represents a mutualistic relationship?

   A A tapeworm absorbing nutrients from the intestine of a dog

   B An orchid being pollinated by a nectar-collecting wasp

   C A human losing blood to a feeding mosquito

   D An armadillo rooting in the soil at the base of an oak tree

18 Why are photosynthesis and cellular respiration often considered opposites?

   F Photosynthesis produces twice as many ATP molecules as cellular respiration does.

   G Water is released during photosynthesis and consumed during cellular respiration.

   H Photosynthesis occurs during the day, and cellular respiration occurs at night.

   J Oxygen is produced during photosynthesis and used during cellular respiration.

Mass Measurements of a Platinum Cylinder

Balance	First Measure (g)	Second Measure (g)	Third Measure (g)	Fourth Measure (g)
Q	24.94	25.26	25.29	24.51
R	25.50	24.50	25.00	24.49
S	24.99	24.99	25.20	25.92
T	24.99	25.03	24.98	25.02

19 The table shows four mass readings of one object as measured by four different balances. Which balance produced the most-consistent measurements?

A Q

B R

C S

D T

Start

Stop
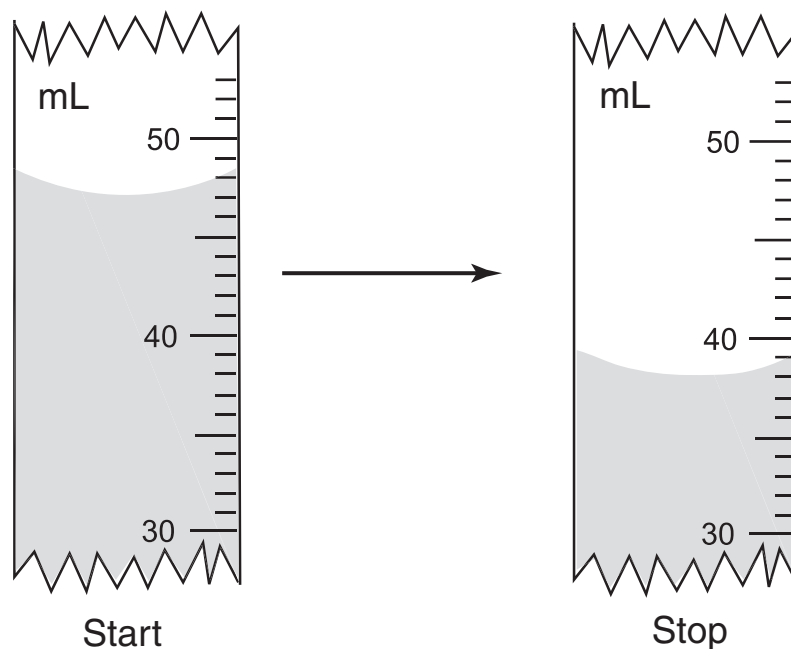
20 The illustration shows volume levels of a liquid in a graduated cylinder before and after a sample was removed. According to this information, what was the volume of the sample to the nearest milliliter? Record and bubble in your answer on the answer document.

GO ON

Amino Acid Composition of Cytochrome c in Some Organisms

Amino Acid	Fruit Fly	Screwworm Fly	Hornworm Moth	Silkworm Moth
Alanine	10%	10%	10%	10%
Arginine	4%	4%	4%	4%
Aspartic acid	6%	6%	6%	6%
Cysteine	6%	6%	6%	4%
Glutamic acid	12%	12%	8%	8%
Glycine	4%	2%	4%	4%
Valine	2%	1%	4%	6%

21 The table shows an amino acid comparison of cytochrome c, a protein involved in cellular respiration in aerobic organisms. The two organisms in the table that are least genetically related are the —

A silkworm moth and the fruit fly

B silkworm moth and the screwworm fly

C fruit fly and the screwworm fly

D fruit fly and the hornworm moth

22 Mutations in DNA molecules can occur when —

F replication of DNA is exact

G a DNA enzyme attaches to an RNA codon

H RNA codons are replaced by DNA nucleotides

J a change occurs in DNA nucleotide bases

$$Al^{3+} \quad SO_4^{2-}$$

23 According to this information, what is the chemical formula for aluminum sulfate?

A $AlSO_4$

B $Al_2(SO_4)_3$

C $Al_3(SO_4)_2$

D Al_6SO_4

24 Bathwater normally has electrolytic behaviors even though distilled water does not. This is because bathwater —

F contains isotopes of hydrogen

G has been heated

H is separated into H^+ and OH^- ions

J contains dissolved minerals

Avery and Associates' Investigation with *Pneumococcus*

1. Prepare suspension of living R bacteria

+

2. Kill S bacteria and prepare cell-free extract

→

3. Mix suspension of living R bacteria with cell-free extract from heat-killed S bacteria; then culture

→

4. Both R and S colonies grow
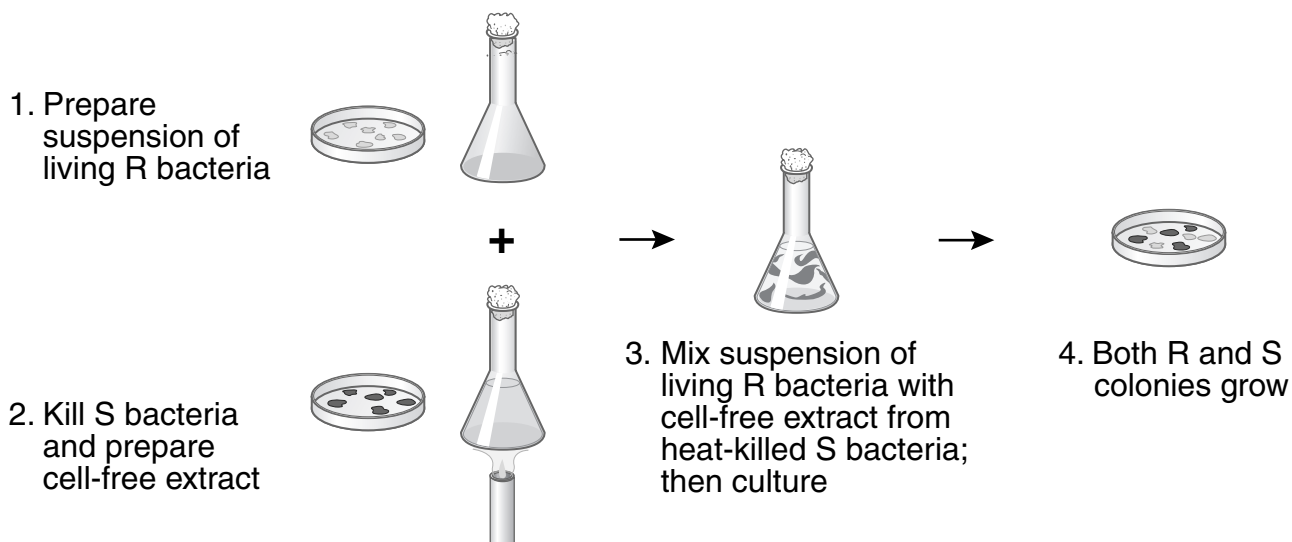
25 Which of the following best describes the question this set of procedures was designed to answer?

    A Can a substance from dead bacteria transform living bacteria?

    B Can R bacterial cells survive heating?

    C Can dead bacterial cells confer immunity to a living host?

    D Can bacterial cells be isolated from a healthy host?

26 Fish survive through severe winters because of the property of water that allows water to —

    F form chemical bonds as it freezes, raising the water temperature below the ice

    G increase in density while it freezes, dissolving more oxygen from the air

    H expand when it freezes, creating a floating and insulating layer of ice

    J precipitate vital nutrients when it freezes, increasing the food supply

GO ON
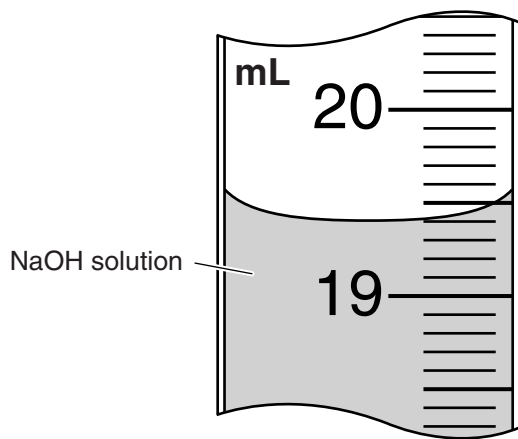
Section of pipette

NaOH solution

27 This pipette is filled with a 20% NaOH solution. The solution is at 20°C and has a density of 1.23 g/mL. According to this information, what is the mass of this NaOH solution?

    A 3.88 g

    B 15.7 g

    C 23.9 g

    D 24.6 g

28 When a person is frightened by a wild animal, some organ systems immediately become active, while others are suppressed. Which of these systems is likely to be suppressed?

    F Muscular system

    G Respiratory system

    H Endocrine system

    J Digestive system

$$CaCO_3 \xrightarrow{\text{heat}} CaO + CO_2$$

29 The chemical equation shows $CaCO_3$ being heated. Which of these statements best describes the mass of the products if 100 g of $CaCO_3$ is heated?

    A The difference in the products' masses is equal to the mass of the $CaCO_3$.

    B The sum of the products' masses is less than the mass of the $CaCO_3$.

    C The mass of each product is equal to the mass of the $CaCO_3$.

    D The sum of the products' masses equals the mass of the $CaCO_3$.

GO ON

Q — Live fish
No cover

R — Shield to hide smell

S — Chopped bait
No electrical cues

T — Electrical insulation
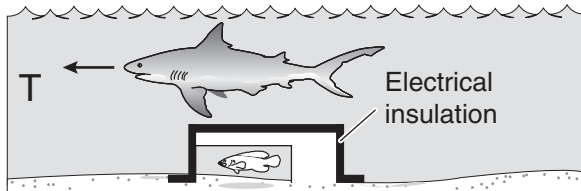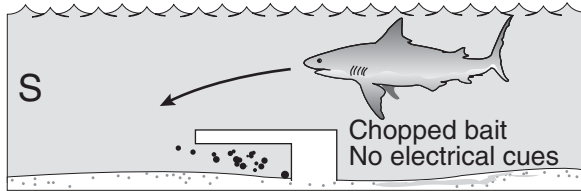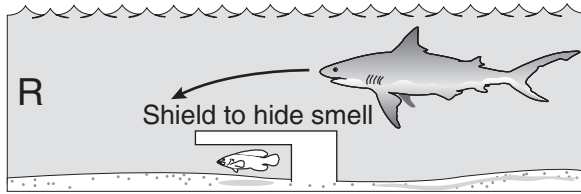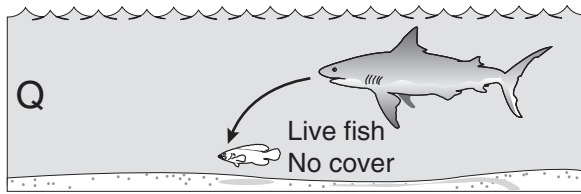
30 The diagram shows different setups of an experiment to determine how sharks find their prey. Which experimental setup is the control?

    F Q

    G R

    H S

    J T

31 The kingdom Animalia includes all of these except —

    A jellyfish

    B sponges

    C amoebas

    D roundworms

GO ON

32 Which chemical equation supports the law of conservation of mass?

F $2H_2O(l) \rightarrow H_2(g) + O_2(g)$

G $Zn(s) + HCl(aq) \rightarrow ZnCl_2(aq) + H_2(g)$

H $Al_4C_3(s) + H_2O(l) \rightarrow CH_4(g) + Al(OH)_3(s)$

J $CH_4(g) + 2O_2(g) \rightarrow CO_2(g) + 2H_2O(g)$
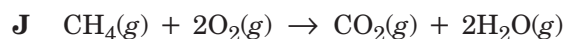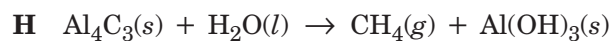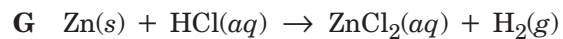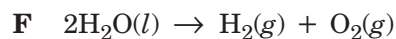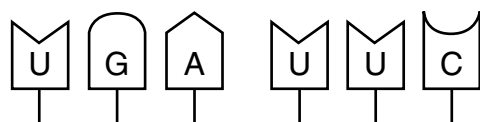
mRNA Section

33 Which of these represents the DNA segment from which this section of mRNA was transcribed?

A ACTAAG

B TCUTTG

C GAAUCU

D UCCTGA

34 A certain commercial product used for cleaning ovens must be handled with rubber gloves. The product is slippery and turns litmus paper blue. It probably contains —

F an acid

G a base

H a salt

J an isotope

GO ON

Enzyme X   Enzyme Y   Enzyme Z

Base substance → Ornithine → Citrulline → Arginine
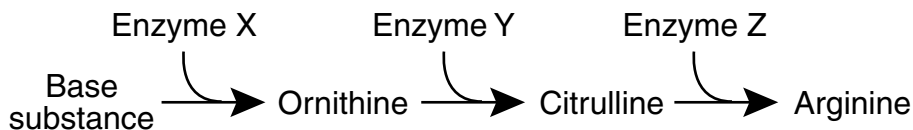
35 This diagram shows the biochemical pathway that produces arginine in *Neurospora*, a mold. *Neurospora* is easily grown on a simple jelly-like medium. Different substances can be added to the medium. A mutant *Neurospora* lacking Enzyme Y would have to have which of these added to its medium in order to survive?

    A   Enzyme X

    B   Ornithine

    C   Enzyme Z

    D   Citrulline

36 Coat color in mice varies greatly, ranging from black to grizzly gray, black-and-white, spotted, or white. The nucleus from a body cell of a grizzly-gray mouse is fused with an egg from a black mouse from which the nucleus has been removed. The egg begins to divide and is then transplanted into a female white mouse. What will be the most likely coat color of the offspring?

    F   Black

    G   Black with white spots

    H   Grizzly gray

    J   White

$$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$$

Glucose	Oxygen	Carbon dioxide	Water
3000 kJ	300 kJ	200 kJ	150 kJ
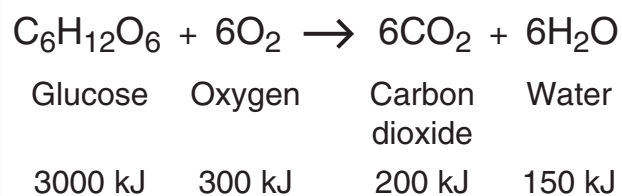
37 Why is the sum of the products' energy in this reaction less than the sum of the reactants' energy?

    A   Energy is given off as heat.

    B   The products absorb available energy.

    C   Energy is trapped in the reactants.

    D   The reactants' energy is less than the melting point of glucose.

GO ON

Calcium (Ca^{2+}) + Chloride (Cl^-) $\rightarrow$ Calcium chloride
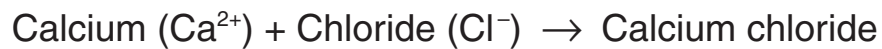
38 The chemical formula for calcium chloride is —

   F Ca_2Cl

   G $CaCl$

   H $CaCl_2$

   J Ca_2Cl_3

39 Over time an open soft drink will lose carbonation (dissolved CO_2). Which of these allows the CO_2 to remain in solution the longest?

   A Reduced air pressure

   B Exposure to direct sunlight

   C Increased air currents

   D Cooler temperatures

GO ON

$$2Cu + O_2 \rightarrow 2CuO$$
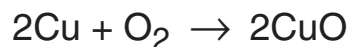
40 When 127 g of copper reacts with 32 g of oxygen gas to form copper (II) oxide, no copper or oxygen is left over. How much copper (II) oxide is produced?

    F   32 g

    G   95 g

    H   127 g

    J   159 g

41 Which of these is the best description of the action-reaction force pair when the space shuttle lifts off from the launchpad?

    A   The ground pushes the rocket up while exhaust gases push down on the ground.

    B   Exhaust gases push down on air while the air pushes up on the rocket.

    C   The rocket pushes exhaust gases down while the exhaust gases push the rocket up.

    D   Gravity pulls the rocket exhaust down while friction pushes up against the atmosphere.

42 In which container is the substance unable to transfer heat by convection?
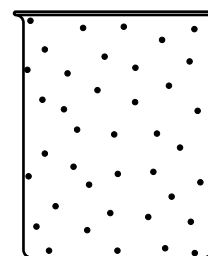
F
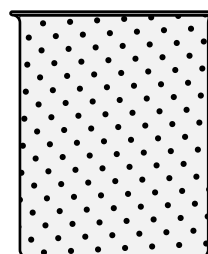
Chlorine

G
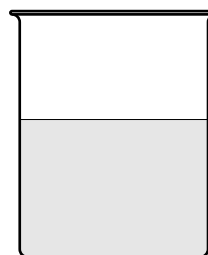
Water

H

Air

J

Aluminum

Initial Velocity of Ball (m/s)	Calculated Distance (m)	Actual Distance (m)
2.0	0.52	0.51
4.0	2.07	2.01
8.0	8.30	7.90

Mass of metal ball: 0.066 kg
Vertical height off ground, h: 0.89 m

43 A catapult was designed to project a small metal ball at a target. The resulting data are shown in the table. Which of these might explain the difference between the calculated and actual distances?

   A The ball landed short of the calculated distance because of an increase in momentum.

   B Air resistance caused the ball to land short of the calculated distance.

   C Initial mass of the ball changed with each trial.

   **D** The metal ball was too small for accurate measurements to be made.

44 Viruses differ from bacteria in that all viruses —

   F cause insect-borne diseases

   G can be destroyed by antibiotics

   H have rigid cell walls

   J must be reproduced in living cells

45 In West Texas and Southern California, high winds drive turbines that generate electricity. One advantage that wind energy has over energy generated from solar cells is that wind energy —

   A is plentiful everywhere

   B can be generated at night

   C produces cleaner energy

   D is free of environmental hazards

GO ON

**46** Which lever arrangement requires the least effort force to raise a 500 N resistance?

F

H

G

J

Boiling Point of Alcohols
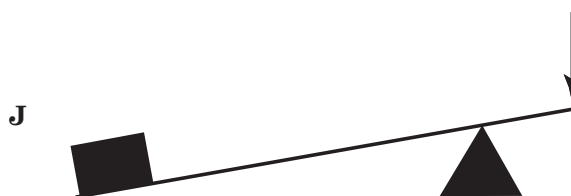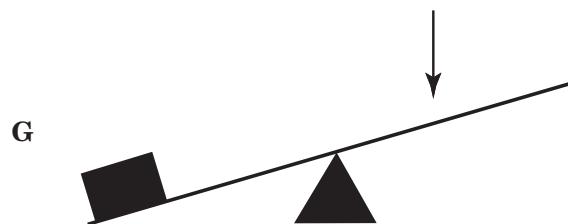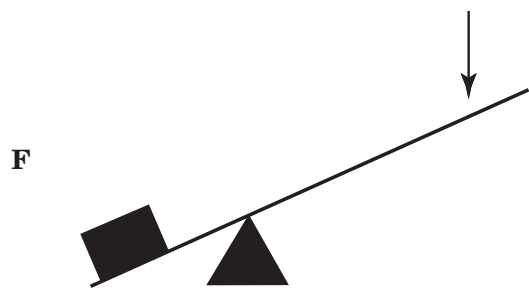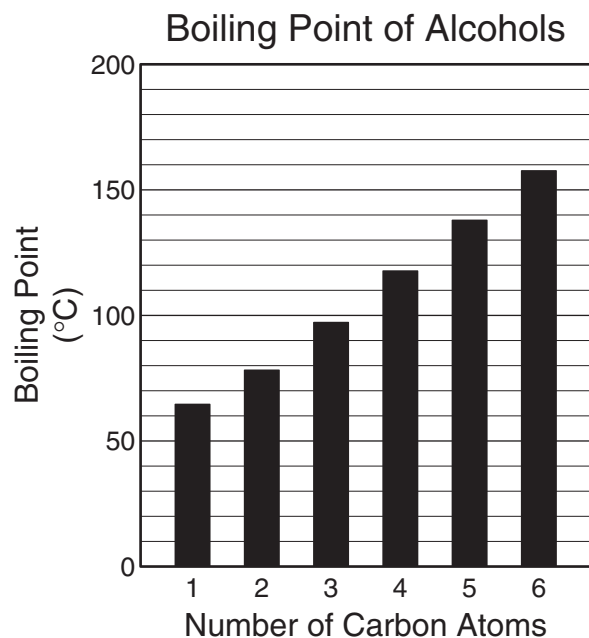
47 According to this information, what is the best prediction for the boiling point of the seven-carbon alcohol?

A 169°C

B 178°C

C 186°C

D 192°C

48 An inventor claims to have created an internal combustion engine that converts 100 kJ of chemical energy from diesel fuel to 140 kJ of mechanical energy. This claim violates the law of conservation of —
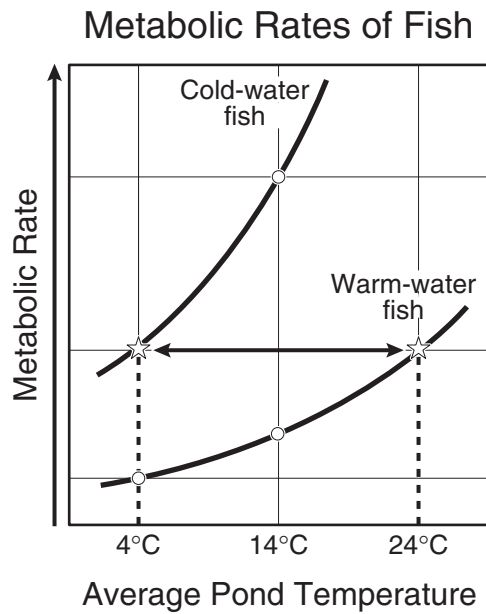
F momentum

G inertia

H energy

J mass

GO ON

Decay of a 10-Gram Sample of Carbon-14

Mass of Remaining Carbon-14 (grams) vs **Time (thousands of years)**
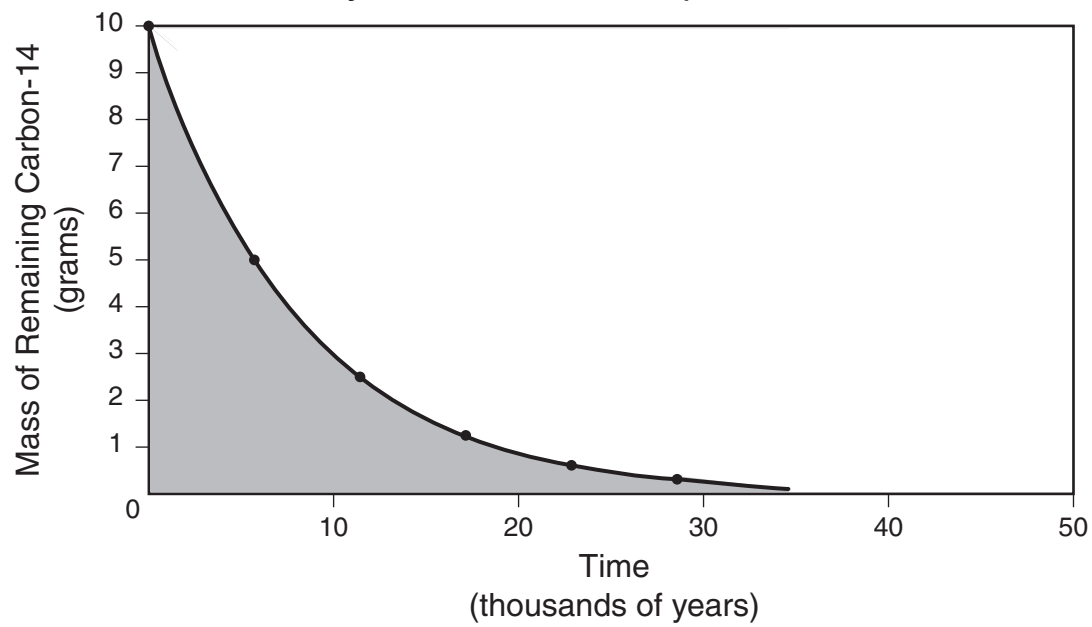
49 According to the graph, what is the approximate half-life of carbon-14?

A 5.7 years

B 5,700 years

C 23,000 years

D 1,000,000 years

Metabolic Rates of Fish

50 The graph shows metabolic rates for two types of fish at different environmental temperatures. Which of the following conclusions can be drawn from these data?

F Fish metabolism responds to temperature changes.

G Metabolic rates decrease as environmental temperatures increase.

H Fish body temperature results from high metabolism.

J Metabolic rates are independent of environmental temperature.
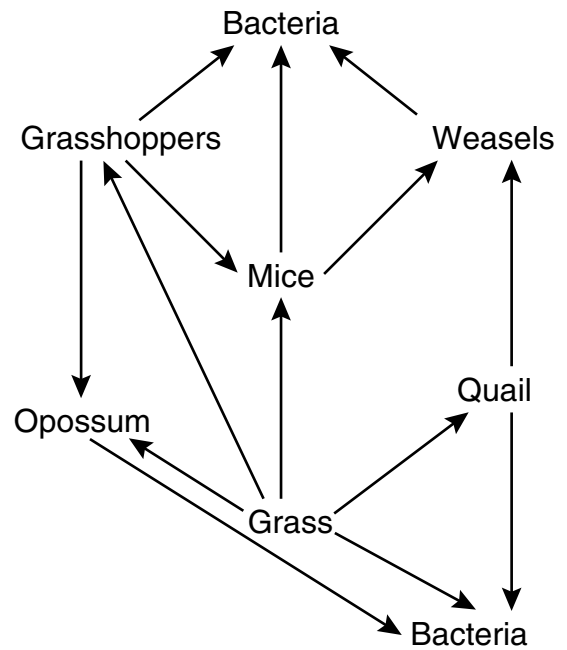
51 In this food web, the bacteria probably function as —

A producers

B herbivores

C decomposers

D carnivores

GO ON

Solar Radiation and Earth

Effect	Amount of Energy per Second (terajoules)
Solar radiation reaching Earth	173,410
Radiation reflected back into space	52,000
Radiation heating atmosphere, landmasses, and oceans	81,000
Radiation producing winds and ocean currents	370
Radiation used in photosynthesis	40
Radiation resulting in evaporation of water	?

52 Assuming the chart contains all energy transformations in the Earth system, how much solar radiation goes toward evaporating water?

F 40,000 terajoules

G 92,410 terajoules

H 121,410 terajoules

J 133,410 terajoules

Phylum	Characteristics
Porifera	Asymmetrical, numerous pores, lacks tissues and organs
Annelida	Long segmented body, bilaterally symmetrical
Mollusca	Soft body consisting of foot, visceral mass, and mantle
Arthropoda	Segmented body, jointed legs, exoskeleton
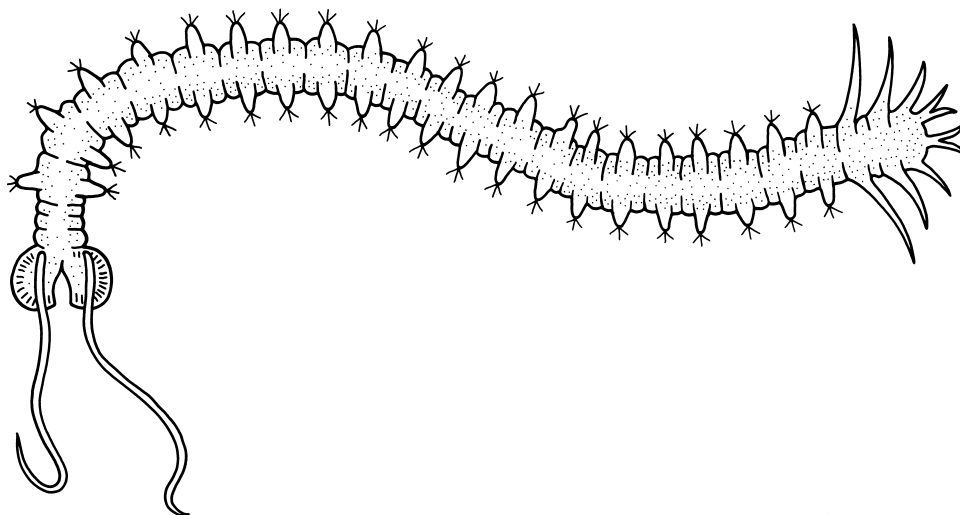
53 This animal most likely belongs to phylum —

    A   Porifera

    B   Annelida

    C   Mollusca

    D   Arthropoda

Lift Height

2.04 m

0.00 m
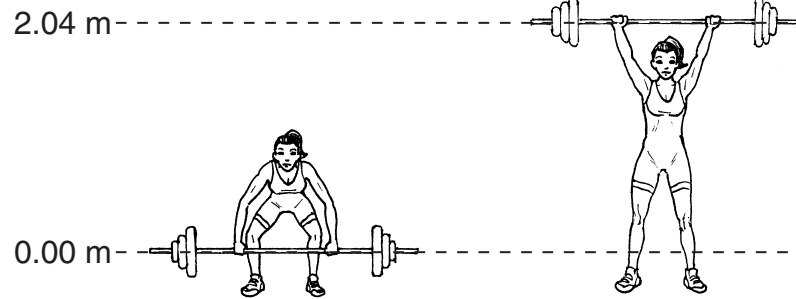
54 The weight lifter used a force of 980 N to raise the barbell over her head in 5.21 seconds. Approximately how much work did she do in raising the barbell?

F 380 J

G 982 J

H 2,000 J

J 10,000 J

55 The pitch of a sound made by plucking a guitar string is determined by the —

A frequency of the vibration produced

B strength of the plucking force

C distance between the strings

D shape of the guitar body

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

STOP

TAKS EXIT LEVEL
SPRING 2004