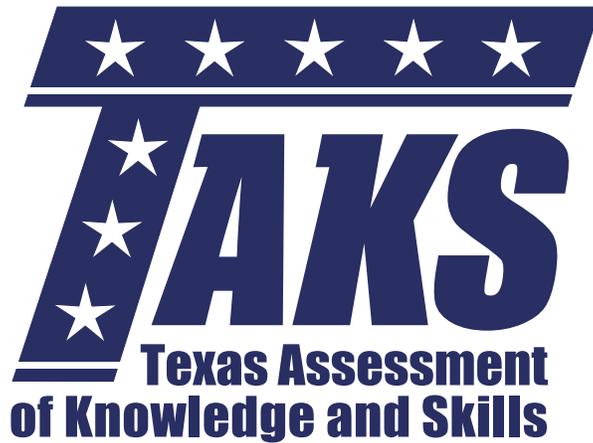


STUDENT NAME _____



**EXIT LEVEL
ENGLISH LANGUAGE ARTS
MATHEMATICS
SOCIAL STUDIES
SCIENCE**

Administered July 2004

READING AND WRITTEN COMPOSITION

DIRECTIONS

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

The Kayak

by Debbie Spring

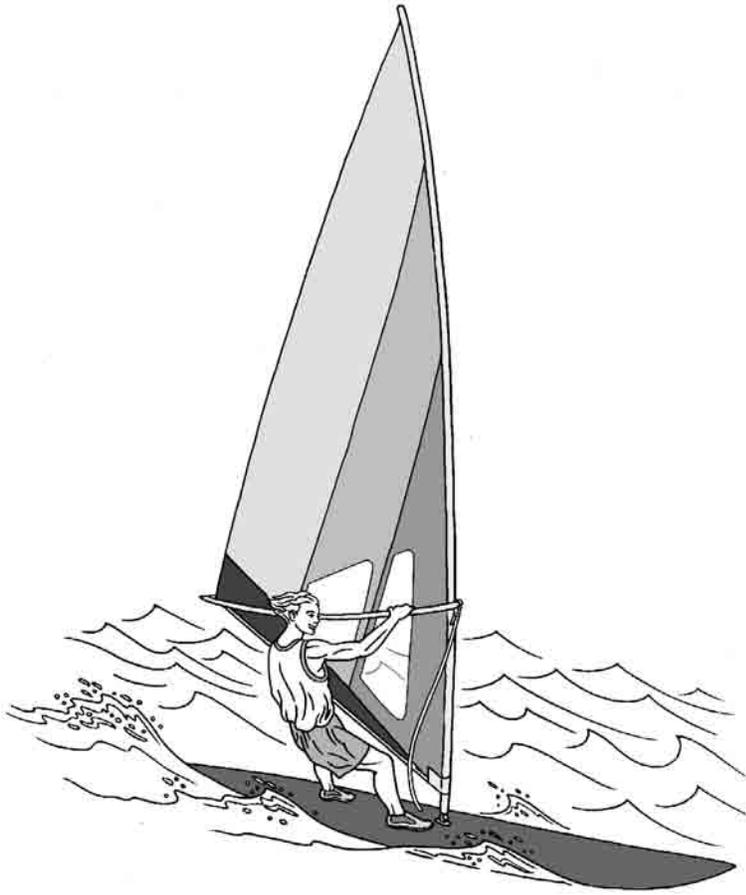
- 1 The choppy waves rise and fall. I ride the wave. My kayak¹ bobs like a cork in the swirling waters of Georgian Bay.² I love it. I feel wild and free. The wind blows my hair into my eyes. I concentrate on my balance. *It's more difficult now.* I stop stroking with my double-bladed paddle and push my bangs from my face.
- 2 This is my special place. Out here, I feel safe and secure. My parents watch from the shore. I have on my life jacket and emergency whistle. I am one with the kayak. The blue boat is an extension of my legs. I can do anything; I can go anywhere. Totally independent. Totally in control of my life. It's so different back on shore.
- 3 I approach Cousin Island, where I have to steer around the submerged rocks in the shallows, a school of largemouth bass darts between the weeds. A wave pushes me towards the rocks. I push off with my paddle and I head out towards the middle of Kilcoursie Bay. Powerful swirls of wind and current toss me about.
- 4 The clouds move in, warning signs. I turn the kayak and head back to the shore. The waves peak wildly as the storm picks up. My arms ache.
- 5 I don't want to go back to shore. Nobody lets me grow up. My parents treat me like a baby. I'm sixteen, too old to be pampered.
- 6 Just off my bow, a loon preens its black mottled feathers. It sounds its piercing cry and disappears under the water. I hold my breath, waiting for it to resurface. Time slows. Finally, it reappears in the distance. I exhale.
- 7 I notice a windsurfer³ with a flashy neon green and purple sail, gaining on me. My stomach does flip flops as he races, dangerously close. "Look out," I yell. I quickly steer out of the way. He just misses me. *Stupid kid, he's not even wearing a life jacket.* I shake my head. The boy is out of control. He's heading straight for the rocks at Cousin Island. "Drop the sail!" I call.

My notes about what I am reading

¹ Kayak: an Eskimo-style canoe that has a small opening in the center for a paddler.

² Georgian Bay: an inlet of Lake Huron, Canada

³ Windsurfer: a term that refers both to a sailboard and to a person who uses one.



8 He does and not a second too soon. He just misses a jagged rock. I slice through the waves and grab onto his white surfboard.

9 “Can you get back to shore?” I ask.

10 “The windsurfer belongs to my buddy. It’s my first time. I don’t know how.” His voice trembles. Is it from the cold?

11 The windsurfer looks around eighteen. I take a quick glance at his tanned muscles and sandy, blond hair. He seems vulnerable and afraid. His blue eyes narrow. “Now what?” he asks.

12 I reach into the cockpit and take out a rope. “Hold on.” I toss the rope. He misses. I throw it again and he catches it. “Paddle to my stern with your hands.” His board moves directly behind me. “Tie the other end through that yellow loop.” I point.

13 He fumbles for what seems like several painful minutes. “Got it.”

14 I stroke hard, straining to move us.

15 “Hit it,” the boy calls.

16 “What?”

- 17 “That’s what you shout, in water skiing, when you’re ready to take off.”
- 18 I smile. Slowly, we make our way. My paddle dips into the water, first to the right, then to the left. Beads of sweat form on my forehead. Suddenly, I surge ahead. I turn around. “You let go.” I circle and give him back the rope. “Wrap it around your wrist.”
- 19 “Sorry.”
- 20 “It’s okay. What’s your name?”
- 21 “Jamie.” His teeth chatter. The water churns around his board. He is soaked. I don’t like the blue colour of his lips.
- 22 “I’m Teresa. Don’t worry, Jamie. It will be slow because we’re going against the current. I promise to get you back in one piece.” It takes too much energy to talk. Instead, I get him chatting. “Tell me about yourself.”
- 23 “I thought I was good at all water sports, but windsurfing sure isn’t one of them,” he laughs.
- 24 I don’t mean to answer. It just comes out. “Maybe with practice.”
- 25 “Dumb to go out so far. I don’t know what I’m doing.” He changes the rope to the other hand, flexing the stiff one.
- 26 The wind changes. A big wave hits Jamie sideways, knocking him into the dark, chilly water. He shoots to the top for air and tangles in my slack rescue rope.
- 27 He is trapped underneath the sail.
- 28 “Jamie!” I scream. The wind swallows my voice. Quickly, I position my boat perpendicular to his board, like a *T*. I drop my paddle, grabbing the top of his sail at the mast. I tug. Nothing. The water on top of the sail makes it heavy. I drop it. I try again. One, two, three, heave. I grunt, as I break the air pocket and lift the sail a couple of inches. It’s enough to let Jamie wriggle out. He explodes to the surface, gulping in air. He pulls himself safely onto the surfboard. I reach over to help untangle the rope from around his foot. I can see an ugly rope burn.
- 29 My kayak starts to tip. I throw my weight to the opposite side to keep from flipping. My heart beats fast. “Keep hold of the rope.”
- 30 “Got it.”
- 31 “Where’s my paddle?” My throat tightens. I search the water. “There it is,” I sigh with relief. It’s floating a few feet away. My hands pull through the water, acting like paddles. I reach out and grab the shaft of my paddle.

- 32 “Hang on, Jamie.” The waves swell. The current changes and we ride the waves like a bucking bronco.
- 33 I have to keep away from shore or the waves will crash us against the granite, splitting us in half. Just as we clear the rocks, a cross current hits me. My kayak flips. I’m sitting upside down in the water. *Don’t panic. Do the Eskimo roll.*⁴ I get my paddle in the ready position. Then I swing the blade away from the boat’s side. I arch my back around through, keeping my head low. I sweep my blade through the water, pulling hard. I right the kayak and gasp for breath.
- 34 “You gave me a heart attack,” Jamie looks white.
- 35 “Caught me by surprise.” We drift, while I catch my breath. The clouds turn black. The water becomes dead calm. “For now, it will be easy going. It’s going to storm any minute.” I paddle fast and hard. The rain comes down in buckets.
- 36 “I’m already wet, so it doesn’t matter,” Jamie jokes.
- 37 I like his sense of humor, but I’m not used to talking to a guy. I’ve never had a boyfriend. Who would be interested in me?
- 38 “You don’t know what it’s like being so helpless,” Jamie says.
- 39 I bite my lip. The kayak drifts. I see my parents waving from shore.
- 40 My father runs into the water to help. Everything happens real fast. He takes control. Before I know it, Jamie and I are safely back. My mother runs over with towels. Jamie wraps the towel around himself and pulls the windsurfer onto the sand. I stay in my kayak. Half the kayak is on land. The rest is in the water. I feel trapped, like a beached whale.
- 41 A turkey vulture circles above me, decides I’m not dead and flies away. I feel dead inside.
- 42 Jamie comes back and stands over me. “Do you need help?” he asks.
- 43 I shake my head, no. *Go away!* I scream in my head. *Go away, everybody!*
- 44 “Thanks for saving my skin,” Jamie says.

⁴ Eskimo roll: a technique used for righting an overturned kayak.

- 45 “Next time, wear a life jacket.”
- 46 Jamie doesn’t flinch. “You’re right. That was dumb.” It is pouring even harder. Jamie hugs the wet towel around him. “Aren’t you getting out?” he asks.
- 47 “Yes.” Tears sting my eyes, mixed with the rain. My mother pushes a wheelchair over. My father lifts me. A blanket is wrapped around my shivering shoulders. I motion for my parents to leave me alone. Surprised, they move away, but stay close by. Jamie stares.
- 48 “Say something.” My voice quivers. A fat bullfrog croaks and jumps into the water. I want to jump in after him and swim away somewhere safe. I say nothing more.
- 49 “Teresa,” he clears his throat. “I didn’t know.”
- 50 I watch his discomfort. I’ve seen it all before. Awkwardness. Forced conversation. A feeble excuse and a fast getaway. My closer friends tried a little harder. They lasted two or three visits. Then, they stopped coming around.
- 51 The silence drags on. A mosquito buzzes around my head. So annoying. Why can’t they both leave? It lands on my arm and I smack it.
- 52 “Do you like roasting marshmallows?” asks Jamie.
- 53 “Huh?”
- 54 “I like mine burnt to a crisp.”
- 55 I hate small talk. My hands turn white, as I clutch the armrests of my wheelchair. “What you really want to know is how long I’ve been crippled.”
- 56 Jamie winces. He doesn’t say anything. I wish he would leave. The air feels heavy and suffocating. I decide to make it easy for him. I’ll go first. I push on the wheels with my hands. The sand is wet. The wheels bury, instead of thrusting the wheelchair forward. I stop pushing. Another helpless moment. My parents are watching, waiting for my signal to look after me.
- 57 Jamie puts his hand on my shoulder. “Would you like to join me and my friends at a campfire tonight?”
- 58 “I don’t need pity,” I retort.
- 59 Jamie smiles. “Actually, I need a date. Everybody is a couple, except me. Where’s your campsite?”
- 60 “Granite Saddle number 1026.” *Why do I tell him? What’s the matter with me?* I stare at my wheelchair and then at my kayak. My eyes water. Through tears, I see two images of me: the helpless child on land and the

independent woman on water. I blink and the land and water merge. I become one.

My notes about what I am reading

61 I smile back at him.

62 Jamie pushes me past my parents. They stare at me, in confusion. "It's okay. I'll take Teresa to your campsite." My parents walk behind at a safe distance, moving slowly, despite the rain. We stop at my tent. I smell the fragrance of wet pine needles.

63 "I'll pick you up at nine." An ember flickers in the wet fireplace, catching our eyes. Sparks rise up into the sky. Jamie takes my hand. "One other thing."

64 "Yes?" I choke out.

65 "Bring the marshmallows."

"The Kayak" by Debbie Spring from *Takes: Stories for Young Adults* (Thistle-down Press, 1996).

Summits in Sight

by Stephen Madden

One of the country's finest rock climbers is many things: courageous, strong, driven, dutiful—and blind.

1 By the time Erik Weihenmayer was 12 years old, the eyesight that had been deserting him was nearly gone. This didn't slow Erik. "I'd built a plywood ramp in our driveway to jump my bike over," he remembers. "I'd fly ten feet through the air and bounce when I landed. It was great." One day, he couldn't see well enough to navigate the ramp and fell off its side. "I got all cut up on these rocks in our driveway." But his vaulting days were not over. The next day he found the ramp painted a fluorescent orange. "Even I could see it," says Erik, who quickly got back on the bike.



Erik Weihenmayer, climbing partner Chris Morris, and Erik's father Ed Weihenmayer

2 His father, Ed, had done the painting—yet another encouragement for his son to persevere. "He never said, 'You can't do it,'" says Erik. "He figured out a way for me to see it. Then he let me make my own mistakes."

3 For Ed, a former football captain at Princeton and an extremely vital man, it wasn't easy seeing his son scrape his shins on life's obstacles. Once, Ed watched as Erik ran that bike smack into a parked

car. The boy got up, dusted himself off and pedaled home. Ed never mentioned the incident.

Only by observing could Ed figure out ways to help. He encouraged Erik to try out for his Connecticut high school's wrestling team, and Erik became a champion. After retinoschisis had completely claimed Erik's sight, Ed

enrolled the boy in the outdoors program at the Carroll Center for the Blind in Massachusetts, and soon Erik was climbing New Hampshire's rock faces. He had found a calling.

Erik became an intrepid adventurer and a superb rock climber. He hiked all over the world, often with his father in attendance. On

June 27, 1995—Helen Keller's birthday¹—Erik conquered Alaska's 20,320-foot Mount McKinley. As he ascended, his dad circled the peak in a plane to share the experience. In 1996, Ed hiked to the top of Yosemite's El Capitan to greet Erik, who had spent four days climbing the sheer rock face. Ed wasn't with Erik for his marriage proposal to Ellen Reeve atop Arizona's 2,700-foot Camelback Mountain last year, but was

■ see SUMMITS, page 2

¹ Helen Keller (1880–1968) was an inspiring deaf and blind writer and lecturer who had a great effect on how people in the United States and around the world cope with disabilities.

there as Erik and Ellen wed, 13,000 feet up Tanzania’s Mount Kilimanjaro.

6 Last winter, Erik joined Ed, a former Marine aviator who flew more than 100 missions over Vietnam, on a 1,200-mile cycle trek through that country. At one point, Erik, riding behind Ed on a tandem bike, teased, “You know, Dad, I ride and hike with you, but you never come rock climbing with me. I think you owe me.”

7 “Tell me where and when,” Ed replied.

8 And so it is that on this azure morning Ed and Erik Weihenmayer stand at the base of a 200-foot rock face named Wind Ridge, in Colorado’s Eldorado Canyon State Park. Today, the son will lead the father.

9 Rock climbing is not for the unfit. Erik has the taut, flat muscles and sandpaper-rough hands of a climber. While Ed is in good shape for a 58-year-old, his regimen of tennis and bicycling doesn’t count for much here: You get good at rock climbing by climbing rocks, and Ed has never done that. “Dad’s nervous,” Erik says, and indeed Ed looks worried. But he is certain that Erik knows what he’s doing. Ed trusts Erik.

10 The route goes up a wall that bulges outward, then becomes a series of ledges. Erik moves to the rock and is instantly eight feet off the ground. In some ways he has an edge over sighted climbers, owing to an acute sense of touch many blind people develop—and rock climbing is all about touch. Soon, Erik is standing on a ledge 30 feet up.

11 Now, Ed’s turn. He reaches for a handhold, pulls himself up, searches for a foothold. His breathing is labored. Despite the cool mountain air, sweat pours off him. He’s 10 feet up the rock when he falls, his helmet making a dull thud as it hits the

cliff. Ed swings like a pendulum on the end of his rope. Forget nervous, he looks scared. Erik’s voice floats down: “C’mon, Dad. It’s easier up here.” Ed wipes sweat from his eyes and yells, “Climbing!” Ed moves to his left and falls again. He moves right and falls a third time. Still he climbs, and you start to understand how Erik learned to face the world with so much courage. You wonder if courage is more important in life than sight.

Ed has very little mobility in his left knee because of a football injury, so rather than move his leg to a foothold, he reaches across his body with his right hand, grabs the foot and jams it in. So it goes, until he is standing on the ledge. Ed, his face a mask of pure exhaustion, says, “I don’t know, Erik. Maybe I should call it quits.” Erik hands his dad a water bottle. They talk gently to each other, Erik telling Ed what’s above, pretending he didn’t hear his father. Soon they’re climbing again, and Ed doesn’t fall anymore today.

Later, at the car, Ed looks back at Wind Ridge, bathed in the warm light of a Rocky Mountain afternoon. It’s a beautiful sight, he says. Erik agrees. “Most people get beauty from their vision,” Erik says. “The blind get it from other senses. Rock feels beautiful to me—the texture, the temperatures, the way cracks branch out and come back.”

Ed smiles. The lessons never end. He takes Erik’s hand and shakes it. “Thanks, buddy,” he says. “I wouldn’t have had the courage to do it if you hadn’t been there. I didn’t want to let you down.”

“I know, Dad.”

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12

13

14

15

Photograph courtesy of © Didrik Johnck/CORBIS Sygma.

PUSH YOURSELF without fear.



- **Lightweight fiberglass shell**
- **Foam liner for maximum protection**
- **Guaranteed no-pinch buckle**
- **Molded nylon fit pads in multiple sizes**



Conquest Racing Helmets

The Competitor's Edge

Endorsed by the National Cycling Safety Council

Photograph courtesy of © Richard Hamilton Smith/CORBIS.

Use “The Kayak” (pp. 4–9) to answer questions 1–12.

- 1 Which of these is the best plot summary?
- A When Teresa tows Jamie’s windsurfer to the shore of Georgian Bay, Jamie doesn’t know that Teresa uses a wheelchair. He soon realizes that she needs assistance because her parents have to help her out of the kayak. Jamie is overcome with feelings of gratitude and pity.
 - B Because Jamie has never windsurfed before, he almost crashes into Cousin Island in Georgian Bay. Luckily there is a girl named Teresa in a kayak nearby. She yells at Jamie to lower his sail, which he does just in time to avoid a terrible crash.
 - C As Teresa kayaks on Georgian Bay, she feels strong and independent. She demonstrates her strength and independence by towing an inexperienced windsurfer to shore as a storm approaches. On land she confronts her feelings of helplessness and embarrassment when Jamie learns she uses a wheelchair.
 - D As a storm comes up over the waters of Georgian Bay, Teresa sees a windsurfer speed past her kayak. When he nearly crashes into the rocks at Cousin Island, she goes to check on him. She learns that he has never windsurfed before and offers to tow him to shore.
- 2 Which words from paragraph 12 help the reader understand the meaning of the term *stern*?
- F *into the cockpit*
 - G *directly behind*
 - H *with your hands*
 - J *yellow loop*
- 3 What is paragraph 40 mainly about?
- A Teresa’s parents do not appreciate her accomplishments.
 - B Teresa feels frustrated when her parents take charge.
 - C Teresa’s father runs into the water as Teresa and Jamie approach.
 - D Teresa wants to return to the water.
- 4 Why isn’t Jamie able to get back to shore by himself?
- F The sail has come off his windsurfer.
 - G He is not wearing a life jacket.
 - H He does not know how to use the windsurfer.
 - J His windsurfer has crashed into the rocks at Cousin Island.
- 5 Which sentence from the beginning of the story foreshadows Teresa’s internal conflict?
- A *I have on my life jacket and emergency whistle.*
 - B *It’s so different back on shore.*
 - C *Powerful swirls of wind and current toss me about.*
 - D *It’s more difficult now.*

- 6 In paragraph 32, the author uses a simile to —
- F explain that the kayak is moving swiftly through the water
 - G compare the shape of the waves to the kayak
 - H emphasize that Teresa feels as if she and the kayak are one
 - J help the reader sense the motion of the kayak
- 7 Near the end of the story, the point of view helps the reader understand —
- A why Jamie asks Teresa for a date
 - B why Teresa’s parents don’t know how to act
 - C how Teresa’s parents feel about Jamie
 - D why Teresa wishes Jamie would go away
- 8 Which line from the story is an example of irony?
- F *“Maybe with practice.”*
 - G *“You don’t know what it’s like being so helpless,” Jamie says.*
 - H *Nobody lets me grow up.*
 - J *I blink and the land and water merge.*
- 9 In paragraphs 27 through 32, the short sentences —
- A reveal the urgency of the situation
 - B describe the power of the storm
 - C change the story’s setting
 - D explain Jamie’s overwhelming fear

- 10 Which sentence best conveys the relationship between Teresa and her parents?
- F *My parents are watching, waiting for my signal to look after me.*
 - G *My mother runs over with towels.*
 - H *I see my parents waving from shore.*
 - J *My parents walk behind at a safe distance, moving slowly, despite the rain.*
- 11 The author changes the mood at the end of the story by —
- A including a description of the fire
 - B having Jamie make a lighthearted comment
 - C returning to the initial setting of the story
 - D having Jamie express his feelings for Teresa
- 12 Which sentences suggest that Teresa’s loss of the use of her legs resulted from an accident or illness?
- F *My mother pushes a wheelchair over. My father lifts me.*
 - G *Jamie hugs the wet towel around him. “Aren’t you getting out?” he asks.*
 - H *My closer friends tried a little harder. They lasted two or three visits.*
 - J *I stare at my wheelchair and then at my kayak. My eyes water.*

Use “Summits in Sight” (pp. 10–11) to answer questions 13–23.

- 13 In paragraph 5, the word *intrepid* means —
- A champion
 - B excited
 - C juvenile
 - D fearless
- 14 This article is primarily about a —
- F father and son who accomplish challenging tasks despite physical limitations
 - G father who is frustrated by his inability to help his disabled son
 - H young man who becomes blind as a result of a terrible disease
 - J relationship that had to endure great difficulties in order to survive
- 15 Erik was married on top of —
- A El Capitan
 - B Mount Kilimanjaro
 - C Camelback Mountain
 - D Mount McKinley
- 16 Paragraphs 11 and 12 are mostly about —
- F Erik encouraging Ed on a difficult climb
 - G the reasons Ed keeps falling
 - H the dangers of rock climbing
 - J Erik’s courage during the climb
- 17 In paragraph 11, the simile “Ed swings like a pendulum” helps the reader visualize —
- A the distance between Erik and Ed
 - B the danger of Ed’s situation
 - C the time that passes while Erik waits
 - D the courage that Ed and Erik share
- 18 Ed’s behavior after Erik rode his bike into a parked car suggests that Ed —
- F understood that Erik needed more help than other children
 - G believed that it would be helpful to talk about Erik’s difficulties
 - H thought that constant communication wasn’t important
 - J believed that Erik should learn to deal with life’s hardships

- 19** In paragraph 12, why does the author use the metaphor “his face a mask of pure exhaustion”?
- A** To convey the difficulty of Ed’s ordeal
 - B** To emphasize Ed’s lack of courage
 - C** To reflect the fear in Ed’s eyes
 - D** To explain Erik’s frustration with Ed
- 20** One reason that the author provides statistics about the mountains that Erik has climbed is probably to —
- F** demonstrate that Erik has been to many parts of the world
 - G** show that Erik has climbed only a few of the world’s mountains
 - H** convince the reader that the author has researched the facts
 - J** show that Erik has not limited himself to easy climbs
- 21** The author supports his claims about Erik’s athletic abilities by —
- A** focusing on Erik’s love of sports
 - B** showing Erik’s appreciation of the outdoors
 - C** listing Erik’s accomplishments
 - D** emphasizing Erik’s love for his father
- 22** The author includes the story about the bike in paragraphs 1 through 3 to —
- F** foreshadow Ed and Erik’s climb at Wind Ridge
 - G** provide an example of Erik’s determination
 - H** contrast Ed’s and Erik’s responses to Erik’s blindness
 - J** explain how Erik’s blindness caused later difficulties
- 23** Paragraph 9 leads the reader to conclude that —
- A** exercise is important in keeping fit
 - B** young people make better climbers than older people do
 - C** rock climbing is appropriate for everyone
 - D** practicing an activity improves performance

**Use “The Kayak” and “Summits in Sight” (pp. 4–11)
to answer questions 24 and 25.**

24 The settings of “The Kayak” and “Summits in Sight” show that Teresa and Erik —

- F** like to test their limits
- G** enjoy being alone in nature
- H** admire people who are athletic
- J** enjoy sharing adventures with their parents

25 In the selections, one way each author creates tension is by —

- A** describing the sequence of events in a dangerous situation
- B** explaining a single character’s thoughts and feelings
- C** using flashbacks to explain earlier problems
- D** using dialogue to show parent-child interactions

**Use the visual representation on page 12
to answer questions 26–28.**

26 The reader can conclude that the organization that has endorsed this product —

- F** wants wheelchair athletes to wear special fiberglass helmets
- G** has developed standards concerning the safety of racing helmets
- H** asserts that most helmets have liners that aren’t protective
- J** wants helmet manufacturers to guarantee their buckles

28 The purpose of this ad is to —

- F** persuade readers to buy a certain brand of racing helmet
- G** tell a story about a wheelchair athlete
- H** express an opinion about people with disabilities
- J** inform readers about materials used in racing helmets

27 Which of these is a slogan contained in the ad?

- A** *The Competitor’s Edge*
- B** *Lightweight fiberglass shell*
- C** *Guaranteed no-pinch buckle*
- D** *Endorsed by the National Cycling Safety Council*

DIRECTIONS

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

29 In “The Kayak,” what does the kayak symbolize to Teresa? Support your answer with evidence from the selection.

30 In “Summits in Sight,” what does Ed learn from Erik? Support your answer with evidence from the selection.

31 What is one characteristic that Teresa and Erik share? Support your answer with evidence from **both** selections.

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

WRITTEN COMPOSITION

Write an essay explaining what courage means to you.

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

REMEMBER—YOU SHOULD

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

USE THIS PREWRITING PAGE TO
PLAN YOUR COMPOSITION.

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

USE THIS PREWRITING PAGE TO
PLAN YOUR COMPOSITION.

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

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 **select**
- C** Change *her* to **herself**
- D** Make no change



REVISING AND EDITING

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



DIRECTIONS

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

Takeo recently read about a volunteer organization that trains rescue dogs. He decided to write a report about this organization and has asked for your help revising and editing the paper. Read Takeo's report and look for corrections and improvements he should make. When you finish reading, answer the questions that follow.



Photograph courtesy of © CORBIS.

Rescue Dogs

- (1) The exhausted rescue workers were on an airplane headed for home.
- (2) Despite the rigors of searching through the rubble of New York's Twin Towers, they were in excellent shape. (3) These heroic workers had just assisted in an important job—and they had done them on all four legs. (4) No, these workers weren't firefighters or police officers; they were rescue dogs, members of the National Disaster Search Dog Foundation (NDSDF). (5) Other dogs are also trained to perform helpful services, such as hunting, guarding, and guiding.
- (6) The NDSDF is based in Ojai, California, and was started in 1995 by a determined woman named Wilma Melville. (7) After helping out at the site of the disastrous bombing in Oklahoma City; she recognized the importance of rescue dogs. (8) In response, she founded this organization, which is completely

nonprofit and is run by volunteers. (9) The mission of the foundation is simple: to help search for and rescue people who are involved in disasters, from mud slides and earthquakes to train wrecks and bombings. (10) Melville now acts as president and chief executive officer (CEO) of the foundation.

(11) Each NDSDF search team consists of a trained dog and a human handler. (12) The dogs chosen for this kind of training must have certain characteristics. (13) A shy dog, or one that is easily upset by loud noises and crowds, would not cope well with the commotion that commonly surrounds catastrophes. (14) Adult dogs are best because their personalities are already developed. (15) Volunteers can often find dogs with these characteristics at animal shelters. (16) After being selected, a training period that can last up to three years is what the dog goes through.

(17) The handlers for rescue dogs are usually firefighters. (18) Following six to twelve months of lots of instruction, a firefighter can be certified as a canine search specialist. (19) Coming from individual donations as well as from corporate sponsorships are the funds for this training.

(20) California with 22 teams, but other states in the country not nearly as well prepared. (21) Since people are now becoming aware of what valuable assets these dogs can be in emergency situations, more and more teams will probably be trained in the years ahead.

32 What change, if any, should be made in sentence 3?

- F Change *heroic* to **heroically**
- G Change *had just assisted* to **have just assisted**
- H Change *them* to **it**
- J Make no change

33 What is the most effective way to improve the organization of the first paragraph (sentences 1–5)?

- A Delete sentence 1
- B Move sentence 1 to the end of the paragraph
- C Switch sentences 4 and 5
- D Delete sentence 5

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

- F Change *site* to **sight**
- G Change the semicolon to a comma
- H Change *recognized* to **recognizes**
- J Make no change

35 Which of the following ideas would most logically follow sentence 12?

- A These animals need to be energetic, determined, and eager to hunt and fetch.
- B Any well-behaved dog can become a good rescue dog.
- C In most cases the dog handlers are firefighters.
- D The dogs selected have particular qualities and behaviors.

36 What change, if any, should be made in sentence 14?

- F Change *there* to **their**
- G Change *personalities* to **personalities'**
- H Change *already* to **allready**
- J Make no change

- 37 What is the most effective way to rewrite the ideas in sentence 16?
- A After being selected, a training period can last up to three years, that's what the dog goes through.
 - B A training period that can last up to three years is what the dog goes through after being selected.
 - C The dog goes through a training period after being selected that can last up to three years.
 - D After being selected, the dog goes through a training period that can last up to three years.

- 38 What change, if any, should be made in sentence 18?
- F Change *lots of* to **intensive**
 - G Change *certified* to **certified**
 - H Change *canine* to **Canine**
 - J Make no change

- 39 What is the most effective way to rewrite sentence 19?
- A They come from individual donations as well as from corporate sponsorships, the funds for this training.
 - B The funds for this training come from individual donations. As well as from corporate sponsorships.
 - C The funds for this training come from individual donations as well as from corporate sponsorships.
 - D Individual donations and corporate sponsorships are where the funds for this training come from.

- 40 What is the most effective way to rewrite the ideas in sentence 20?
- F With 22 teams, California and other states in the country are not nearly as well prepared.
 - G California has 22 teams, but other states in the country are not nearly as well prepared.
 - H California has 22 teams, but other states in the country they are not nearly as well prepared.
 - J Other states in the country are not nearly as well prepared. As California with its 22 teams.

- 41 What change, if any, should be made in sentence 21?
- A Change *valuable* to **valuably**
 - B Change the comma to a semicolon
 - C Change *probally* to **probably**
 - D Make no change

In response to an English assignment, Manuel wrote this paper about an experience one of his friends had. He wants you to read the paper and help him correct and improve it. When you finish reading, answer the questions that follow.

The Ancient Art of Karate

(1) Justin needed to stay in shape during the winter so that he would be ready for soccer practice when it started in the spring. (2) He wanted to choose an activity that he could participate in regardless of the weather. (3) He thought about weight lifting and basketball, but both weight lifting and basketball would continue after soccer season started. (4) One day Justin's friend Darrel invited Justin to watch a karate class. (5) Justin agreed to go to the class with Darrel.

(6) The boys met at the karate school the next afternoon. (7) While Darrel got ready for his class, Justin read an information booklet about karate. (8) He learned that karate is thousands of years old, it was developed so that people could defend themselves without weapons. (9) He also learned that there are several theories about where the sport originates. (10) Historians think that Chinese Buddhist monks may have been some of the first people to practice karate.

(11) As Justin continued to read, he discovered that by the early 1900s, karate had spread from China to Japan. (12) It was soon an integral part of many school and military programs in these countries. (13) During World War II Americans stationed overseas learned about karate. (14) When the war was over, they returned to the United States and introduced them to what they had learned.

(15) After a few minutes Darrel’s class began, and Justin stopped reading.

(16) He watched intently as Darrel and the other students practiced their skills.

(17) The class was fast-paced, and the student’s movements were quick and light.

(18) Justin could see that each student focused on evading and deflecting an opponent’s attack rather than react directly to it.

(19) When the class ended, the instructor came over to talk to Justin.

(20) “There are many styles of karate, Mr. Chin explained. (21) “Different styles emphasize various ways of blocking and striking your opponent. (22) No one style is better than another. (23) Only you can decide which is right for you.”

(24) Justin thanked Mr. Chin for the advice. (25) He decided that karate would be an excellent way to stay in shape for soccer. (26) It would give him an opportunity to learn about one of the oldest forms of self-defense.

42 What is the most effective way to rewrite the ideas in sentence 3?

- F** Both weight lifting and basketball he thought about because they would continue after soccer season started.
- G** Thinking about weight lifting and basketball, but both weight lifting and basketball would continue after soccer season started.
- H** He thought about weight lifting and basketball, both weight lifting and basketball would continue after soccer season started.
- J** He thought about weight lifting and basketball, but both of these activities would continue after soccer season started.

43 Where in the first paragraph (sentences 1–5) should Manuel add the following sentence?

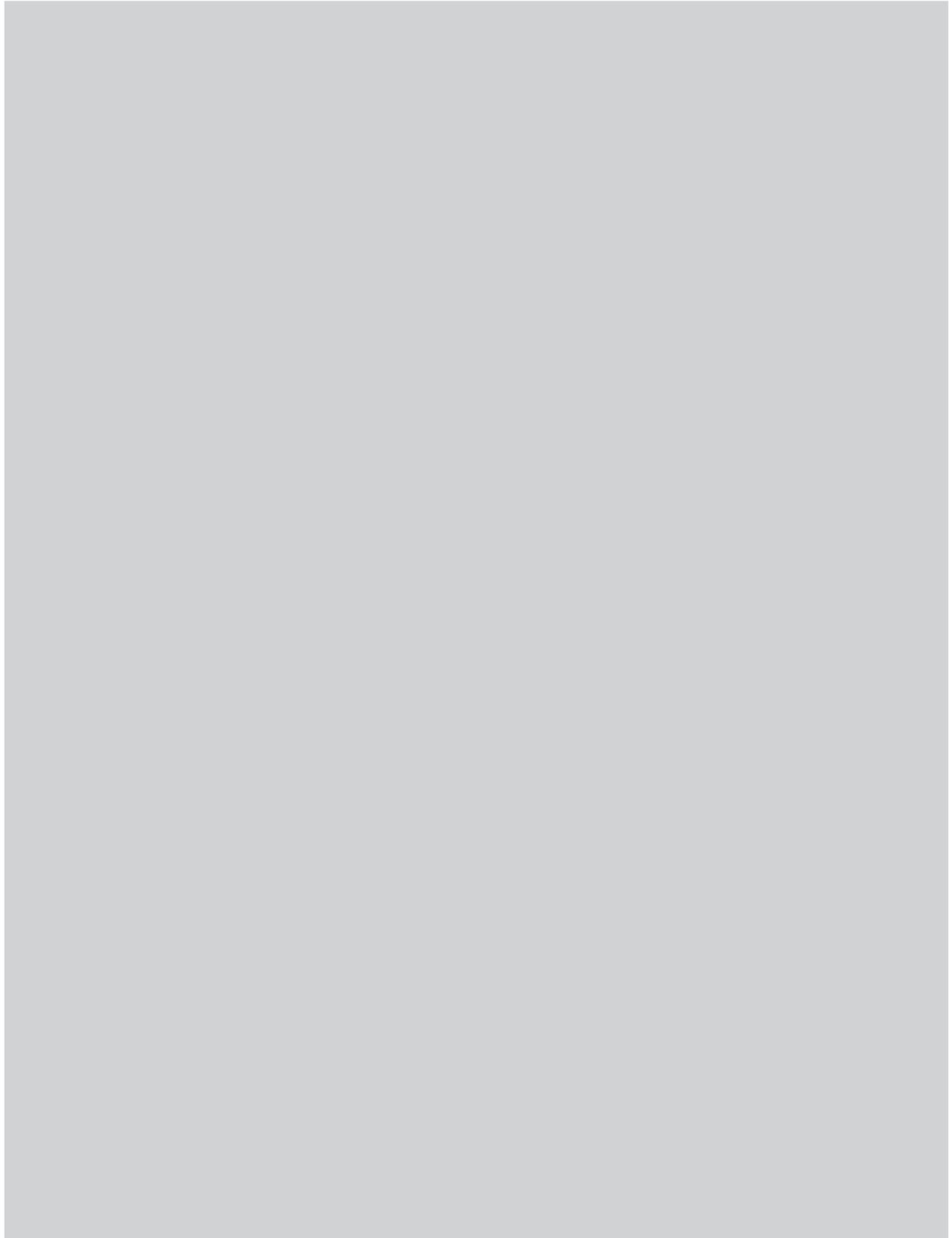
Darrel had been taking karate for many years, and he told Justin that the sport required great strength and agility.

- A** At the beginning of the paragraph
- B** After sentence 2
- C** After sentence 4
- D** At the end of the paragraph

- 44 How should sentence 8 be revised?
- F He learned that karate is thousands of years old. And was developed so that people could defend themselves without weapons.
 - G He learned that karate, which is thousands of years old, was developed so that people could defend themselves without weapons.
 - H He learned that karate is thousands of years old because it was developed so that people could defend themselves without weapons.
 - J No revision is needed.
- 45 What change, if any, should be made in sentence 9?
- A Change **are** to **is**
 - B Insert a comma after **theories**
 - C Change **originates** to **originated**
 - D Make no change
- 46 The meaning of sentence 14 can be clarified by changing **them** to —
- F him
 - G other Americans
 - H Japanese people
 - J the monks
- 47 What change, if any, should be made in sentence 17?
- A Delete the first **and**
 - B Change **student's** to **students'**
 - C Change **quick and light** to **quickly and lightly**
 - D Make no change
- 48 What change should be made in sentence 18?
- F Change **evading** to **evadding**
 - G Change **react** to **reacting**
 - H Change **directly** to **direct**
 - J Change **it** to **them**
- 49 What change, if any, should be made in sentence 20?
- A Change **are** to **is**
 - B Change **styles** to **style's**
 - C Insert quotation marks after the comma
 - D Make no change
- 50 What change, if any, should be made in sentence 21?
- F Change **Diffrent** to **Different**
 - G Change **striking** to **strike**
 - H Change **your** to **you're**
 - J Make no change
- 51 What transition should be added to the beginning of sentence 26?
- A Furthermore,
 - B Therefore,
 - C Instead,
 - D In conclusion,

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





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

DIRECTIONS

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

SAMPLE A

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

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

B 4

C 8

D Not here

SAMPLE B

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

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



- 1 At the beginning of the school year, teachers had 240,000 sheets of copier paper to use. If about 2000 sheets of paper are used each day during a school year, which equation best describes s , the number of sheets that are left after d days of school?

- A $s = 240,000 - 2000d$
- B $s = 240,000 + 2000d$
- C $s = 240,000d - 2000d$
- D $s = 240,000d + 2000d$

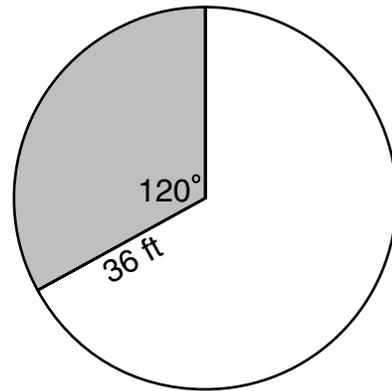
- 2 Simplify the algebraic expression $5(x - 2) + 2(3x^2 - 12x + 12)$.

- F $-x + 10$
- G $-13x + 14$
- H $6x^2 - 7x + 10$
- J $6x^2 - 19x + 14$

- 3 What are the coordinates of the y -intercept of the line represented by the equation $4x + 2y = 10$?

- A (0, 2)
- B $(0, \frac{5}{2})$
- C (0, 5)
- D (0, 10)

- 4 The shaded area in the circle below represents the section of a park used by the chamber of commerce for a fund-raising event.



What is the approximate area of the section of the park used for the fund-raiser?

- F 339 square feet
- G 1,357 square feet
- H 4,071 square feet
- J 12,214 square feet

- 5 How does the graph of $y = x^2 - 1$ differ from the graph of $y = x^2 + 7$?

- A The graph of $y = x^2 - 1$ is 8 units to the left of the graph of $y = x^2 + 7$.
- B The graph of $y = x^2 - 1$ is 8 units to the right of the graph of $y = x^2 + 7$.
- C The graph of $y = x^2 - 1$ is 8 units above the graph of $y = x^2 + 7$.
- D The graph of $y = x^2 - 1$ is 8 units below the graph of $y = x^2 + 7$.

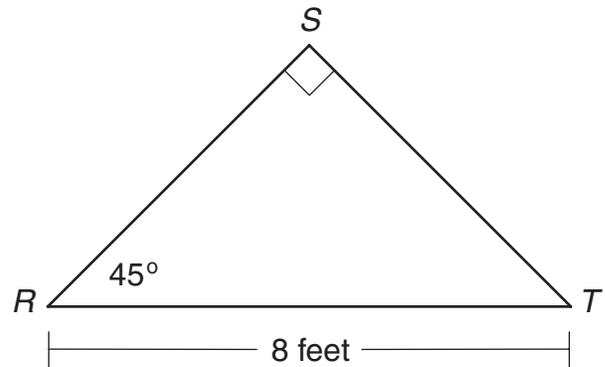
- 6 Nancy threw a ball upward from the roof of a 50-foot-high building at an initial velocity of 40 feet per second. The table shows the relationship between the time elapsed and the ball's height above the ground.

| Time After Nancy Threw the Ball (seconds) | Height of the Ball Above the Ground (feet) |
|---|--|
| 0 | 50 |
| 0.5 | 66 |
| 1.0 | 74 |
| 1.5 | 74 |
| 2.0 | 66 |
| 2.5 | 50 |

If the height of the ball is a quadratic function of time, between what times did the ball reach a height of 70 feet?

- F** Between 0 seconds and 0.5 second
G Between 1 second and 1.5 seconds
H Between 0.5 second and 1 second and between 1.5 seconds and 2 seconds
J Between 1 second and 1.5 seconds and between 1.5 seconds and 2 seconds

- 7 Find the area of triangle RST .

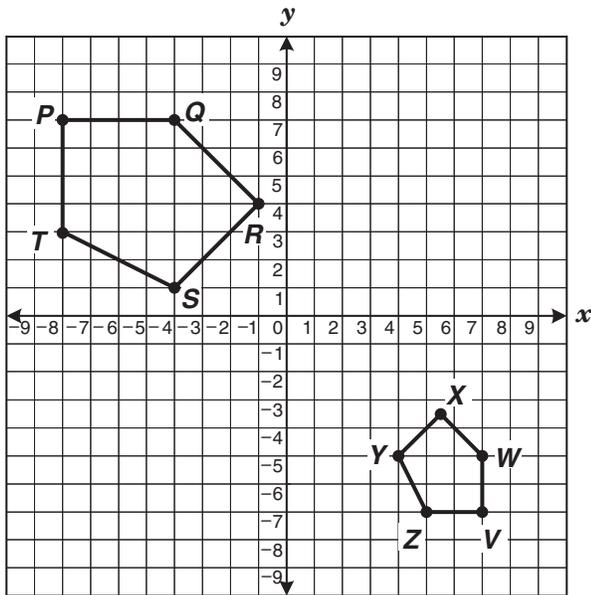


- A** 16 ft^2
B 32 ft^2
C 24 ft^2
D 40 ft^2

- 8 Which two lines are parallel?

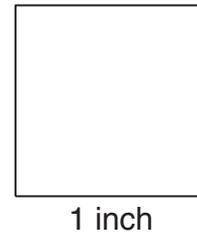
- F** $2x + 5y = 6$ and $5x + 2y = 10$
G $3x + 4y = 12$ and $6x + 8y = 12$
H $2x + 5y = 6$ and $-2x + 5y = 14$
J $3x + 4y = 12$ and $6x - 8y = 20$

- 9 Which statement best describes why pentagon $PQRST$ is similar to pentagon $VWXYZ$?



- A The ratio of the length of \overline{PT} to \overline{YZ} equals the ratio of the length of \overline{RS} to \overline{WV} .
- B Both pentagons have corresponding right angles.
- C Pentagon $VWXYZ$ is the result of a translation of pentagon $PQRST$.
- D The ratio of the corresponding sides of pentagons $PQRST$ and $VWXYZ$ is 2:1.
- 10 The land area of Texas is about 50,000 square miles smaller than twice the land area of California. If x represents the land area of California, which expression can be used to determine the land area of Texas?
- F $50,000 - 2x$
- G $\frac{x - 50,000}{2}$
- H $\frac{x}{2} - 50,000$
- J $2x - 50,000$

- 11 A square is shown below.



How many of these squares can fit together without any gaps in order to make a similar figure with a perimeter of 24 inches?

- A 36
- B 32
- C 24
- D 20
- 12 An architect determined the relationship between V , the volume of a sphere, and S , the surface area of the sphere. Which equation represents this relationship?

F $\frac{V}{S} = \frac{r^2}{3}$

G $\frac{V}{S} = \frac{r}{3}$

H $\frac{V}{S} = \frac{3r}{2}$

J $\frac{V}{S} = \frac{3}{r^2}$

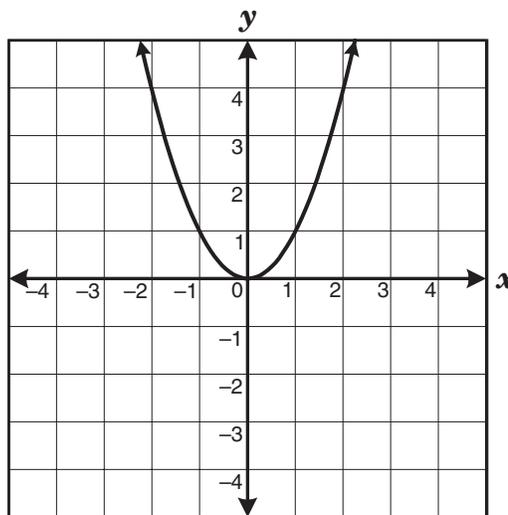
- 13 A consumer group measured an automobile's acceleration by using the data shown below.

| Time, t (seconds) | Distance from Starting Line, d (feet) |
|------------------------|---|
| 0 | 0 |
| 2 | 21 |
| 5 | 131.25 |
| 6 | 189 |
| 9 | 425.25 |

Which equation best represents the relationship between d , the automobile's distance from the starting line, and t , the time?

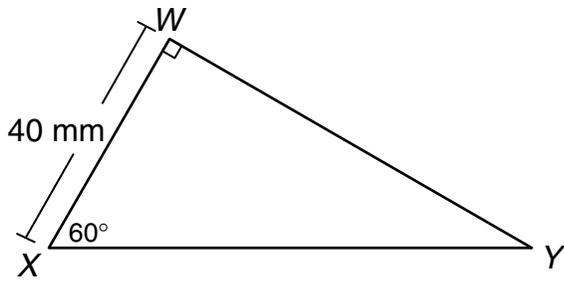
- A $d = 10.5t^2$
 B $d = 10.5t^3$
 C $d = 5.25t$
 D $d = 5.25t^2$
- 14 What is the approximate length of \overline{MN} when the coordinates of its endpoints are $(-4, 5)$ and $(-6, 9)$?
- F 2.4 units
 G 4.5 units
 H 10.8 units
 J 17.2 units

- 15 Which type of parent function is represented by the function graphed below?



- A Exponential
 B Absolute value
 C Linear
 D Quadratic
- 16 Which of the following is the solution for this system of linear equations?
- $$y = -\frac{2}{3}x + 2$$
- $$3x - y = -13$$
- F $(\frac{17}{3}, 4)$
 G $(-1, \frac{8}{3})$
 H $(-3, 4)$
 J $(-3, -4)$

- 17 $\triangle WXY$ is a right triangle.



Find the length of \overline{WY} .

- A 20 mm
 - B $20\sqrt{3}$ mm
 - C 60 mm
 - D $40\sqrt{3}$ mm
- 18 Which of the following best describes the graph of the equations below?

$$y = 4 - 2x$$

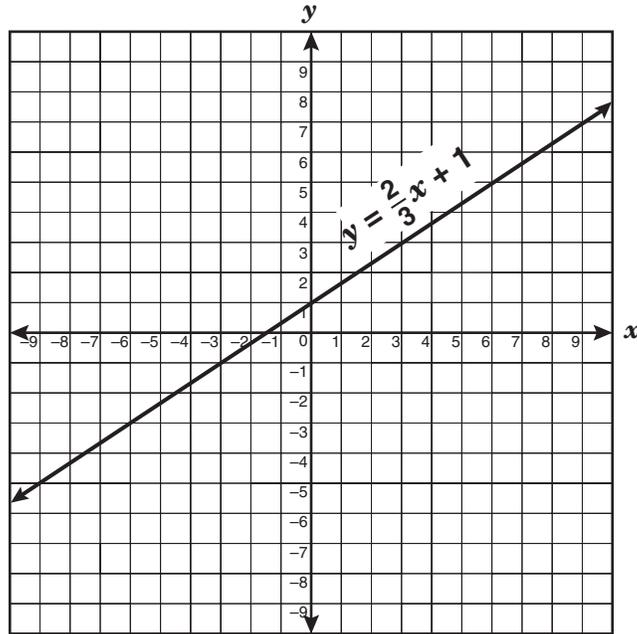
$$4y = 2x + 1$$

- F The lines have the same x -intercept.
- G The lines have the same y -intercept.
- H The lines intersect to form right angles.
- J The lines are parallel to each other.

- 19 Mike was driving his car at a constant speed of 50 miles per hour. Then he accelerated at a constant rate for 7 seconds. What additional information is needed to determine the speed of the car after 7 seconds?

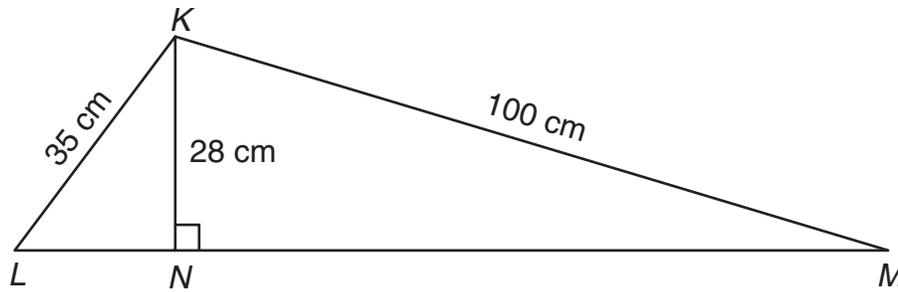
- A The speed of the car prior to acceleration
- B The length of time Mike accelerated
- C The speed limit
- D The rate of acceleration

- 20 Use the graph of $y = \frac{2}{3}x + 1$ to solve the equation for x when $y = -3$.



- F** $x = -6$
- G** $x = -1$
- H** $x = 1$
- J** $x = 3$

- 21 In the figure below, what is the length of \overline{ML} in centimeters?



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

- 22 Nikolay made a fruit drink composed of 36% orange juice. The rest of the fruit drink was grape juice. If Nikolay drank x ounces of the fruit drink, which equation best represents y , the number of ounces of grape juice he drank?

F $y = \frac{9}{25}x$

G $y = \frac{16}{25}x$

H $y = \frac{9}{16}x$

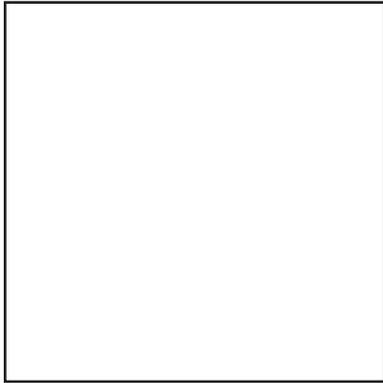
J $y = \frac{16}{9}x$

- 23 Start with a 1-unit-by-1-unit unshaded square. In each iteration, the following steps occur for the smallest unshaded squares resulting from the previous iteration.

Step 1: Divide the square into a 3-by-3 grid of squares

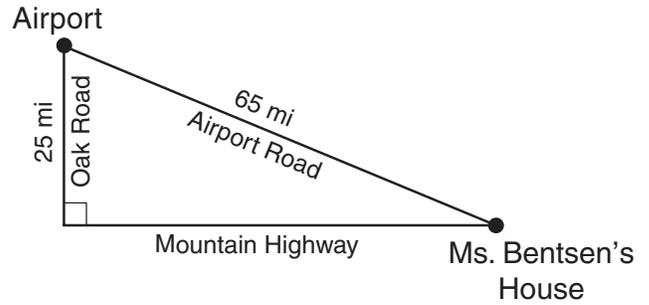
Step 2: Shade only the center square of this 3-by-3 grid

What fraction of the 1-unit-by-1-unit square is shaded after the second iteration?



- A $\frac{4}{9}$
- B $\frac{7}{9}$
- C $\frac{17}{81}$
- D $\frac{64}{73}$
- 24 An astronomer mathematically expressed the amount of space occupied by Earth. She reported Earth's —
- F radius
- G volume
- H surface area
- J circumference

- 25 The map below shows 2 different routes Ms. Bentsen can take to drive to the airport from her house.



How many miles could Ms. Bentsen save by traveling on Airport Road instead of Mountain Highway and Oak Road to get to the airport?

- A 20 mi
- B 30 mi
- C 35 mi
- D 60 mi
- 26 Find the slope of the line identified by the equation $4x + 5y = 20$.
- F 4
- G $\frac{5}{4}$
- H $-\frac{4}{5}$
- J -4

27 Ms. Dinshaw and Ms. Burke rented a car for 3 days at a cost of \$27.00 per day and \$0.05 per mile driven. They shared the cost of the car equally. If Ms. Dinshaw paid \$46.50, how many miles did they drive?

- A 240 mi
- B 390 mi
- C 690 mi
- D 3480 mi

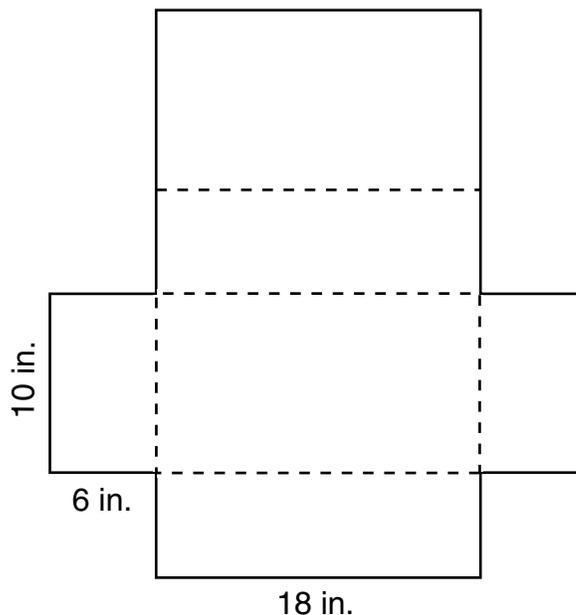
28 Marcos has a spinner with 12 equal sections colored either blue or red. If the spinner lands on blue on 33 out of 50 spins, which is most likely the number of blue sections on the spinner?

- F 4
- G 6
- H 8
- J 10

29 The net profit, p , that a company makes from the production of widgets is represented by the equation $p = 2.5n - 25,000$, where n is the number of widgets the company sells. Which is the best interpretation of this information?

- A The company has made a profit of \$25,000.
- B The company needs to sell more than 10,000 widgets before it makes a profit.
- C The company's profit needs to be more than \$25,000.
- D The company has sold more than 10,000 of its widgets.

30 A company plans to design a new version of its Millennium Doll that will be larger than the old version. The figure below shows the dimensions of the box for the old version of the doll.



If all the dimensions of the box are increased by 2 inches for the new doll, what will be the total surface area of the new box?

- F 496 in.²
- G 696 in.²
- H 992 in.²
- J 1920 in.²

- 31 Over a 50-day period, a statistics professor recorded the data shown for the traffic lights he encountered each day while driving to work.

Traffic Lights Encountered

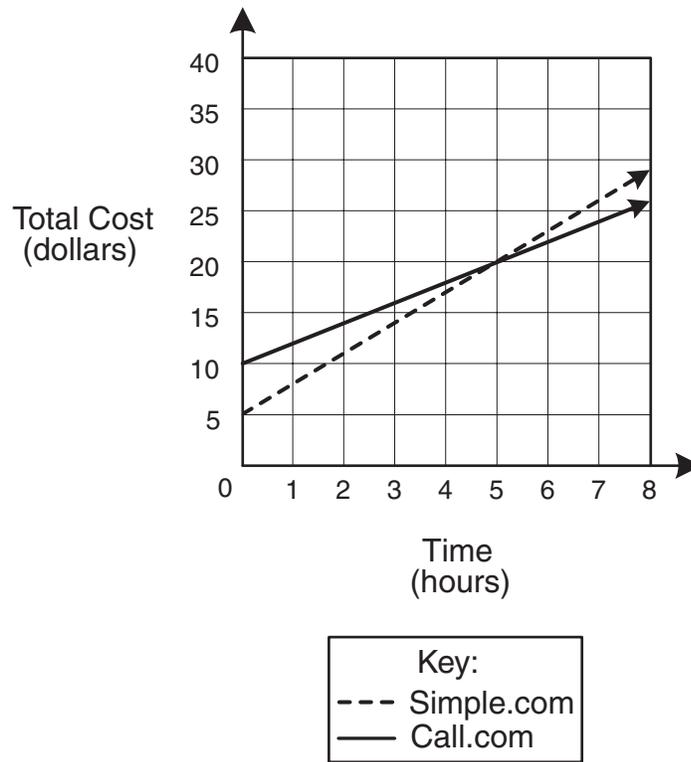
| | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| RGRGG | GRRRR | GGGRG | RGRGR | RGGGR | GGRRR | RGGRG | GGRRR | RRGRG | RRRRR |
| GGGRG | GGGGR | GRRRG | RRRGG | RGRRR | GGRGR | RGGRR | GRGRR | GRGRR | GGGRG |
| RRGRR | RRGGR | RRGGR | RGRGR | RRRRR | RGRRR | GRRGR | RRGRR | RGRRR | GGRGG |
| RGGRG | RRGRG | GGGGR | GRRRR | GRRGR | RRGRR | RGRRG | RRRRR | RRRRG | GGRRG |
| RGGRG | RGRRR | RRRGR | RGGRG | GRRRG | RGGGG | RRRRG | GGGRR | GRRRR | RRRRR |

Key:
R = Red
G = Green

What was the experimental probability of the professor encountering 3 or more green lights in a row on his way to work?

- A 0.06
- B 0.10
- C 0.16
- D 0.32

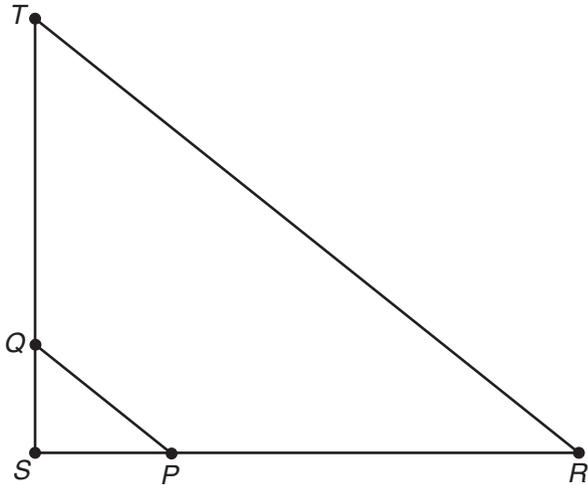
- 32 Amy is choosing between two local Internet service providers, Simple.com and Call.com. The graph shows the relationship between the total cost per month of each Internet provider and the hours spent on-line.



According to the graph, which of these statements is true?

- F Simple.com would cost less than Call.com if Amy used the Internet more than 5 hours a month.
- G Call.com would cost less than Simple.com if Amy used the Internet less than 5 hours a month.
- H Simple.com would cost less than Call.com if Amy used the Internet for exactly 5 hours a month.
- J Call.com would cost less than Simple.com if Amy used the Internet more than 5 hours a month.

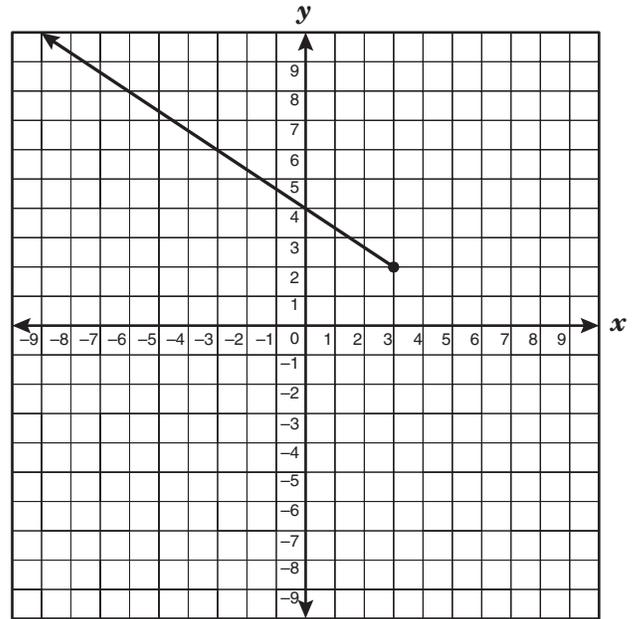
- 33 In $\triangle STR$, \overline{QP} and \overline{TR} are parallel.



If $SQ = 6$ units, $QT = 24$ units, and the perimeter of $\triangle SQP$ is 20 units, what is the perimeter of $\triangle STR$?

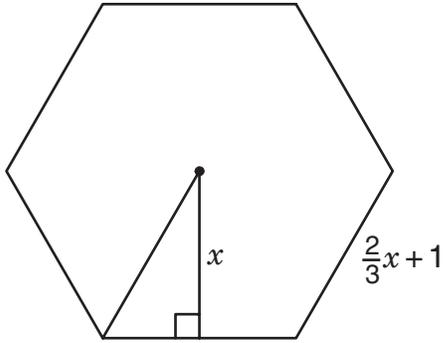
- A 80 units
 B 100 units
 C 320 units
 D 500 units
- 34 \overline{AB} is the diameter of circle C . If the endpoints of the diameter are $(3, -4)$ and $(7, 2)$, what are the coordinates of the center of circle C ?
- F $(2, -1)$
 G $(4, -2)$
 H $(5, -1)$
 J $(10, -2)$

- 35 Which inequality best describes the range of the function represented by this graph?



- A $y \leq 3$
 B $y \leq 2$
 C $y \geq 3$
 D $y \geq 2$

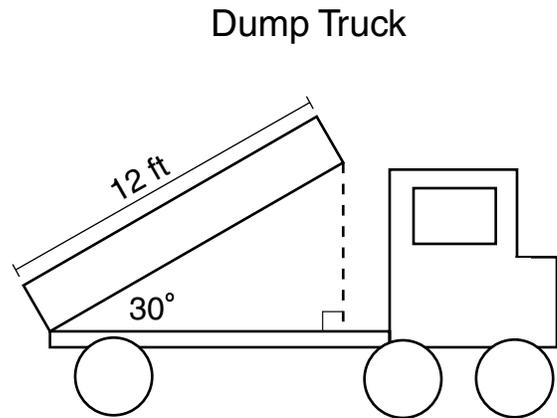
- 36 Which polynomial best represents the area of the regular hexagon shown below?



$$[\text{Area} = \frac{1}{2}(\text{apothem})(\text{perimeter})]$$

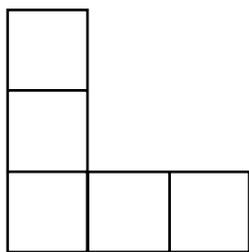
- F** $5x + 6$
G $2x^2 + 3x$
H $4x^2 + 12x$
J $4x + 12$
- 37 This year's price for a certain car is 25% higher than last year's price of \$8800. What percent of this year's price is last year's price?
- A** 67%
B 75%
C 78%
D 80%

- 38 The 12-foot-long bed of a dump truck loaded with debris must rise to an angle of 30° before the debris will spill out. Approximately how high must the front of the bed rise for the debris to spill out?

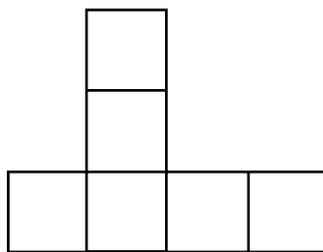


- F** 1.7 ft
G 18 ft
H 10.4 ft
J 6 ft

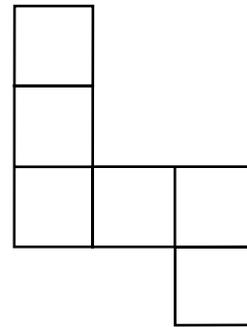
39 The front, side, and top views of a solid built with cubes are shown below.



Front View



Side View

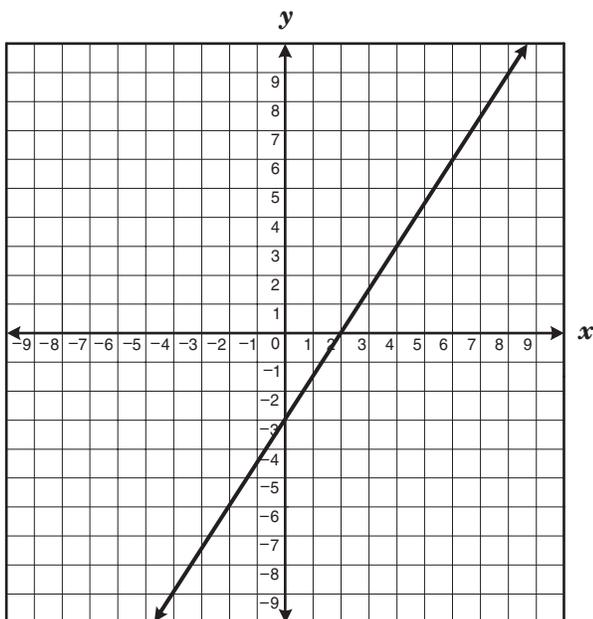


Top View

How many cubes are needed to construct this solid?

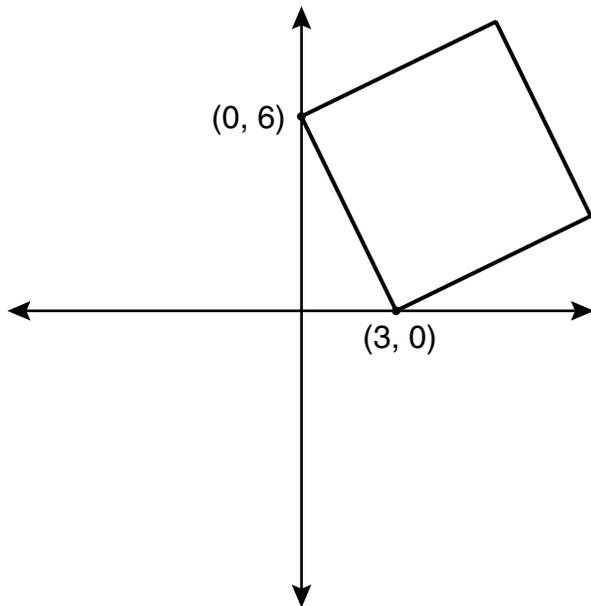
- A 6
- B 8
- C 12
- D 16

40 Which equation best represents the line on the graph?



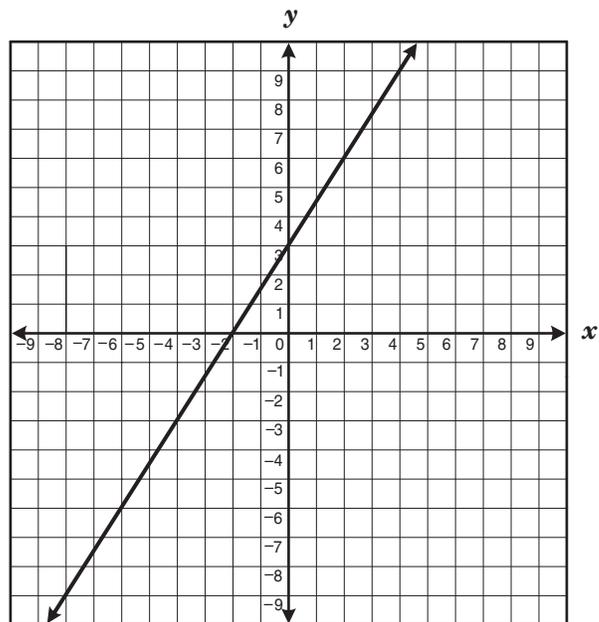
- F $3x - 2y = -4$
- G $3x + 2y = -6$
- H $3x - 2y = 6$
- J $2x - 3y = -6$

- 41 What is the area of the square in the figure below?



- A 5.2 square units
B 6.7 square units
C 27 square units
D 45 square units
- 42 Which function represents the line that contains the point (2, 12) and has a slope of -3 ?
- F $f(x) = -3x + 6$
G $f(x) = -3x + 18$
H $f(x) = -3x + 34$
J $f(x) = -3x + 38$

- 43 The line represented by the equation $y = \frac{3}{2}x + 3$ is graphed below.



Which of the following best describes the effect on the graph when the slope is doubled?

- A The y-intercept increases.
B The y-intercept decreases.
C The x-intercept increases.
D The x-intercept decreases.

44 \overleftrightarrow{FG} and \overleftrightarrow{JK} intersect at point Q . Which statement must be true?

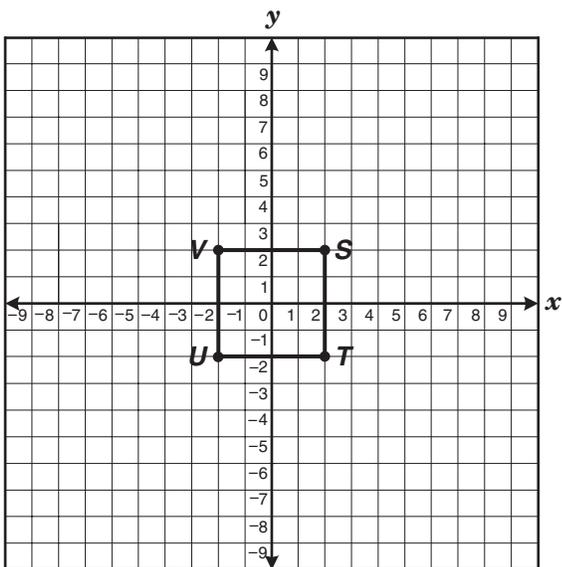
F Points F , G , J , and K are collinear.

G $\overleftrightarrow{FG} \perp \overleftrightarrow{JK}$

H $\angle KQF \cong \angle FQJ$

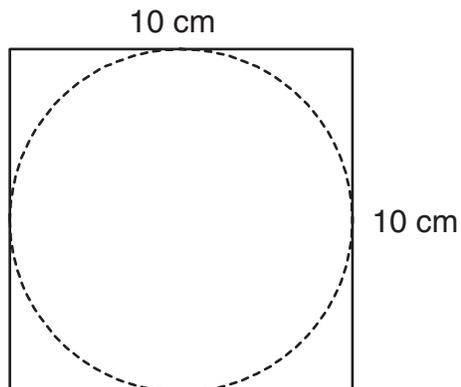
J $\angle JQG \cong \angle FQK$

45 If quadrilateral $STUV$ is rotated 180° around the origin, in which quadrant will point S appear?



- A Quadrant I
- B Quadrant II
- C Quadrant III
- D Quadrant IV

46 A circle with a diameter of 10 centimeters is to be cut out from a square piece of paper that measures 10 centimeters on each side, as shown below.



Which is closest to the amount of paper that will be left over after the circle is cut out?

- F 9 cm^2
- G 21 cm^2
- H 25 cm^2
- J 69 cm^2

- 47 The table below shows the yearly unemployment rates of a city over a 5-year period.

Yearly Unemployment Rates

| Year | Unemployment Rate |
|------|-------------------|
| 1 | 3.5% |
| 2 | 4.1% |
| 3 | 4.6% |
| 4 | 4.1% |
| 5 | 5.3% |

Which conclusion can be made from the table?

- A The unemployment rate continuously increased over these 5 years.
- B The unemployment rate for the sixth year is 4.1%.
- C Employers hired the most people in the third year.
- D The unemployment rate averaged more than 4% over these 5 years.

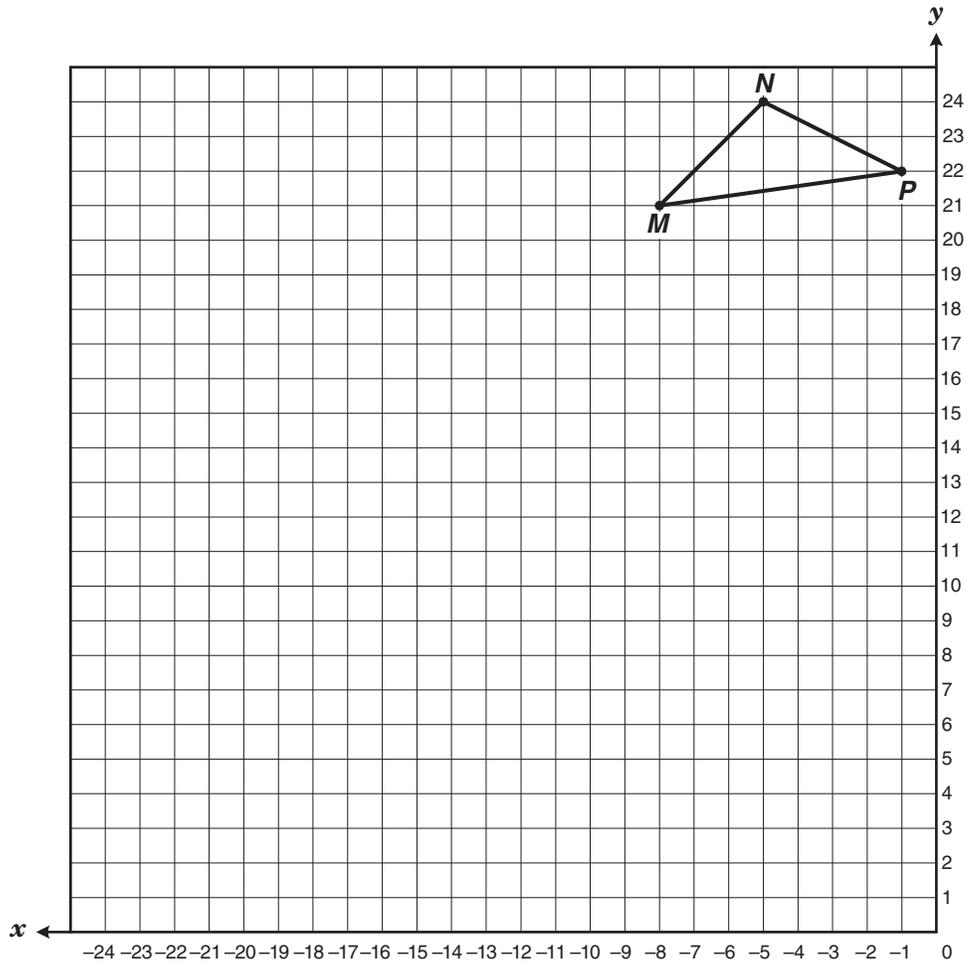
- 48 Herman claimed that the square of a number is always greater than or equal to the number. Which of the following examples disproves Herman's claim?

- F A comparison of $(-1.5)^2$ with -1.5
- G A comparison of $(-0.5)^2$ with -0.5
- H A comparison of $(0.5)^2$ with 0.5
- J A comparison of $(1.5)^2$ with 1.5

- 49 Andy drove y miles to work in 0.5 hour. He drove an average of 60 miles per hour on the freeway and an average of 30 miles per hour the rest of the way. If x is the number of hours Andy drove on the freeway, which equation can be used to find y ?

- A $30x + 60(0.5 - x) = y$
- B $60x + 30(0.5 - x) = y$
- C $30x + 60(x - 0.5) = y$
- D $60x + 30(x - 0.5) = y$

50 Which coordinates are the vertices of a triangle congruent to $\triangle MNP$?



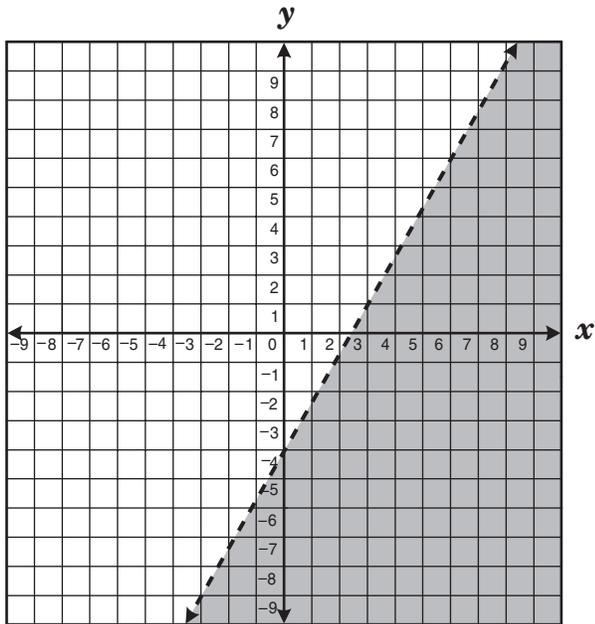
- F** $(-11, 13), (-9, 16), (-4, 16)$
- G** $(-8, 5), (-5, 2), (-1, 4)$
- H** $(-20, 4), (-17, 7), (-12, 5)$
- J** $(-15, 14), (-18, 17), (-17, 22)$

- 51 Which statement describes what happens to the graph of $y = ax^2$ when the value of a is changed from 1 to 6?
- A The graph translates 6 units up.
 - B The graph translates 6 units to the right.
 - C The graph narrows.
 - D The graph widens.

- 52 In isosceles triangle WXY , the interior angle W measures 100° . The measures of all three interior angles of triangle WXY are —
- F 100° , 100° , and 160°
 - G 100° , 100° , and 100°
 - H 100° , 60° , and 20°
 - J 100° , 40° , and 40°

- 53 Mrs. Shelby earns \$400 per week in salary plus an 8% commission on her total sales. How much must her total weekly sales be in order for her to earn exactly \$650 per week?
- A \$2000
 - B \$3125
 - C \$5200
 - D \$8125

- 54 The graph is the solution for which inequality?



- F** $y < \frac{5}{3}x - 4$
- G** $y < \frac{3}{5}x - 4$
- H** $y > \frac{3}{5}x - 4$
- J** $y > \frac{5}{3}x - 4$

- 55 The graph of $y = 11x^2 + c$ is a parabola with a vertex at the origin. Which of the following is true about the value of c ?

- A** $c > 0$
- B** $c < 0$
- C** $c = 0$
- D** $c = 11$

- 56 The Texas Pecan Company ships pecans in wooden boxes. An empty wooden box has a mass of 2.5 kilograms. The pecans have an average mass of 0.015 kilogram each. Which equation expresses m , the total mass of a box of pecans, in terms of p , the number of pecans in the box?

- F** $m = 0.015p + 2.5$
- G** $m = 0.015p - 2.5$
- H** $m = 0.015 - 2.5p$
- J** $m = 0.015 + 2.5p$

- 57 Carol wants to solve the equation $3.8x + 2 = 7 - 0.5x$ by graphing. Which method can she use to find the solution for x ?
- A Graphing the line $y = 3.8x + 2 + 7 - 0.5x$ and finding the x -intercept
 - B Graphing the line $y = 3.8x + 2 - 7 + 0.5x$ and finding the y -intercept
 - C Graphing the lines $y = 3.8x + 2$ and $y = 7 - 0.5x$ and finding the x -coordinate of the intersection
 - D Graphing the lines $y = 3.8x + 2$ and $y = 7 - 0.5x$ and finding the average of the two x -intercepts

-
- 58 A waitress at a restaurant calculated her daily pay, p , using the equation $p = 0.15f + 17.60$, where f is the total amount of food purchased by customers. If the waitress sold between \$600.00 and \$720.00 in food, then the amount of her daily pay should be between —
- F \$40.00 and \$48.00
 - G \$57.60 and \$65.60
 - H \$90.00 and \$108.00
 - J \$107.60 and \$125.60

59 At Candy's Sweet Shop, Sarah made c pounds of chocolate-covered raisins, which sell for \$1.50 a pound, and y pounds of yogurt-covered raisins, which sell for \$1.20 a pound. Sarah wants to make 40 pounds of a mixture of the two kinds of raisins that sells for \$1.35 a pound. Which system of equations can be used to find the number of pounds of each kind of raisin needed to produce the mixture?

A $c + y = 40$

$$1.50c + 1.20y = 1.35(40)$$

B $c + y = 40$

$$150c + 120y = 1.35(40)$$

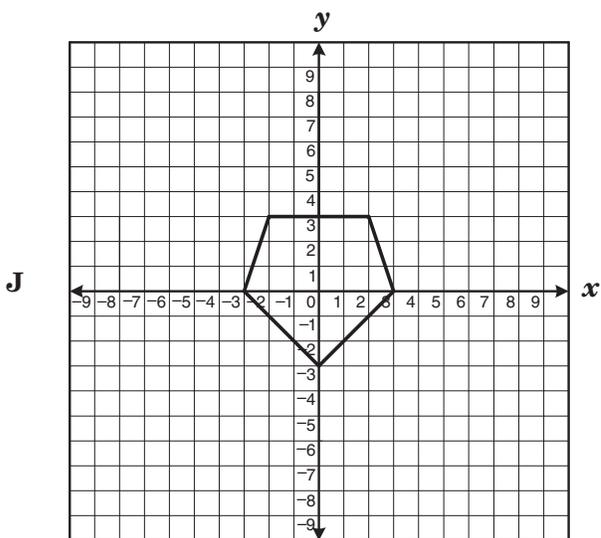
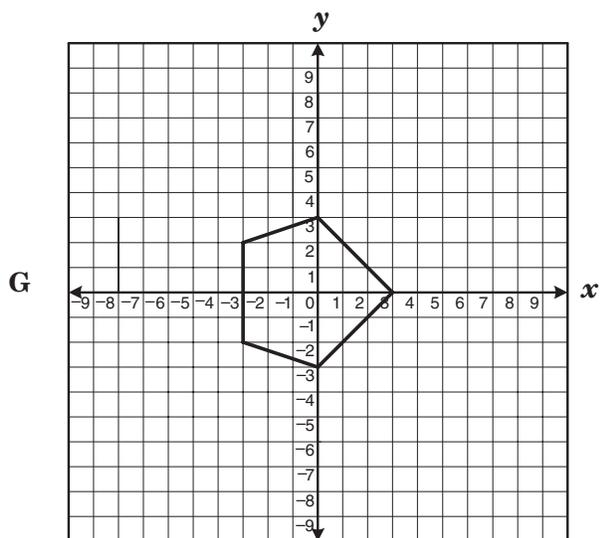
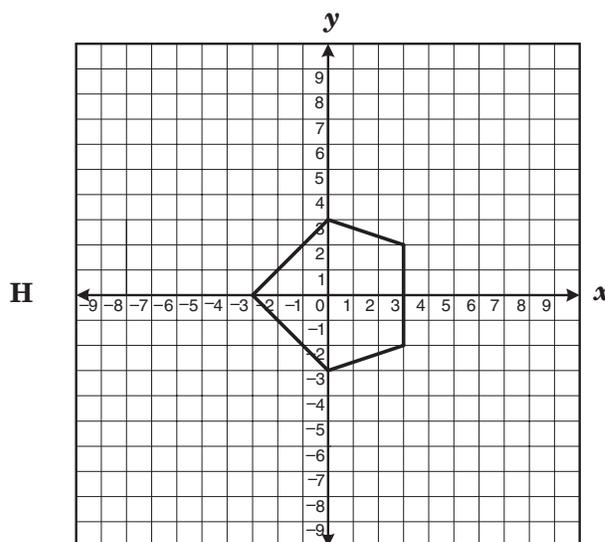
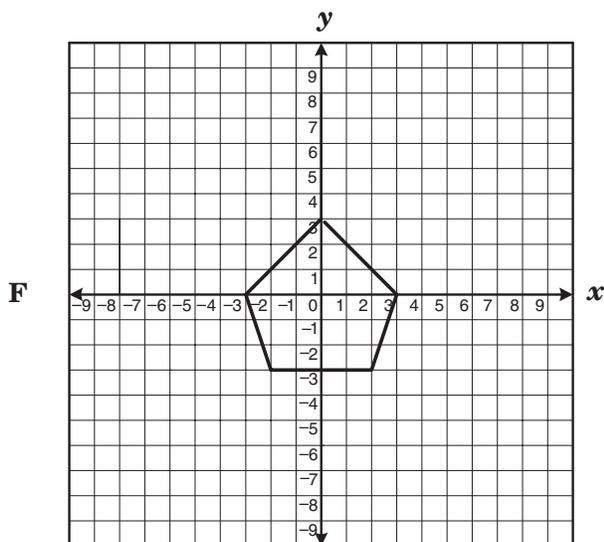
C $c + y = 40$

$$1.20c + 1.50y = 1.35(40)$$

D $c + y = 40$

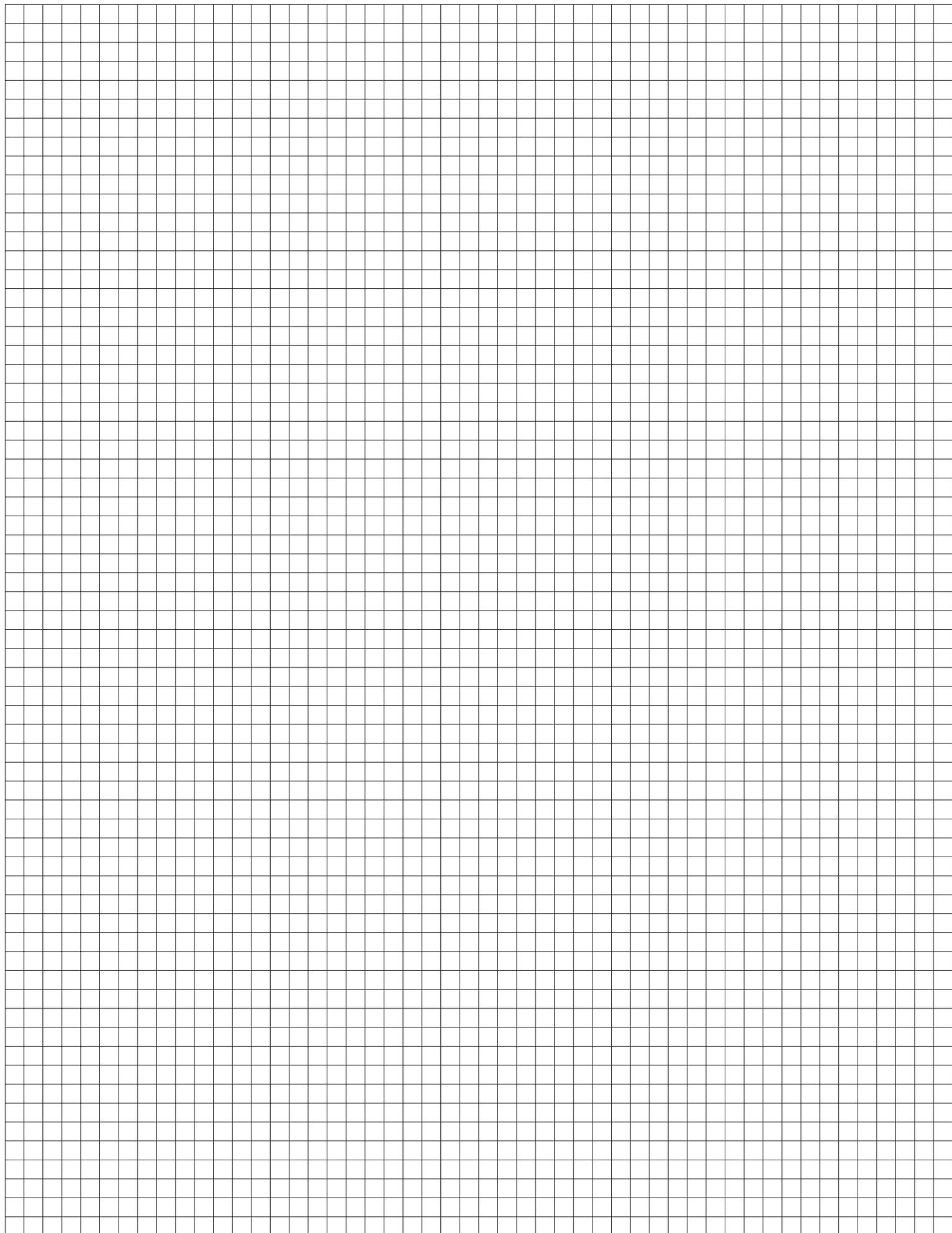
$$120c + 150y = 1.35(40)$$

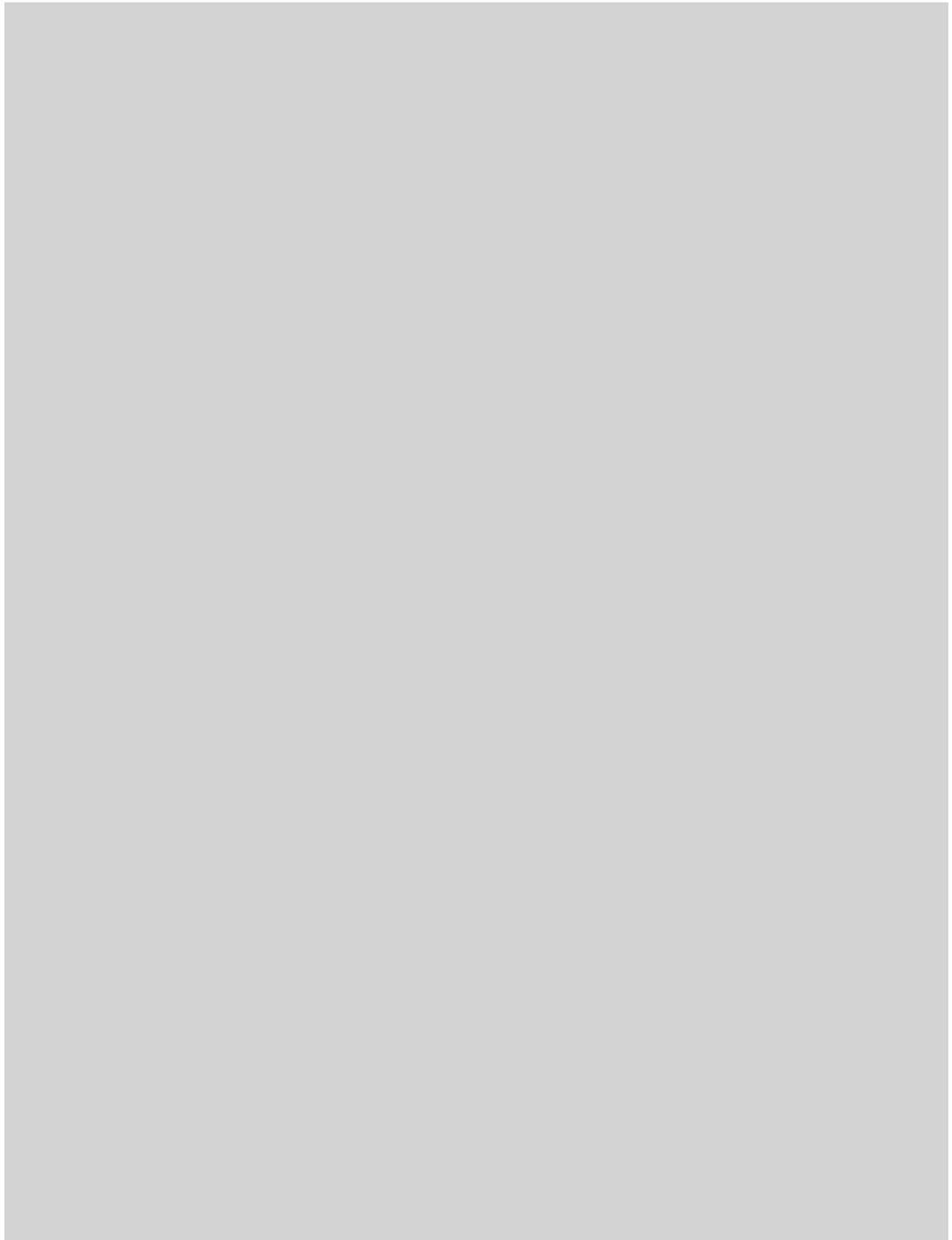
- 60 If the vertices of a polygon are $(-2, 3)$, $(2, 3)$, $(3, 0)$, $(0, -3)$, and $(-3, 0)$, which graph best represents the polygon?



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







SOCIAL STUDIES



DIRECTIONS

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

SAMPLE A

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

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



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

Yesterday, December 7, 1941—a date which will live in infamy—the United States of America was suddenly and deliberately attacked by naval and air forces of the Empire of Japan.

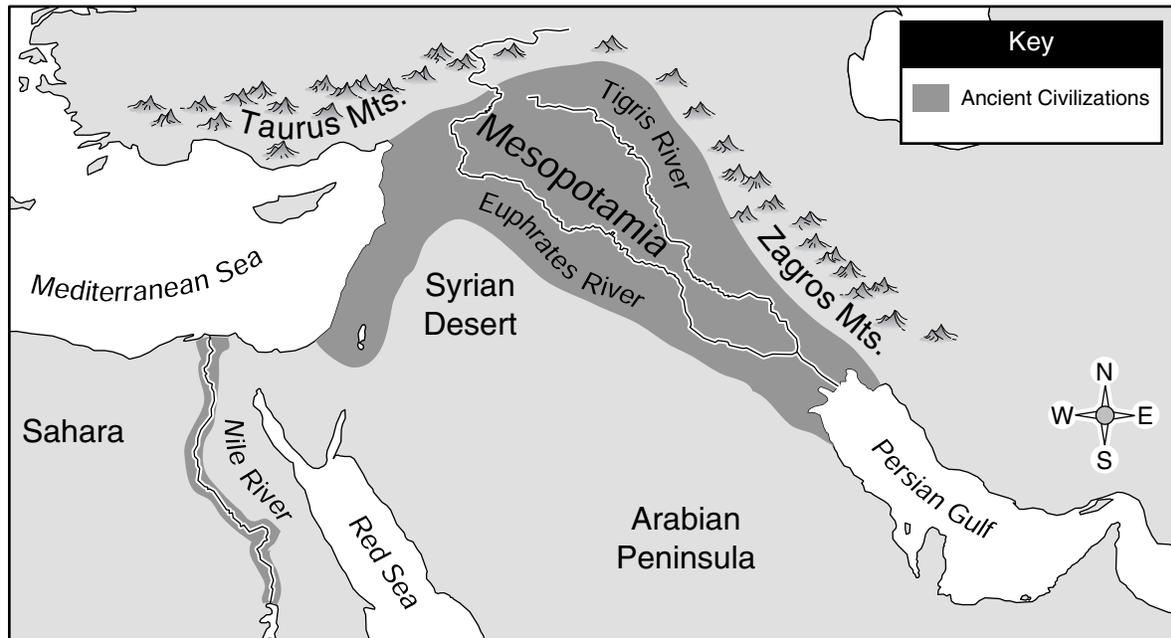
— *Franklin D. Roosevelt,*
Address to Congress, December 8, 1941

- 1 The quotation above refers to which event during World War II?
- A The attack on Guadalcanal
 - B The Battle of the Bulge
 - C The attack on Pearl Harbor
 - D The D-Day invasion
- 2 The ratification of the 19th Amendment in 1920 was a victory in the long struggle for women's equality because the amendment —
- F gave women the right to vote
 - G allowed women to hold political office
 - H guaranteed women the right to attend state universities
 - J made it illegal to discriminate against female job applicants

- 3 The primary environmental impact of the automobile has been —
- A the beautification of highways
 - B decreased demand for foreign oil
 - C increased air pollution
 - D the conservation of fossil fuels

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

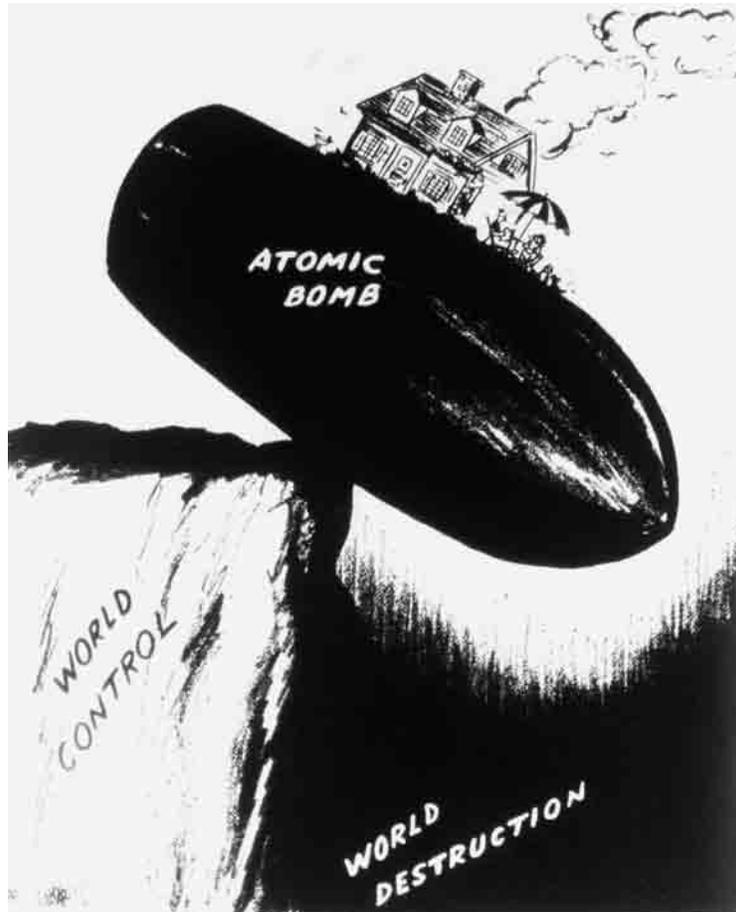
Ancient Civilizations, c. 2000 B.C.



- 4 Based on the map, it can be concluded that these early civilizations depended on —
- F seas for protection
 - G forests for wood
 - H rivers for water
 - J deserts for mineral resources

- 5 Which New Deal agency created a system of insurance for the elderly?
- A Social Security Administration
 - B National Labor Relations Board
 - C Federal Deposit Insurance Corporation
 - D Public Works Administration

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



Source: CORBIS

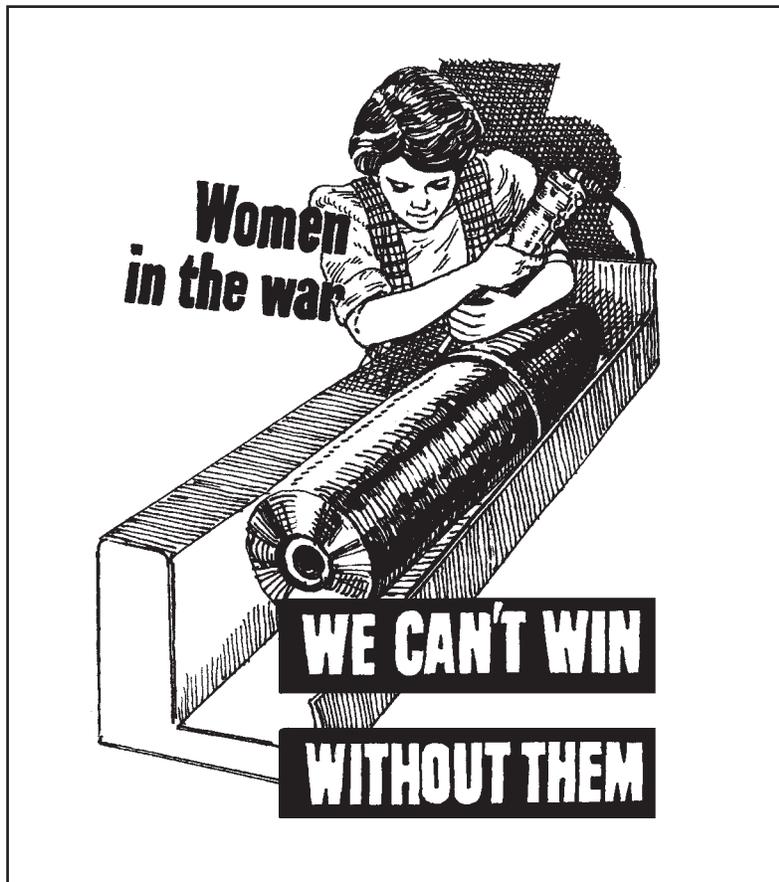
- 6 The point of view expressed in the cartoon above is that —
- F the atomic bomb has made the world a safer place
 - G the atomic bomb has saved the world from complete destruction
 - H the world has the power to control the use of nuclear weapons
 - J nuclear weapons will lead to the destruction of the world

- 7 Which of the following technological innovations has most greatly reduced the need for assembly-line workers in U.S. factories?
- A Personal computers
 - B Synthetic textiles
 - C Automated manufacturing
 - D Nuclear energy

- 8 The reform efforts of Susan B. Anthony contributed to the —
- F establishment of mental-health hospitals
 - G establishment of settlement houses
 - H passage of a women's suffrage amendment
 - J passage of an amendment to end child labor

- 9 The guarantee that every U.S. citizen facing criminal prosecution will have a speedy and public trial by an impartial jury is provided in the —
- A Declaration of Independence
 - B Mayflower Compact
 - C Articles of Confederation
 - D Bill of Rights

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



Source: National Oceanic Atmospheric Administration (NOAA)

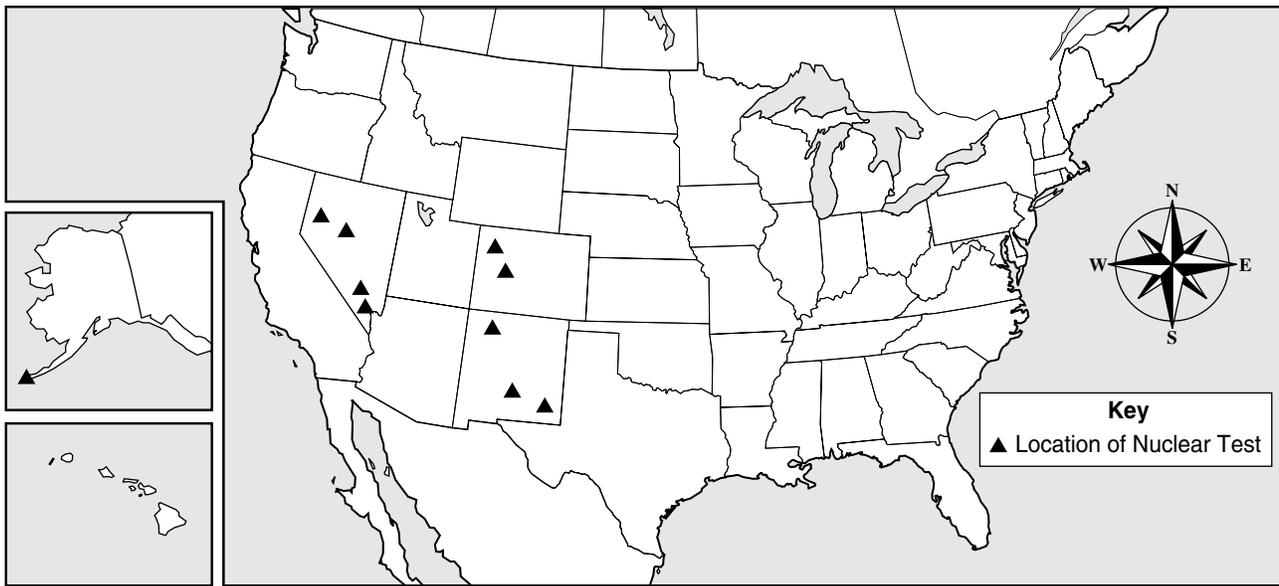
- 10 The World War II poster above shows that —
- F the U.S. government encouraged women to join the military
 - G only skilled women were recruited to join the workforce
 - H women who accepted wartime jobs worked long hours
 - J the U.S. government encouraged women to aid the war effort

- 11** The building of roads and canals in the United States in the early 19th century resulted in —
- A** stronger economic ties between the East and the West
 - B** sparse settlement west of the Appalachian Mountains
 - C** the establishment of numerous Native American trade routes
 - D** increased dependence on the Rio Grande as a trade route

- 12** As a result of increased immigration to the United States in the late 1800s and early 1900s, many immigrant families lived in tenements because —
- F** there was a lack of affordable housing in overcrowded cities
 - G** adequate housing was scarce on the Great Plains
 - H** they wanted to avoid living in ethnic neighborhoods
 - J** the U.S. government provided them with free housing

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

Selected U.S. Nuclear Test Locations



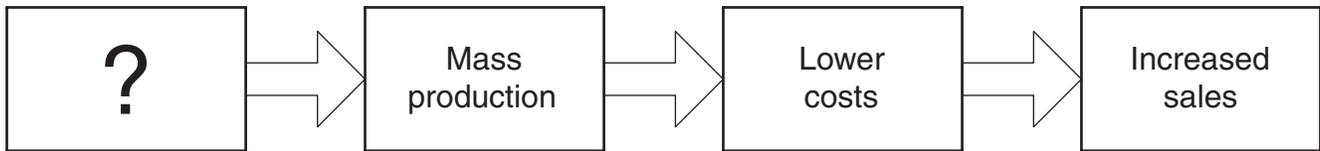
13 Which of the following factors best explains the locations of nuclear test sites shown on the map above?

- A Low population density
- B Ample natural resources
- C Frequently unstable weather conditions
- D Proximity to major highways

14 The most significant improvement to U.S. transportation in the late 1800s was the —

- F completion of the Erie Canal
- G invention of the steamboat
- H extension of the turnpike system
- J expansion of railroads

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



15 Which of the following completes the diagram above?

- A Higher wages
- B Increased advertising
- C Installment buying
- D Assembly line

16 Following World War I, President Woodrow Wilson wanted to create the League of Nations in order to —

- F protect the economic interests of the United States
- G increase the number of regional alliances
- H establish an organization to maintain world peace
- J develop a plan for global disarmament

17 During the 19th century many Native Americans were forced onto reservations. This contributed to poor health and an increase in the death rate primarily because —

- A many Native Americans went on hunger strikes
- B Native Americans had never grown crops before
- C reservation lands were largely unproductive
- D the livestock raised on reservations were diseased

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



Source: CORBIS

18 Which of the following would be the best caption for the cartoon above?

- F The Once-Mighty Third Reich Faces Defeat
- G Europe Is Conquered by Nazi Forces
- H Allied Forces Face Strong German Opposition
- J The Nazi Party Takes Control of Germany

- 19** What effect did the economic hardships of the Great Depression have on American voters' attitudes toward the federal government?
- A** Voters looked to the federal government for solutions to their economic concerns.
 - B** Most voters supported the idea of term limits for all elected federal officials.
 - C** Few voters paid attention to national politics, since only farmers suffered economically.
 - D** Voters believed that only states had the power to fix damaged economic institutions.
- 20** How did the Truman Doctrine reflect the post–World War II policy of containment?
- F** It confirmed the commitment of the United States to aid nations resisting communism.
 - G** It called for the disbanding of the North Atlantic Treaty Organization and the Warsaw Pact.
 - H** It established a fund to raise money for Radio Free Europe and the Voice of America.
 - J** It provided financial assistance to refugees fleeing war-torn Europe.
- 21** Why was the Virginia House of Burgesses a significant institution in colonial America?
- A** It established the principle of freedom of the press in the colonies.
 - B** It contributed to the growth of representative government in the colonies.
 - C** It organized opposition to the colonization of Canada.
 - D** It documented the early history of the colonies.
- 22** In 1925 attorney Clarence Darrow defended John Scopes in a trial that addressed the —
- F** teaching of the theory of evolution in public schools
 - G** constitutionality of child-labor laws
 - H** deportation of immigrants suspected of radical political beliefs
 - J** enforcement of Jim Crow laws in southern states

23 At the beginning of the 20th century, the lack of land available for urban expansion, along with advances in structural engineering and steel production, led Americans to build —

- A** shopping malls
- B** skyscrapers
- C** parking garages
- D** the transcontinental railroad

24 In October 1962 President John F. Kennedy announced that the Soviet Union was building nuclear missile bases in Cuba. How did the United States respond to this threat?

- F** By invading Cuba
- G** By establishing a naval blockade around Cuba
- H** By bombing Moscow
- J** By destroying the missile sites with air attacks

25 The economic decline of the 1930s was accelerated by —

- A** rising stock prices
- B** labor demands
- C** low tariffs
- D** bank failures

26 Public support for U.S. involvement in the Vietnam War declined during the late 1960s largely because of —

- F** criticism from the United Nations
- G** graphic television news coverage of the war
- H** the collapse of the Southeast Asia Treaty Organization
- J** the threat of Chinese intervention

27 In reaction to the passage of the 13th, 14th, and 15th Amendments to the U.S. Constitution, many states passed Jim Crow laws. The purpose of these laws was to —

- A** encourage integration
- B** protect voting rights
- C** enforce segregation
- D** outlaw Black Codes

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

The free nations have learned the fateful lesson of the 1930s. That lesson is that aggression must be met firmly. Appeasement leads only to further aggression and ultimately to war.

— *President Harry Truman, 1950*

In the 1930s the members of the League of Nations became indifferent to direct and indirect aggression in Europe, Asia, and Africa. The result was to strengthen and stimulate aggressive forces that made World War II inevitable.

— *President Dwight D. Eisenhower, 1958*

- 28 In the excerpts above, both presidents refer to events of the 1930s that directly involved the —
- F assassination of Archduke Franz Ferdinand
 - G dropping of atomic bombs on Japan
 - H unchecked militarism of Nazi Germany
 - J economic effects of the worldwide depression

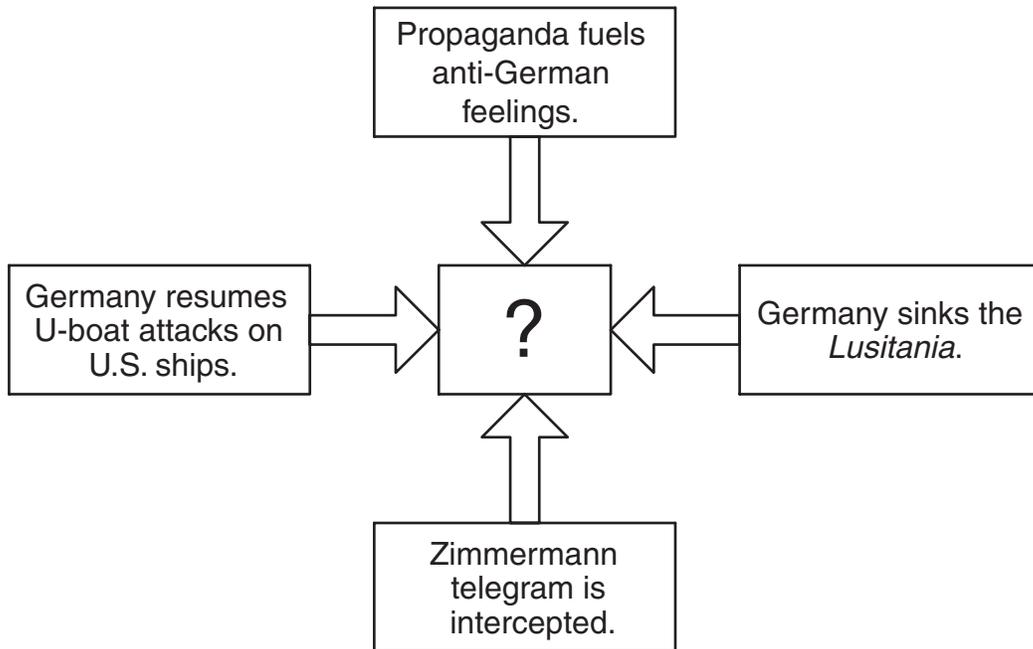
- 29 One purpose of the G.I. Bill, which was passed by the U.S. government during World War II, was to —
- A ease fears about the threat of Soviet expansion
 - B prosecute those suspected of having communist sympathies
 - C pay veterans large cash bonuses when they returned home
 - D provide educational opportunities to returning veterans

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

- USS *Maine* sinks.
- Spanish-American War begins.
- United States acquires Puerto Rico and Guam.

- 30 The events in the box above took place in what year?
- F 1865
 - G 1898
 - H 1914
 - J 1929

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



31 Which of the following best completes the diagram above?

- A Reasons for U.S. involvement in World War I
- B Reasons for U.S. enforcement of the Open Door policy
- C Reasons for U.S. annexation of the Philippines
- D Reasons for U.S. involvement in World War II

32 Passed during the Progressive Era, the 17th Amendment was intended to make the government of the United States more —

- F conservative in financial matters
- G powerful in world affairs
- H responsive to the people
- J open to immigrants

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

- Mandatory rationing
- Increased employment
- Economic mobilization

- 33 The items listed above are most closely associated with the —
- A domestic effects of World War II
 - B impact of the Jazz Age
 - C causes of the Cold War
 - D social effects of Progressive reforms

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

If you try to build this canal there will not be trees enough on the isthmus to make crosses for the graves of your laborers.

— *French resident in Panama, 1880s*

- 34 What was the reasoning behind this statement about the French decision to build a canal across Panama?
- F European imperialism would devastate the Panamanian environment.
 - G Deadly tropical diseases would prevent the completion of the project.
 - H The amount of work necessary to complete the canal would cost too much money.
 - J Local inhabitants would assist any foreign presence in the region.

- 35 Which of the following is a basic characteristic of a market economy?
- A The government owns or controls the means of production.
 - B The economy is dependent on subsistence farming.
 - C Consumer demand determines what is to be produced.
 - D Government agencies set wages and prices.

- 36 The unalienable rights referred to in the Declaration of Independence are rights that —
- F are guaranteed only to natural-born citizens
 - G cannot be taken away by a government without due process of law
 - H are enumerated in the Magna Carta
 - J are limited by a bill of rights

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

- Built sod houses
- Used barbed-wire fences
- Burned cow and buffalo chips for fuel

- 37 Which of the following would be the best title for the information in the box?
- A How Great Plains Farmers Adapted to a Lack of Wood
 - B Methods Used by Forty-Niners to Stake Claims
 - C Causes of Range Wars Between Farmers and Ranchers
 - D How Native Americans and Farmers Cooperated

- 38 One reason the year 1929 is significant in U.S. history is that it marked the beginning of the —
- F Spanish-American War
 - G Gilded Age
 - H Progressive Era
 - J Great Depression

- 39 The internment in the United States of Japanese Americans during World War II —
- A prevented Japanese military attacks on the West Coast of the United States
 - B deprived them of the civil rights and liberties guaranteed to all U.S. citizens
 - C led to the internment of U.S. citizens in Japanese concentration camps
 - D violated Geneva Convention rules about the treatment of prisoners of war

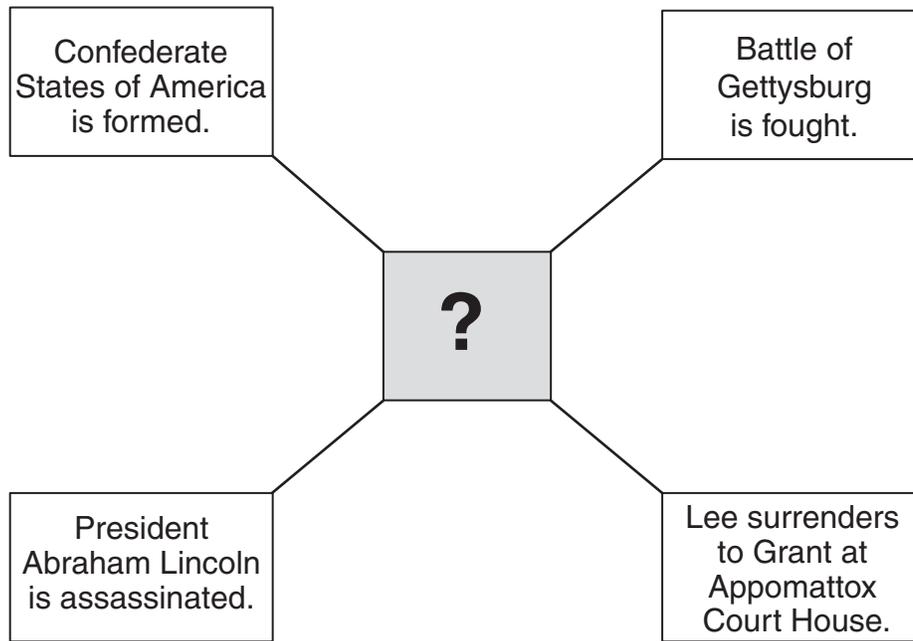
40 What did the image of the flapper represent in 1920s American culture?

- F** Support for the temperance movement
- G** Rural fundamentalism
- H** New roles and attitudes for women
- J** Support for laissez-faire policies

41 At the end of the 19th century, most owners of big businesses disliked competition because it —

- A** limited research and innovation
- B** eliminated variety in products
- C** raised consumer prices
- D** reduced profits

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



42 Which time period best completes the diagram above?

- F 1861–1865
- G 1914–1918
- H 1941–1945
- J 1950–1953

43 Which of the following was a characteristic of representative government in colonial America?

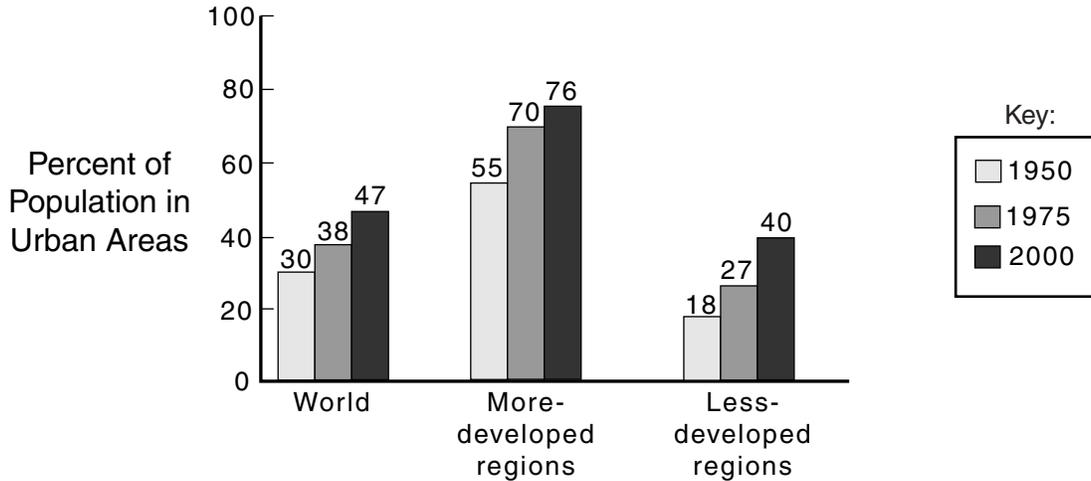
- A It allowed one person to make the critical decisions.
- B It gave all political power to a few key leaders.
- C It gave citizens a voice in their government.
- D It prohibited taxation by the government.

44 Which of the following geographic features played a major role in U.S. military strategy in the Pacific during World War II?

- F Deserts
- G Volcanoes
- H Fertile grasslands
- J Island chains

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

Percent of Population in Urban Areas



Source: United Nations

- 45 It can be concluded from the graph above that —
- A more-developed regions are not as urbanized as less-developed regions
 - B both more-developed and less-developed regions have become increasingly urbanized since 1950
 - C since 1975 urbanization has declined in both more-developed and less-developed regions
 - D urbanization has not occurred in less-developed regions since 1975

- 46 The passage of the Homestead Act in 1862 encouraged settlers to move to the Great Plains, which in turn led to —
- F increased agricultural output
 - G increased tensions between the United States and Canada
 - H decreased European immigration to the United States
 - J fewer job opportunities in eastern factories

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

Excerpt from Nobel Prize Acceptance Speech

Man must evolve for all human conflict a method which rejects revenge, aggression, and retaliation. The foundation of such a method is love.

— *Martin Luther King, Jr.*,
December 10, 1964

- 47 According to the excerpt above, what was the philosophy of Martin Luther King, Jr., during the Civil Rights movement?
- A Limited violence
 - B Complete submission
 - C Nonviolent resistance
 - D Militant action

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

. . . watercourses undeveloped, waste places unreclaimed, forests untended, fast disappearing without plan or prospect of renewal, unregarded waste heaps at every mine.

— *Woodrow Wilson, Inaugural Address*,
March 4, 1913

- 48 In his speech, President Wilson was referring to the —
- F need to protect the natural resources of the United States
 - G success of Progressive legislation
 - H growing population of immigrants
 - J impact of World War I on Europe's environment

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

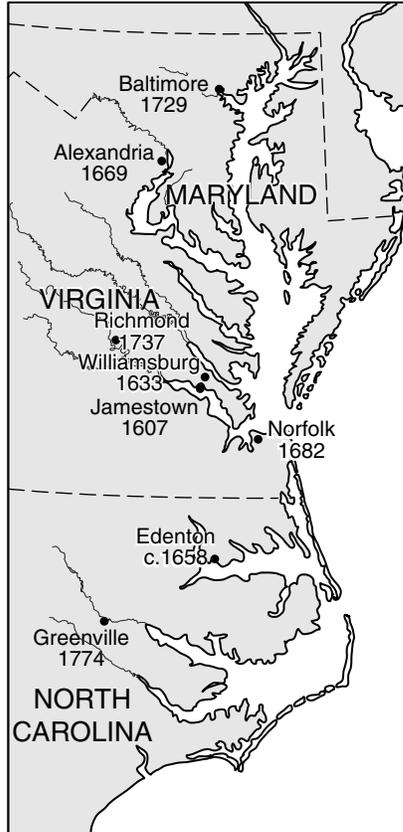
The freedom of the press is one of the greatest safeguards of liberty, and can never be restrained but by severe governments.

— *George Mason, 1787*

- 49 The excerpt above implies that —
- A democratic governments limit freedom of the press
 - B a free press is essential to a free society
 - C freedom of the press is more important than democracy
 - D democratic governments should subsidize the press
- 50 President Franklin D. Roosevelt's New Deal was an attempt to —
- F keep the national government out of the private economy
 - G prevent Nazi Germany from invading Great Britain
 - H end the Great Depression and restore a sound economy
 - J regulate the power of the courts to declare legislative acts unconstitutional

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

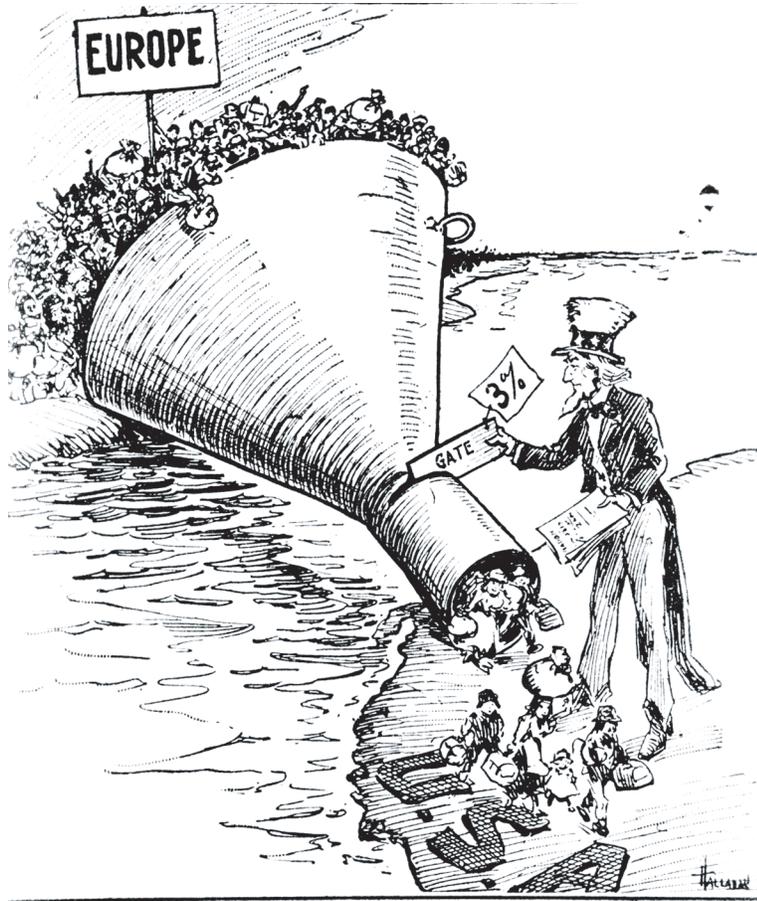
Placement of Colonial Settlements



- 51 According to the map, which geographic factor most influenced the placement of settlements by early European colonists?
- A Waterways for trade
 - B Warm climate for health
 - C Broad plains with fertile soils for farming
 - D Mountains for defense against enemies

- 52 The primary purpose of the first 10 amendments to the U.S. Constitution is to —
- F limit government spending
 - G strengthen the legislative branch
 - H protect individual freedoms and rights
 - J guarantee the authority of state governments

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



THE ONLY WAY TO HANDLE IT.

Source: CORBIS

- 53 Which of the following issues is addressed in the cartoon above?
- A World War I
 - B Industrial growth
 - C Westward expansion
 - D Immigration restrictions

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

Europe in 1914



Europe in 1924



54 Based on the two maps above, it can be concluded that as a result of World War I —

- F the number of countries in Europe increased
- G eastern European countries became possessions of Great Britain and France
- H the boundaries of all European nations remained unchanged
- J Italy and France lost territory

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



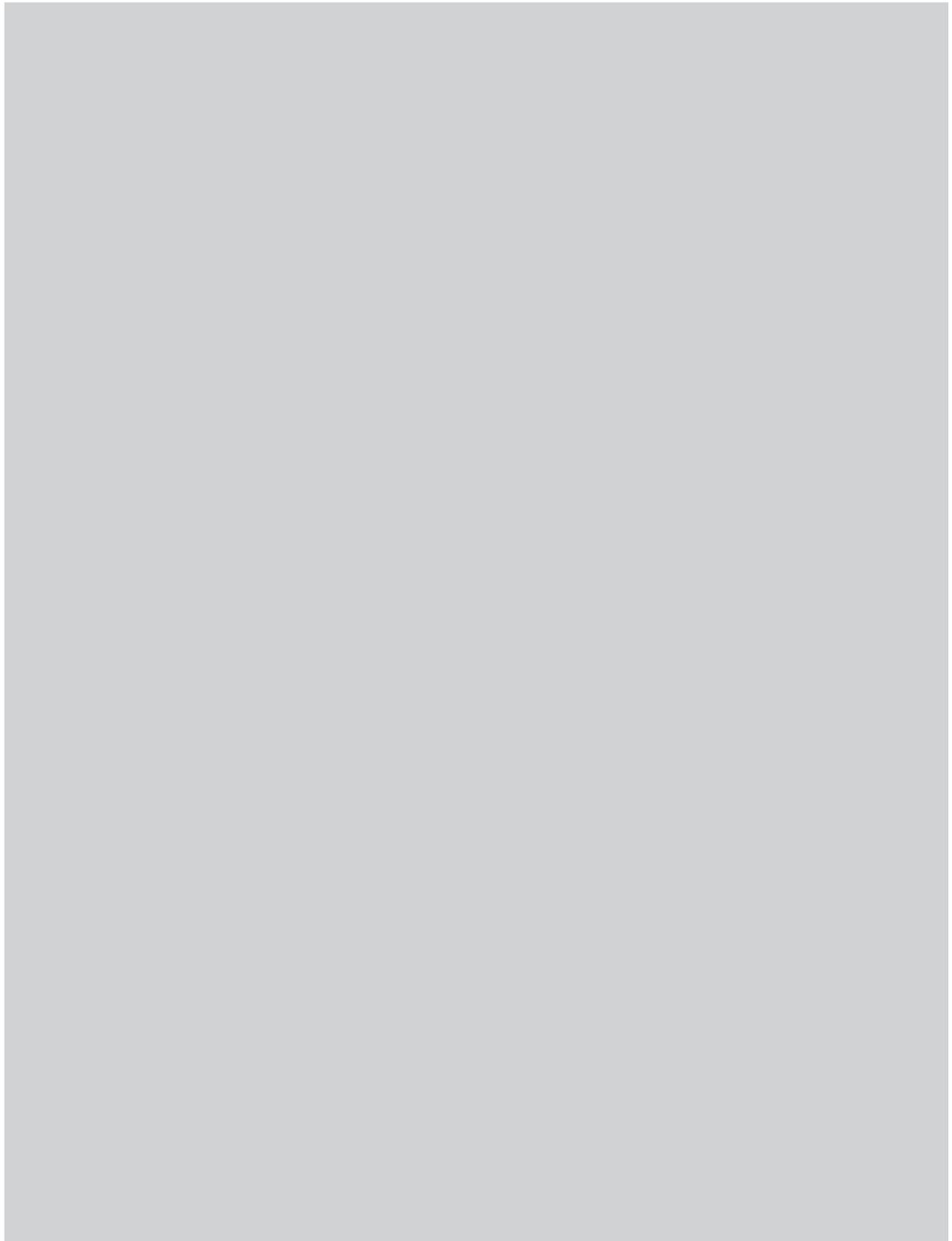
Man the GUNS Join the NAVY

Source: CORBIS

- 55 During World War II, the purpose of posters like the one above was to —
- A raise money for the war effort
 - B recruit young men to serve in the military
 - C encourage citizens to comply with rationing laws
 - D gain support from foreign countries for the U.S. war effort

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





SCIENCE

FORMULA CHART

| | |
|---|-----------------------------------|
| Density = $\frac{\text{mass}}{\text{volume}}$ | $D = \frac{m}{v}$ |
| $\left(\begin{array}{c} \text{heat gained} \\ \text{or lost} \end{array} \right) = \left(\begin{array}{c} \text{mass in} \\ \text{grams} \end{array} \right) \left(\begin{array}{c} \text{change in} \\ \text{temperature} \end{array} \right) \left(\begin{array}{c} \text{specific} \\ \text{heat} \end{array} \right)$ | $Q = (m)(\Delta T)(C_p)$ |
| Speed = $\frac{\text{distance traveled}}{\text{time}}$ | $v = \frac{d}{t}$ |
| Acceleration = $\frac{\text{final velocity} - \text{initial velocity}}{\text{change in time}}$ | $a = \frac{v_f - v_i}{\Delta t}$ |
| Momentum = mass \times velocity | $p = mv$ |
| Force = mass \times acceleration | $F = ma$ |
| Work = force \times distance | $W = Fd$ |
| Power = $\frac{\text{work}}{\text{time}}$ | $P = \frac{W}{t}$ |
| % efficiency = $\frac{\text{work output}}{\text{work input}} \times 100$ | $\% = \frac{W_O}{W_I} \times 100$ |
| Kinetic energy = $\frac{1}{2} (\text{mass} \times \text{velocity}^2)$ | $KE = \frac{mv^2}{2}$ |
| 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 = $\frac{\text{voltage}}{\text{resistance}}$ | $I = \frac{V}{R}$ |
| Electrical power = voltage \times current | $P = VI$ |
| Electrical energy = power \times time | $E = Pt$ |

| Constants/Conversions | | |
|--|------------|------------------|
| $g = \text{acceleration due to gravity} = 9.8 \text{ m/s}^2$ | | |
| $c = \text{speed of light} = 3 \times 10^8 \text{ m/s}$ | | |
| speed of sound = 343 m/s at sea level and 20°C | | |
| $1 \text{ cm}^3 = 1 \text{ mL}$ | | |
| 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

Atomic number — 14
 Symbol — **Si**
 Atomic mass — 28.086
 Silicon — Name

| Group | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |
|-------|---------------------------------|----------------------------------|-----------------------------------|-------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|---------------------------------|----------------------------------|--------------------------------|--------------------------------|----------------------------------|---------------------------------|----------------------------------|----------------------------------|---------------------------------|--------------------------------|-----------------------------|
| | IA | IIA | IIIB | IVB | VB | VIB | VIIIB | VIII | VIII | VIII | IB | IIB | IIIA | IVA | VA | VIA | VIIA | VIIIA | |
| 1 | H 1.008 Hydrogen | | | | | | | | | | | | | | | | | He 4.0026 Helium | |
| 2 | Li 6.941 Lithium | Be 9.012 Beryllium | | | | | | | | | | | | B 10.81 Boron | C 12.011 Carbon | N 14.007 Nitrogen | O 15.999 Oxygen | F 18.998 Fluorine | Ne 20.179 Neon |
| 3 | Na 22.990 Sodium | Mg 24.305 Magnesium | | | | | | | | | | | Al 26.982 Aluminum | Si 28.086 Silicon | P 30.974 Phosphorus | S 32.066 Sulfur | Cl 35.453 Chlorine | Ar 39.948 Argon | |
| 4 | K 39.098 Potassium | Ca 40.08 Calcium | Sc 44.956 Scandium | Ti 47.88 Titanium | V 50.942 Vanadium | Cr 51.996 Chromium | Mn 54.938 Manganese | Fe 55.847 Iron | Co 58.933 Cobalt | Ni 58.69 Nickel | Cu 63.546 Copper | Zn 65.39 Zinc | Ga 69.72 Gallium | Ge 72.61 Germanium | As 74.922 Arsenic | Se 78.96 Selenium | Br 79.904 Bromine | Kr 83.80 Krypton | |
| 5 | Rb 85.468 Rubidium | Sr 87.62 Strontium | Y 88.906 Yttrium | Zr 91.224 Zirconium | Nb 92.906 Niobium | Mo 95.94 Molybdenum | Tc (98) Technetium | Ru 101.07 Ruthenium | Rh 102.906 Rhodium | Pd 106.42 Palladium | Ag 107.868 Silver | Cd 112.41 Cadmium | In 114.82 Indium | Sn 118.71 Tin | Sb 121.763 Antimony | Te 127.60 Tellurium | I 126.904 Iodine | Xe 131.29 Xenon | |
| 6 | Cs 132.905 Cesium | Ba 137.33 Barium | La 138.906 Lanthanum | Hf 178.49 Hafnium | Ta 180.948 Tantalum | W 183.84 Tungsten | Re 186.207 Rhenium | Os 190.23 Osmium | Ir 192.22 Iridium | Pt 195.08 Platinum | Au 196.967 Gold | Hg 200.59 Mercury | Tl 204.383 Thallium | Pb 207.2 Lead | Bi 208.980 Bismuth | Po (209) Polonium | At (210) Astatine | Rn (222) Radon | |
| 7 | Fr (223) Francium | Ra 226.025 Radium | Ac 227.028 Actinium | Rf (261) Rutherfordium | Db (262) Dubnium | Sg (263) Seaborgium | Bh (262) Bohrium | Hs (265) Hassium | Ir 109 Meitnerium | Pt 110 Darmstadtium | | | | | | | | | |

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

| | | | | | | | | | | | | | |
|---------------------------------|--------------------------------------|----------------------------------|-----------------------------------|---------------------------------|---------------------------------|-----------------------------------|---------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------------------------------|----------------------------------|----------------------------------|
| Ce 140.12 Cerium | Pr 140.908 Praseodymium | Nd 144.24 Neodymium | Pm (145) Promethium | Sm 150.36 Samarium | Eu 151.97 Europium | Gd 157.25 Gadolinium | Tb 158.925 Terbium | Dy 162.50 Dysprosium | Ho 164.930 Holmium | Er 167.26 Erbium | Tm 168.934 Thulium | Yb 173.04 Ytterbium | Lu 174.967 Lutetium |
| Th 232.038 Thorium | Pa 231.036 Protactinium | U 238.029 Uranium | Np 237.048 Neptunium | Pu (244) Plutonium | Am (243) Americium | Cm (247) Curium | Bk (247) Berkelium | Cf (251) Californium | Es (252) Einsteinium | Fm (257) Fermium | Md (258) Mendelevium | No (259) Nobelium | Lr (262) Lawrencium |

Lanthanide Series

Actinide Series

DIRECTIONS

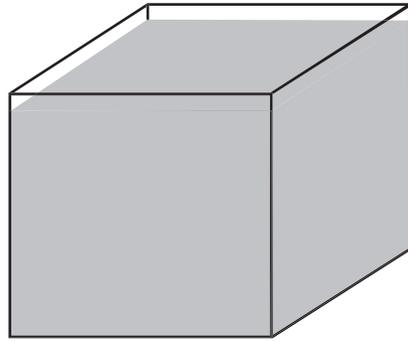
Read each question and choose the best answer. Then fill in the correct answer on your answer document.

SAMPLE A

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

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

SAMPLE B



Mass = 40 g

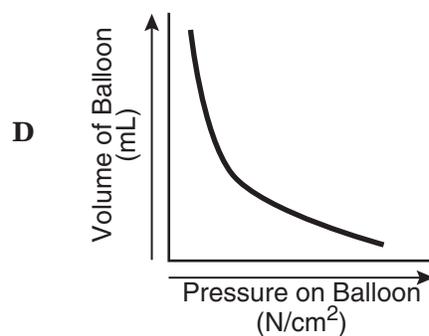
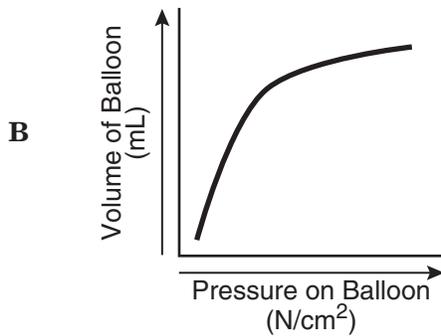
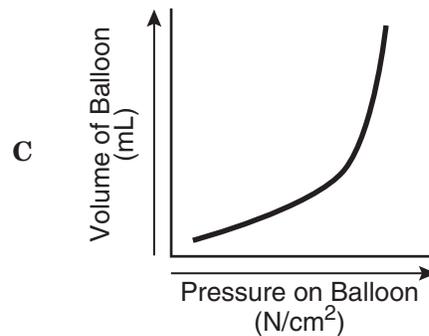
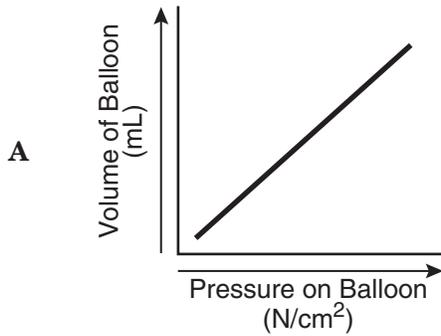
Volume = 20 mL

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



| Pressure on Balloon (N/cm ²) | Volume of Balloon (mL) |
|--|------------------------|
| 0.35 | 980 |
| 0.70 | 400 |
| 1.04 | 320 |
| 1.42 | 220 |
| 1.75 | 180 |

- 1 While studying the relationship between the pressure and the volume of a gas, members of a science class conducted an experiment in which they changed the pressure on a balloon and then measured the balloon's volume. They collected the data above. Which graph correctly represents these data?



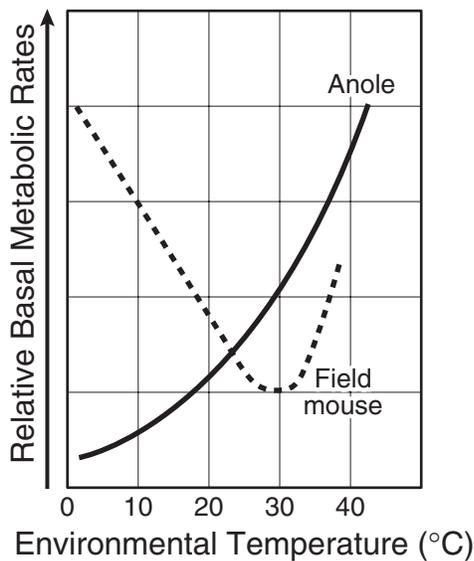
- 2 Some bacteria thrive in hostile environments, such as salt flats, boiling-hot springs, and carbonate-rock interiors, primarily because of bacteria's —

F biochemical diversity
G small sizes
H round shapes
J methods of movement

- 4 An unidentified element has many of the same physical and chemical properties as magnesium and strontium but has a lower atomic mass than either of these elements. What is the most likely identity of this element?

F Sodium
G Beryllium
H Calcium
J Rubidium

Mouse and Anole BMR



- 3 The graph shows the relative basal metabolic rates of a field mouse and an anole (a type of lizard) at different temperatures. According to this information, the field mouse —

A uses the least energy when the environmental temperature is 30°C
B is able to control its body temperature
C uses less energy at 20°C than the anole does
D is unaffected by environmental temperatures

A to Z Garlic

Guaranteed to lower your cholesterol levels and promote a healthy heart. See what others are saying about A to Z Garlic:

“I feel great since starting my new garlic diet!”
—Mrs. A. Smith

“I started on two tablets a day, and I’m really seeing a difference. My wife says I look great!”
—Mr. S. Johnson

“My pulse used to race, but after taking A to Z Garlic Extract for a month, it’s normal!”
—Mrs. D. Jones

Join those who have found good health with A to Z products and try A to Z Garlic **TODAY!**

Call toll-free to find the location of the store nearest you: 1-800-555-1827

Very Good Garlic Extract

A good way to help prevent heart disease, lower “bad” LDL cholesterol, and raise “good” HDL cholesterol levels.

FACTS ABOUT GARLIC

- 1000 male volunteers age 50 and above who ate 3 grams of garlic per day in addition to a normal diet for 16 weeks experienced a 20% reduction of cholesterol in the blood, according to researchers at Metropolitan University.
- 1000 male volunteers age 50 and above who ate a normal diet for 16 weeks failed to reduce cholesterol in the blood.

Try our product to enjoy the benefits of garlic. Our extraction process ensures that you will get all the benefits of raw garlic without the odor. Call for a store near you.

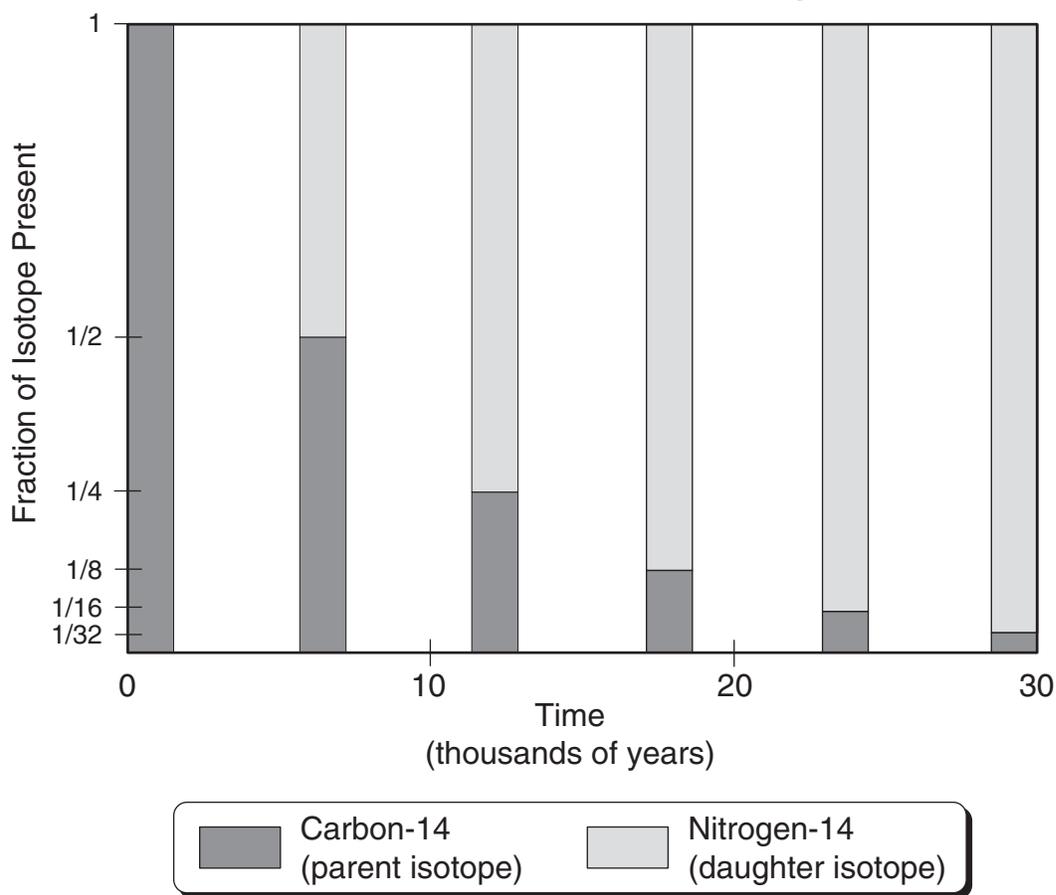
1-800-555-1715

or visit our website at:

www.verygoodgarlicextract.com

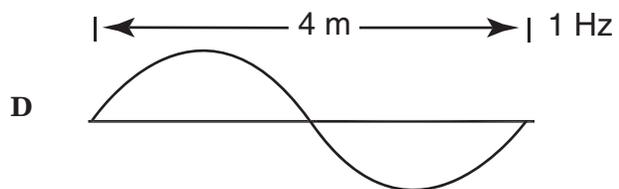
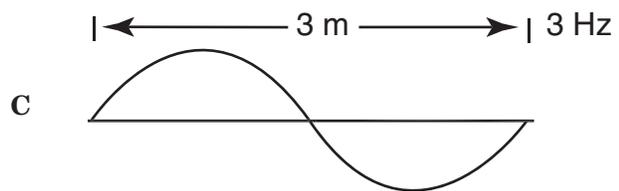
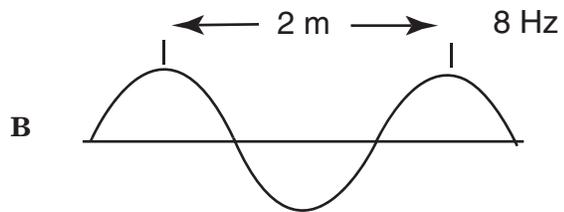
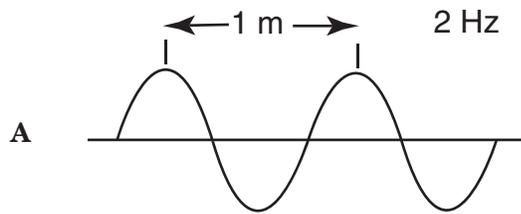
- 5 A magazine included advertisements for two different garlic supplements to promote healthy hearts. The advertisement for Very Good Garlic Extract presents evidence that is more valid because —
- A information was gathered in a controlled manner
 - B it lacks a guarantee
 - C it lacks personal testimonials to the product’s effectiveness
 - D information was gathered in more than one country

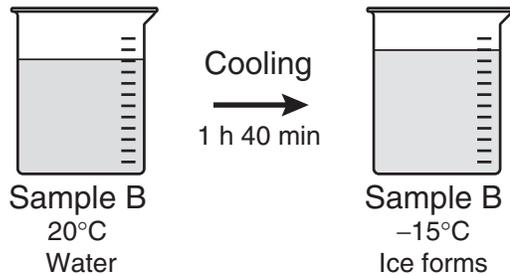
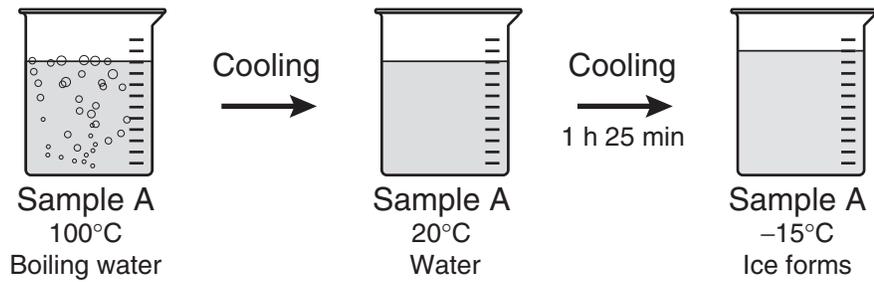
Carbon-14 Radioactive Decay



- 6 The graph shows the amount of carbon-14 in tissue over time. According to the graph, if a bone contains $1/8$ the amount of carbon-14 that it did originally, its approximate age is —
- F 5,700 years
 - G 11,400 years
 - H 17,100 years
 - J 22,800 years

7 Which wave has the greatest velocity?





- 8 Which is the best question to ask before developing a reasonable hypothesis for the phenomenon shown above?
- F** Why does water crystallize into a solid below 0°C instead of remaining a liquid?
- G** How will the freezing time from 20°C to -15°C change if each container is covered?
- H** Why does boiling the water cause it to freeze more quickly when cooled from 20°C to -15°C?
- J** What is the precise boiling point of the water in Sample A after it has been heated?

| | Group 1 | Group 2 | Group 3 | Group 4 |
|----------------------|---|---|---|---|
| Procedure Used | Living S-strain bacterial cells injected into healthy mouse | Living R-strain bacterial cells injected into healthy mouse | Killed S-strain bacterial cells injected into healthy mouse | Killed S-strain and living R-strain bacterial cells mixed and injected into healthy mouse |
| Results of Procedure | Mouse died; living S-strain cells found in mouse | Mouse remained healthy; no living R-strain cells found in mouse | Mouse remained healthy; no living S-strain cells found in mouse | Mouse died; living S-strain cells found in mouse |

- 9 This chart shows the results of an experiment performed in the 1920s using a bacterial species that causes pneumonia in humans. The experiment involved several procedures using two different bacterial strains, R and S. What is a possible explanation for the results in Group 2?
- A Living S-strain bacteria can transform into a pathogenic form of R-strain bacteria.
 - B Living R-strain bacteria are controlled by a mouse's immune system.
 - C Dead S-strain bacteria can cause disease.
 - D Dead R-strain bacteria can confer resistance to S-strain bacteria.

10 What is the efficiency of an air conditioner if there is a work input of 320 J and a work output of 80 J?

- F 4%
- G 25%
- H 240%
- J 400%

11 Beechdrops (*Epifagus virginiana*) are leafless plants that lack chlorophyll. Beechdrops get their nourishment from the roots of beech trees, which reduces the amount of nutrients available to the trees themselves. This interaction is best described as —

- A predatory
- B parasitic
- C commensalistic
- D mutualistic

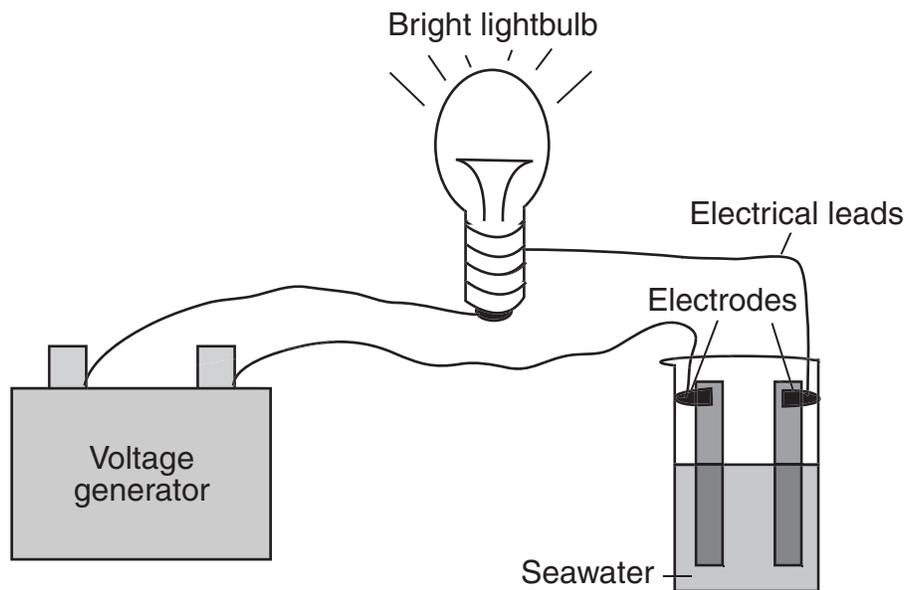
- 12** After shooting a cannonball, a cannon recoils with a much lower velocity than the cannonball. This is primarily because, compared to the cannonball, the cannon has a —
- F** much greater mass
 - G** smaller amount of momentum
 - H** greater kinetic energy
 - J** smaller force applied to it
- 13** Which of these changes in rocks is a physical change?
- A** Acid rain damaging marble
 - B** Iron in rock combining with oxygen to form hematite
 - C** Carbonic acid weathering limestone
 - D** An ice wedge shattering a slab of shale
- 14** When trying to spear a fish in water, a person needs to take into account the way light bends as it moves from water into air. The bending of light as it passes from one medium into another is known as —
- F** reflection
 - G** refraction
 - H** diffraction
 - J** polarization
- 15** Reactions that produce toxic gases should be performed in a —
- A** laboratory fume hood
 - B** beaker with a watch glass on top
 - C** well-ventilated area of the lab
 - D** warm, airtight drying oven

Acceleration of Toy Cars

| | Group Q | Group R | Group S | Group T |
|----------------------------------|---------|---------|---------|---------|
| Trial 1 Time (m/s ²) | 9.8 | 10.2 | 9.8 | 10.5 |
| Trial 2 Time (m/s ²) | 9.4 | 11.4 | 11.5 | 11.4 |
| Trial 3 Time (m/s ²) | 8.7 | 11.5 | 9.8 | 11.6 |
| Trial 4 Time (m/s ²) | 8.2 | 11.9 | 5.6 | 11.8 |

- 16 These data were gathered by four groups of students. Each group performed four trials to determine the acceleration rate of a toy car. Which group had the most-consistent data?
- F Group Q
 - G Group R
 - H Group S
 - J Group T

- 17 Swimmers find that they can float more easily in the ocean than in a freshwater pond. The most likely reason for this phenomenon is that the —
- A viscosity of pond water is greater than that of ocean water
 - B density of ocean water is higher than that of pond water
 - C temperature of pond water is lower than that of ocean water
 - D mass of ocean water is greater than that of pond water

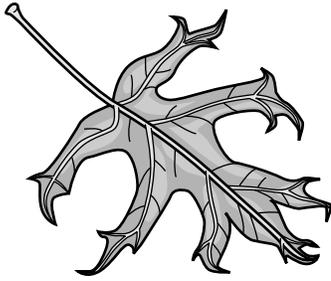


18 In this apparatus, the seawater is an example of a —

- F strong electrolyte
- G weak acid
- H nonelectrolyte
- J strong base

19 Which of the following leaf types is most likely to help a plant survive in an arid habitat?

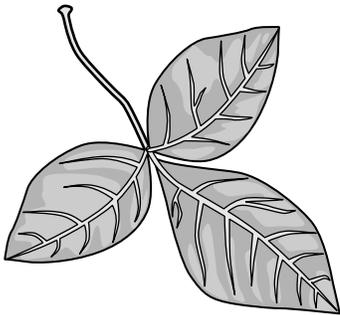
A



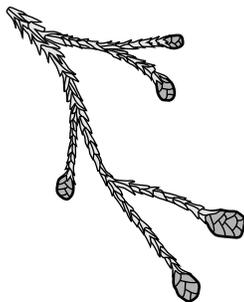
B



C



D



20 How many newtons of force does a 50.0 kg deer exert on the ground because of gravity? Record and bubble in your answer on the answer document.

21 A mechanic used a hydraulic lift to raise a 12,054 N car 1.89 m above the floor of a garage. It took 4.75 s to raise the car. What was the power output of the lift?

A 489 W

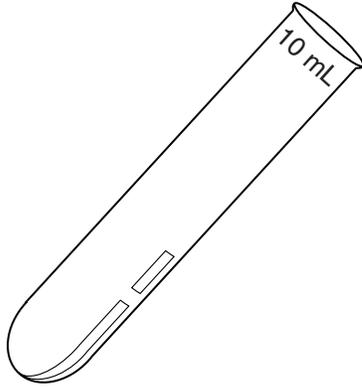
B 1815 W

C 4796 W

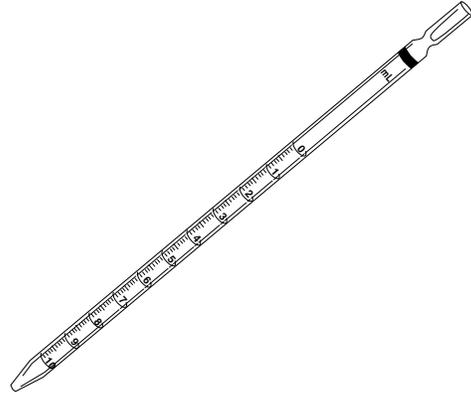
D 30,294 W

22 Which of these will give the most precise measure of a 10-milliliter volume?

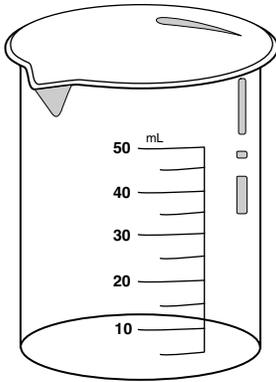
F



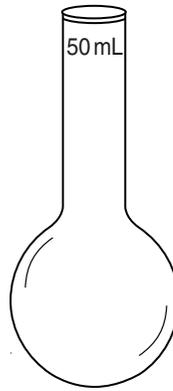
H



G



J



Conditions in Four Containers of Water

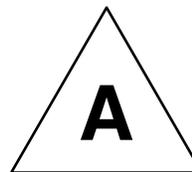
| Container | Temperature (°C) | Pressure (kPa) |
|-----------|------------------|----------------|
| Q | 10 | 204.5 |
| R | 20 | 204.5 |
| S | 30 | 101.3 |
| T | 40 | 101.3 |

23 The table shows temperature and pressure in four containers holding the same amount of water. According to the table, in which container can the most sodium chloride be dissolved in the water?

- A Q
- B R
- C S
- D T

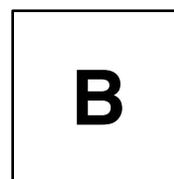
24 Classification symbols for certain fire extinguishers are shown below. Which class of fire extinguisher should be used when a hot plate overheats and catches on fire?

F



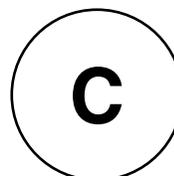
Ordinary combustibles

G



Flammable liquids

H

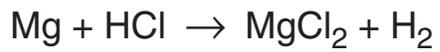


Electrical equipment

J

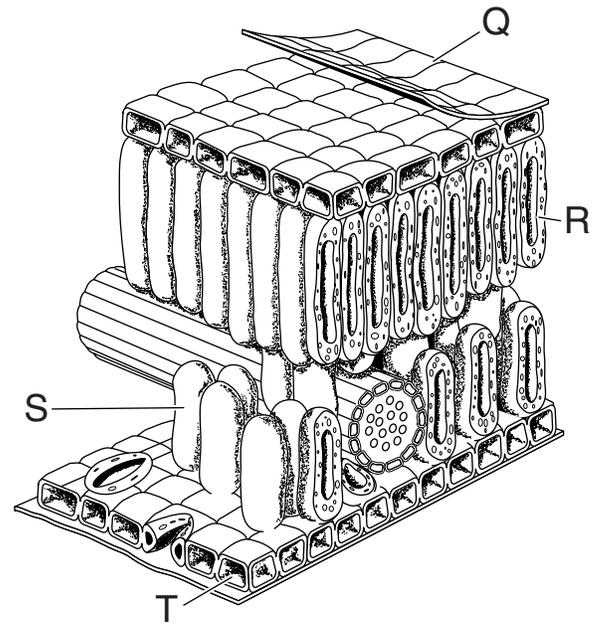


Combustible metals



25 When the above equation is balanced, the coefficient for magnesium chloride is —

- A 0
- B 1
- C 2
- D 4



26 Which of these structures protects a leaf from drying out?

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

Codon Chart

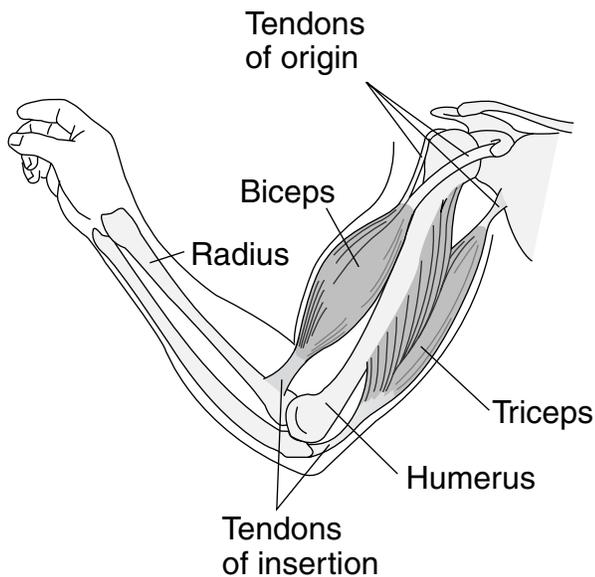
| First Letter | Second Letter | | | | Third Letter |
|--------------|---------------|--------|----------|------------|--------------|
| | U | C | A | G | |
| U | Phenylalanine | Serine | Tyrosine | Cysteine | U |
| | Phenylalanine | Serine | Tyrosine | Cysteine | C |
| | Leucine | Serine | Stop | Stop | A |
| | Leucine | Serine | Stop | Tryptophan | G |

27 The assembly of a messenger RNA strand that normally begins with UAC has been changed so that the newly assembled messenger RNA strand begins with UAG. Which of the following will most likely occur?

- A** The protein will be missing the first amino acid.
- B** The amino acids that make up the protein will all be different.
- C** The mRNA will become attached to a ribosome.
- D** The production of the protein will be stopped.

28 The elements from which of the following groups are most likely to react with potassium (K)?

- F** Group 2
- G** Group 7
- H** Group 13
- J** Group 17



29 The diagram represents a human arm. Which structure is most responsible for moving the arm to a straighter position?

- A** Tendons of origin
- B** Biceps
- C** Radius
- D** Triceps

30 Which molecule provides most of the energy used to drive chemical reactions in cells?

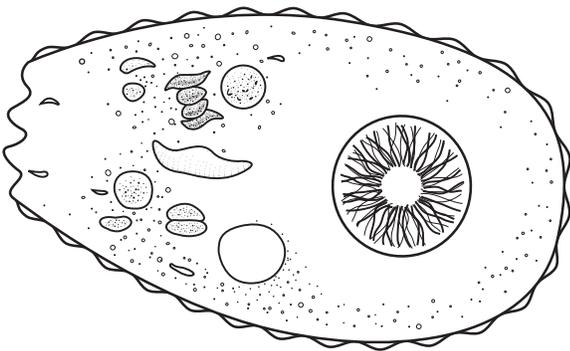
- F** DNA
- G** RNA
- H** ATP
- J** ADP

31 Which of the following processes is an example of a physical change associated with an oak tree?

- A** Decomposition of bark by bracket fungi
- B** Starches and sugars being broken down during energy production
- C** Water and carbon dioxide being converted to glucose
- D** Evaporation of water from the surfaces of leaves

Certain Characteristics of Various Kingdoms

| Kingdom | Characteristics |
|------------|--|
| Eubacteria | Lack organelles and nuclei |
| Protista | Primarily one-celled; lack specialized tissue systems |
| Animalia | No cell wall; have complex cell structure; multicellular |
| Plantae | Multicellular organisms; autotrophic |



Euglypha

32 This organism most likely is a member of which kingdom?

- F** Eubacteria
- G** Protista
- H** Animalia
- J** Plantae

33 All of the following are found in a DNA molecule except —

- A** carbon dioxide
- B** deoxyribose
- C** nitrogen
- D** phosphate

34 DNA passes information to RNA during the process of —

- F** transcription
- G** active transport
- H** regeneration
- J** osmosis

35 Compared to 250 g of gaseous nitrogen, 250 g of liquid nitrogen has greater —

- A** volume
- B** temperature
- C** mass
- D** density



| | Group 1 | Group 2 | Group 3 | Group 4 |
|------------------------------------|---------------------|-----------------|------------------|----------------|
| Supplement to Minimal Medium | No supplement added | Ornithine added | Citrulline added | Arginine added |
| Growth of Mutant <i>Neurospora</i> | No growth | No growth | Growth present | Growth present |

36 The diagram above shows the biochemical pathway that produces arginine, an amino acid required by an organism called *Neurospora*. The table shows the response of a mutant strain of *Neurospora* to supplements in its food supply. This mutant strain must lack the enzyme that acts on —

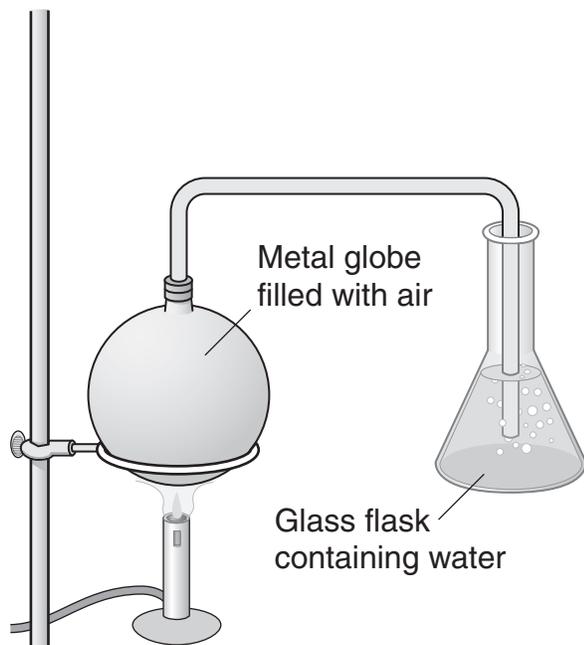
- F** the precursor
- G** ornithine
- H** citrulline
- J** arginine

37 The elements of which of these groups on the periodic table are most resistant to forming compounds?

- A** Group 1
- B** Group 9
- C** Group 14
- D** Group 18

38 Which factor would most likely cause a communications satellite orbiting Earth to return to Earth from its orbit?

- F** An increase in the satellite's forward momentum
- G** An increase in solar energy striking the satellite
- H** A decrease in the satellite's size
- J** A decrease in the satellite's velocity



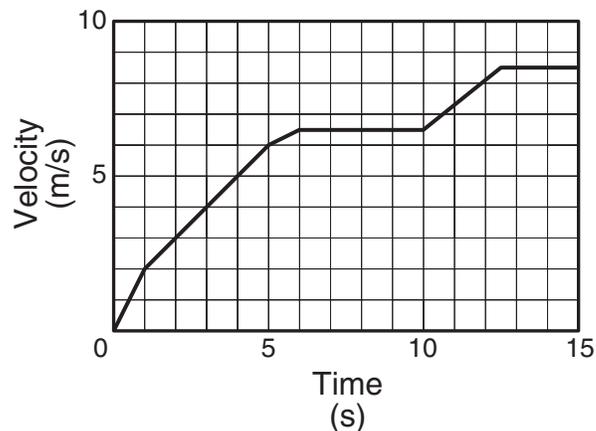
39 The diagram shows an experimental setup. Which of these questions was this experiment designed to answer?

- A Does water boil when exposed to air?
- B Will fire turn a gas into a liquid?
- C Does air expand when heated?
- D Will heat turn a gas into a solid?

40 If all the reactants in a chemical reaction are completely used, which of the following statements accurately describes the relationship between the reactants and the products?

- F The products must have a different physical state than the reactants.
- G The total mass of the reactants must equal the total mass of the products.
- H The reactants must contain more complex molecules than the products do.
- J The density of the reactants must equal the density of the products.

Acceleration of an Electrically Powered Bicycle



41 According to this graph, what was the bicycle's acceleration between 6 and 10 seconds?

- A 0.0 m/s^2
- B 0.65 m/s^2
- C 1.6 m/s^2
- D 6.5 m/s^2

42 One characteristic shared by a virus and a living cell is that both —

- F store genetic information in nucleic acids
- G have a crystalline structure
- H gain energy directly from the sun
- J use glucose for respiration

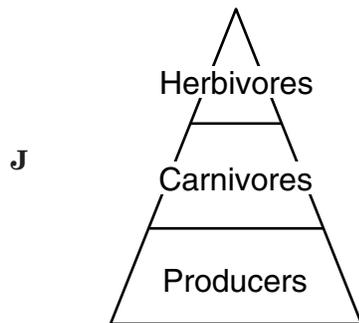
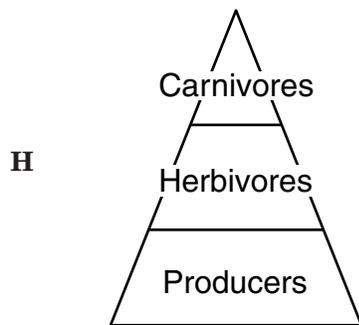
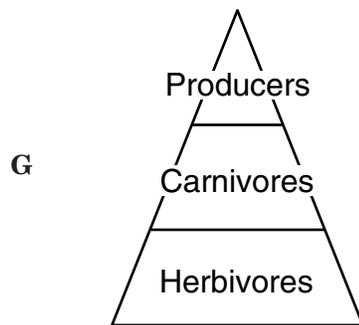
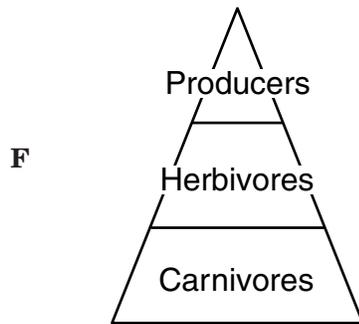
Temperatures of Water in Different Containers

| Container | Initial Temperature (°C) | Final Temperature (°C) |
|-----------|--------------------------|------------------------|
| P | 90 | 83 |
| Q | 90 | 76 |

43 Container P and Container Q each were filled with 0.5 liter of water. The water was heated to 90°C. The table shows the temperatures after both containers were allowed to cool for 3 minutes. Compared to Container Q, Container P is a better —

- A conductor
- B absorber
- C radiator
- D insulator

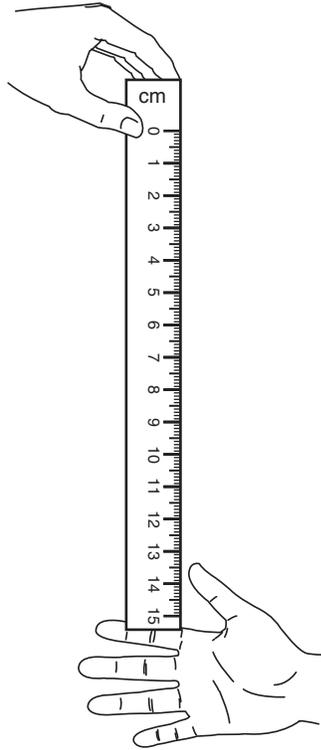
- 44 A food pyramid represents the relative amount of energy in trophic levels. Which of the following correctly shows a food pyramid?



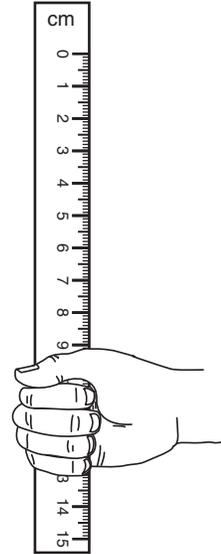
- 45 Which molecule is most responsible for determining an organism's eye color, body structure, and cellular enzyme production?

- A Complex starch
- B Fatty acid
- C Carbohydrate
- D Deoxyribonucleic acid

Student 1



Student 2



- 46 A ruler placed between one student's fingers and thumb is released without warning. A second student catches the ruler. The distance the ruler falls is recorded. This experiment is most likely designed to determine the —
- F effects of stress on the first student's heart rate
 - G acceleration of the ruler during its fall
 - H second student's reaction time to a stimulus
 - J force applied on a falling mass

- 47 Which body system is directly responsible for delivering nutrients to cells throughout the body?
- A Circulatory system
 - B Integumentary system
 - C Endocrine system
 - D Respiratory system

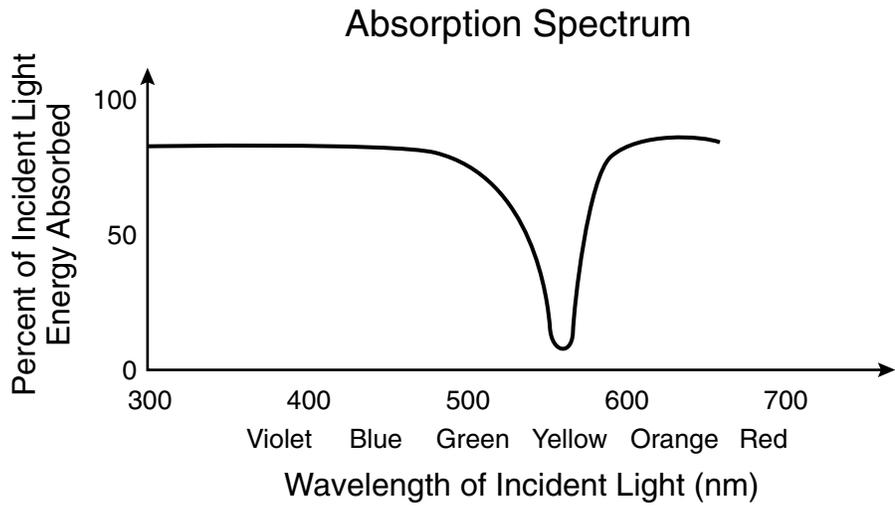
Ecosystem Factors

| Group 1 | Group 2 | Group 3 | Group 4 |
|-----------|-----------|----------|-----------|
| Soil | Soil | Soil | Soil |
| Water | Water | Water | Producers |
| Light | Light | Light | Light |
| Consumers | Producers | Air | Air |
| Rainfall | Consumers | Rainfall | Rainfall |

- 48 The table lists four groups of factors found in a particular ecosystem. Which group consists of only abiotic factors?
- F** Group 1
 - G** Group 2
 - H** Group 3
 - J** Group 4

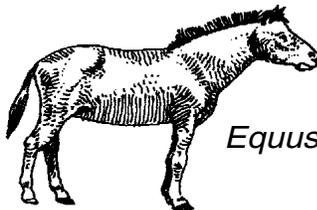
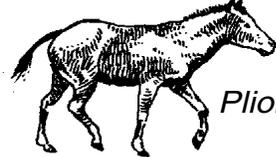
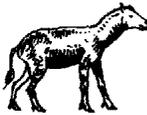
- 49 Battery-powered cars produce less air pollution than gasoline-powered cars. However, one environmental concern of using battery-powered cars is that batteries —
- A** are heavier than gasoline engines
 - B** waste more energy than gasoline engines
 - C** contain toxic substances that are difficult to dispose of
 - D** produce direct current rather than alternating current

- 50 Which set of equipment would be best to use to test the effect of temperature on solution acidity?
- F** A balance and a thermometer
 - G** A pH meter and a barometer
 - H** A balance and litmus paper
 - J** A thermometer and a pH meter



- 51 This graph shows the absorption spectrum for a certain pigment molecule. To a human, this pigment would most likely appear —
- A blue
 - B green
 - C yellow
 - D orange

Evolution of the Modern Horse

| | Genus | Forefoot | Molar |
|--|---|--|--|
|  Time |  <i>Equus</i> |  |  |
| |  <i>Pliohippus</i> |  |  |
| |  <i>Merychippus</i> |  |  |
| |  <i>Mesohippus</i> |  |  |
| |  <i>Eohippus</i> |  |  |

52 The diagram illustrates how some characteristics of the horse have changed over time. Along with the difference in size, what is another anatomical difference between the modern horse and its ancestors?

- F** The structure of the tooth has been adapted for eating meat.
- G** The size of the molars has decreased.
- H** The length of the forefoot has decreased.
- J** The number of toes has decreased.

Variation in Photosynthetic Rate of Elodea

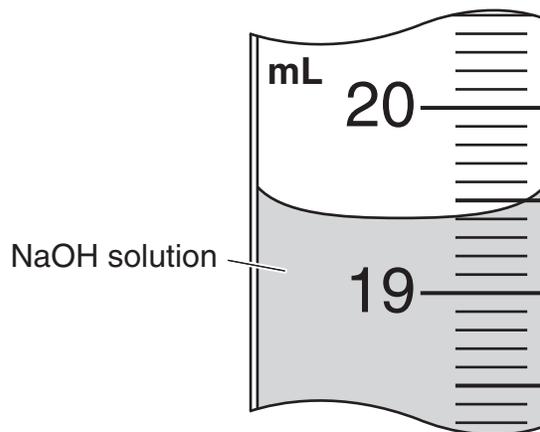
| Lightbulb Intensity (W/m ²) | Number of Bubbles per Minute |
|---|------------------------------|
| 25 | 4 |
| 50 | 7 |
| 75 | 12 |
| 100 | 31 |
| 125 | 38 |

53 The table shows the number of bubbles released by an elodea plant per minute at different light intensities. The rate of bubble release is representative of the photosynthetic rate. Which statement is supported by these data?

- A** The rate of photosynthesis is slowest when elodea produces 7 to 12 bubbles.
- B** Lower light intensity causes a higher photosynthetic rate.
- C** The greatest difference in photosynthetic rate is between the 75 W and 100 W lightbulbs.
- D** Light intensity has little effect on the rate of photosynthesis of elodea.

54 All of these materials can be recycled except —

- F** aluminum
- G** lumber
- H** glass
- J** coal



Section of pipette

55 What is the volume reading for the solution in the pipette?

- A** 19.4 mL
- B** 19.6 mL
- C** 20.4 mL
- D** 20.6 mL

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



