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TEST NUMBER

ENTER TEST NUMBER

For instance, for Practice Test #1, fill in the circle for 0 in the **first column** and for 1 in the **second column.**

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9	○	○

SECTION 1

1	A ○	B ○	C ○	D ○	14	A ○	B ○	C ○	D ○	27	A ○	B ○	C ○	D ○	40	A ○	B ○	C ○	D ○
2	A ○	B ○	C ○	D ○	15	A ○	B ○	C ○	D ○	28	A ○	B ○	C ○	D ○	41	A ○	B ○	C ○	D ○
3	A ○	B ○	C ○	D ○	16	A ○	B ○	C ○	D ○	29	A ○	B ○	C ○	D ○	42	A ○	B ○	C ○	D ○
4	A ○	B ○	C ○	D ○	17	A ○	B ○	C ○	D ○	30	A ○	B ○	C ○	D ○	43	A ○	B ○	C ○	D ○
5	A ○	B ○	C ○	D ○	18	A ○	B ○	C ○	D ○	31	A ○	B ○	C ○	D ○	44	A ○	B ○	C ○	D ○
6	A ○	B ○	C ○	D ○	19	A ○	B ○	C ○	D ○	32	A ○	B ○	C ○	D ○	45	A ○	B ○	C ○	D ○
7	A ○	B ○	C ○	D ○	20	A ○	B ○	C ○	D ○	33	A ○	B ○	C ○	D ○	46	A ○	B ○	C ○	D ○
8	A ○	B ○	C ○	D ○	21	A ○	B ○	C ○	D ○	34	A ○	B ○	C ○	D ○	47	A ○	B ○	C ○	D ○
9	A ○	B ○	C ○	D ○	22	A ○	B ○	C ○	D ○	35	A ○	B ○	C ○	D ○	48	A ○	B ○	C ○	D ○
10	A ○	B ○	C ○	D ○	23	A ○	B ○	C ○	D ○	36	A ○	B ○	C ○	D ○	49	A ○	B ○	C ○	D ○
11	A ○	B ○	C ○	D ○	24	A ○	B ○	C ○	D ○	37	A ○	B ○	C ○	D ○	50	A ○	B ○	C ○	D ○
12	A ○	B ○	C ○	D ○	25	A ○	B ○	C ○	D ○	38	A ○	B ○	C ○	D ○	51	A ○	B ○	C ○	D ○
13	A ○	B ○	C ○	D ○	26	A ○	B ○	C ○	D ○	39	A ○	B ○	C ○	D ○	52	A ○	B ○	C ○	D ○

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SECTION 2

	A	B	C	D		A	B	C	D		A	B	C	D		A	B	C	D
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2	○	○	○	○	11	○	○	○	○	20	○	○	○	○	29	○	○	○	○	38	○	○	○	○
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8	○	○	○	○	17	○	○	○	○	26	○	○	○	○	35	○	○	○	○	44	○	○	○	○
9	○	○	○	○	18	○	○	○	○	27	○	○	○	○	36	○	○	○	○					

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SECTION 3

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Only answers that are gridded will be scored. You will not receive credit for anything written in the boxes.

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SECTION 4

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SECTION 4 (Continued)

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Only answers that are gridded will be scored. You will not receive credit for anything written in the boxes.

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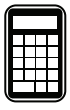

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SAT® Practice Test #2

IMPORTANT REMINDERS

1

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2

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Test begins on the next page.

Reading Test

65 MINUTES, 52 QUESTIONS

Turn to Section 1 of your answer sheet to answer the questions in this section.

DIRECTIONS

Each passage or pair of passages below is followed by a number of questions. After reading each passage or pair, choose the best answer to each question based on what is stated or implied in the passage or passages and in any accompanying graphics (such as a table or graph).

Questions 1-10 are based on the following passage.

This passage is from Charlotte Brontë, *The Professor*, originally published in 1857.

No man likes to acknowledge that he has made a mistake in the choice of his profession, and every man, worthy of the name, will row long against wind and tide before he allows himself to cry out, "I am baffled!" and submits to be floated passively back to land. From the first week of my residence in X—— I felt my occupation irksome. The thing itself—the work of copying and translating business-letters—was a dry and tedious task enough, but had that been all, I should long have borne with the nuisance; I am not of an impatient nature, and influenced by the double desire of getting my living and justifying to myself and others the resolution I had taken to become a tradesman, I should have endured in silence the rust and cramp of my best faculties; I should not have whispered, even inwardly, that I longed for liberty; I should have pent in every sigh by which my heart might have ventured to intimate its distress under the closeness, smoke, monotony, and joyless tumult of Bigben Close, and its panting desire for freer and fresher scenes; I should have set up the image of Duty, the fetish of Perseverance, in my small bedroom at Mrs. King's lodgings, and they two should have been my household gods, from which my darling, my cherished-in-secret, Imagination, the tender and the mighty, should never, either by softness or strength, have severed me. But this was not all; the antipathy which had sprung up between myself and my employer striking deeper root and spreading denser shade daily, excluded me from every glimpse of the sunshine of life; and I began to feel like a plant growing in humid darkness out of the slimy walls of a well.

Antipathy is the only word which can express the feeling Edward Crimsworth had for me—a feeling, in a great measure, involuntary, and which was liable to be excited by every, the most trifling movement, look, or word of mine. My southern accent annoyed him; the degree of education evinced in my language irritated him; my punctuality, industry, and accuracy, fixed his dislike, and gave it the high flavour and poignant relish of envy; he feared that I too should one day make a successful tradesman. Had I been in anything inferior to him, he would not have hated me so thoroughly, but I knew all that he knew, and, what was worse, he suspected that I kept the padlock of silence on mental wealth in which he was no sharer. If he could have once placed me in a ridiculous or mortifying position, he would have forgiven me much, but I was guarded by three faculties—Caution, Tact, Observation; and prowling and prying as was Edward's malignity, it could never baffle the lynx-eyes of these, my natural sentinels. Day by day did his malice watch my tact, hoping it would sleep, and prepared to steal snake-like on its slumber; but tact, if it be genuine, never sleeps.

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CONTINUE

I had received my first quarter's wages, and was returning to my lodgings, possessed heart and soul with the pleasant feeling that the master who had paid me grudged every penny of that hard-earned pittance—(I had long ceased to regard Mr. Crimsworth as my brother—he was a hard, grinding master; he wished to be an inexorable tyrant: that was all). Thoughts, not varied but strong, occupied my mind; two voices spoke within me; again and again they uttered the same monotonous phrases. One said: "William, your life is intolerable." The other: "What can you do to alter it?" I walked fast, for it was a cold, frosty night in January; as I approached my lodgings, I turned from a general view of my affairs to the particular speculation as to whether my fire would be out; looking towards the window of my sitting-room, I saw no cheering red gleam.

1

Which choice best summarizes the passage?

A) A character describes his dislike for his new job and considers the reasons why.

B) Two characters employed in the same office become increasingly competitive.

C) A young man regrets privately a choice that he defends publicly.

D) A new employee experiences optimism, then frustration, and finally despair.

2

The main purpose of the opening sentence of the passage is to

A) establish the narrator's perspective on a controversy.

B) provide context useful in understanding the narrator's emotional state.

C) offer a symbolic representation of Edward Crimsworth's plight.

D) contrast the narrator's good intentions with his malicious conduct.

3

During the course of the first paragraph, the narrator's focus shifts from

A) recollection of past confidence to acknowledgment of present self-doubt.

B) reflection on his expectations of life as a tradesman to his desire for another job.

C) generalization about job dissatisfaction to the specifics of his own situation.

D) evaluation of factors making him unhappy to identification of alternatives.

4

The references to "shade" and "darkness" at the end of the first paragraph mainly have which effect?

A) They evoke the narrator's sense of dismay.

B) They reflect the narrator's sinister thoughts.

C) They capture the narrator's fear of confinement.

D) They reveal the narrator's longing for rest.

5

The passage indicates that Edward Crimsworth's behavior was mainly caused by his

A) impatience with the narrator's high spirits.

B) scorn of the narrator's humble background.

C) indignation at the narrator's rash actions.

D) jealousy of the narrator's apparent superiority.

6

The passage indicates that when the narrator began working for Edward Crimsworth, he viewed Crimsworth as a

A) harmless rival.

B) sympathetic ally.

C) perceptive judge.

D) demanding mentor.

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CONTINUE

7

Which choice provides the best evidence for the answer to the previous question?

A) Lines 28-31 ("the antipathy . . . life")

B) Lines 38-40 ("My southern . . . irritated him")

C) Lines 54-56 ("Day . . . slumber")

D) Lines 61-62 ("I had . . . brother")

8

At the end of the second paragraph, the comparisons of abstract qualities to a lynx and a snake mainly have the effect of

A) contrasting two hypothetical courses of action.

B) conveying the ferocity of a resolution.

C) suggesting the likelihood of an altercation.

D) illustrating the nature of an adversarial relationship.

9

The passage indicates that, after a long day of work, the narrator sometimes found his living quarters to be

A) treacherous.

B) dreary.

C) predictable.

D) intolerable.

10

Which choice provides the best evidence for the answer to the previous question?

A) Lines 17-21 ("I should . . . scenes")

B) Lines 21-23 ("I should . . . lodgings")

C) Lines 64-67 ("Thoughts . . . phrases")

D) Lines 68-74 ("I walked . . . gleam")

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CONTINUE

Questions 11-21 are based on the following passage and supplementary material.

This passage is adapted from Iain King, "Can Economics Be Ethical?" ©2013 by Prospect Publishing.

Recent debates about the economy have rediscovered the question, "is that right?", where "right" means more than just profits or efficiency.

Line

Some argue that because the free markets allow for personal choice, they are already ethical. Others have accepted the ethical critique and embraced corporate social responsibility. But before we can label any market outcome as "immoral," or sneer at economists who try to put a price on being ethical, we need to be clear on what we are talking about.

There are different views on where ethics should apply when someone makes an economic decision. Consider Adam Smith, widely regarded as the founder of modern economics. He was a moral philosopher who believed sympathy for others was the basis for ethics (we would call it empathy nowadays). But one of his key insights in *The Wealth of Nations* was that acting on this empathy could be counter-productive—he observed people becoming better off when they put their own empathy aside, and interacted in a self-interested way. Smith justifies selfish behavior by the outcome. Whenever planners use cost-benefit analysis to justify a new railway line, or someone retrains to boost his or her earning power, or a shopper buys one to get one free, they are using the same approach: empathizing with someone, and seeking an outcome that makes that person as well off as possible—although the person they are empathizing with may be themselves in the future.

Instead of judging consequences, Aristotle said ethics was about having the right character—displaying virtues like courage and honesty. It is a view put into practice whenever business leaders are chosen for their good character. But it is a hard philosophy to teach—just how much loyalty should you show to a manufacturer that keeps losing money? Show too little and you're a "greed is good" corporate raider; too much and you're wasting money on unproductive capital. Aristotle thought there was a golden mean between the two extremes, and finding it was a matter of fine judgment. But if ethics is about character, it's not clear what those characteristics should be.

There is yet another approach: instead of rooting ethics in character or the consequences of actions, we can focus on our actions themselves. From this perspective some things are right, some wrong—we should buy fair trade goods, we shouldn't tell lies in advertisements. Ethics becomes a list of commandments, a catalog of "dos" and "don'ts." When a finance official refuses to devalue a currency because they have promised not to, they are defining ethics this way. According to this approach devaluation can still be bad, even if it would make everybody better off.

Many moral dilemmas arise when these three versions pull in different directions but clashes are not inevitable. Take fair trade coffee (coffee that is sold with a certification that indicates the farmers and workers who produced it were paid a fair wage), for example: buying it might have good consequences, be virtuous, and also be the right way to act in a flawed market. Common ground like this suggests that, even without agreement on where ethics applies, ethical economics is still possible.

Whenever we feel queasy about "perfect" competitive markets, the problem is often rooted in a phony conception of people. The model of man on which classical economics is based—an entirely rational and selfish being—is a parody, as John Stuart Mill, the philosopher who pioneered the model, accepted. Most people—even economists—now accept that this "economic man" is a fiction. We behave like a herd; we fear losses more than we hope for gains; rarely can our brains process all the relevant facts.

These human quirks mean we can never make purely "rational" decisions. A new wave of behavioral economists, aided by neuroscientists, is trying to understand our psychology, both alone and in groups, so they can anticipate our decisions in the marketplace more accurately. But psychology can also help us understand why we react in disgust at economic injustice, or accept a moral law as universal. Which means that the relatively new science of human behavior might also define ethics for us. Ethical economics would then emerge from one of the least likely places: economists themselves.

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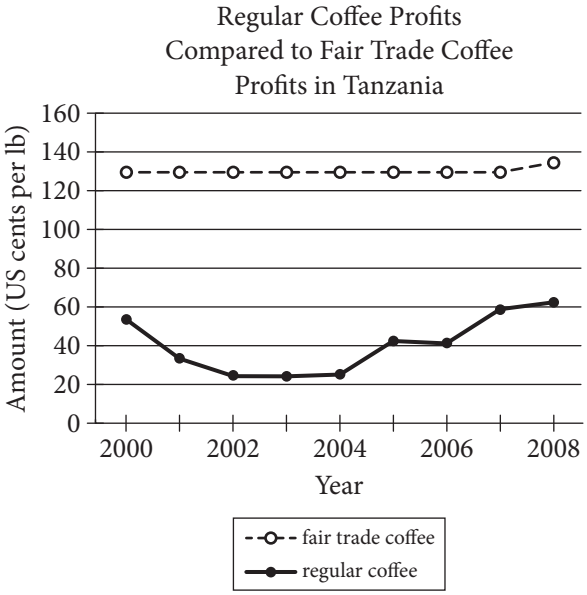
CONTINUE



Adapted from the Fair Trade Vancouver website.

11

The main purpose of the passage is to

A) consider an ethical dilemma posed by cost-benefit analysis.

B) describe a psychology study of ethical economic behavior.

C) argue that the free market prohibits ethical economics.

D) examine ways of evaluating the ethics of economics.

12

In the passage, the author anticipates which of the following objections to criticizing the ethics of free markets?

A) Smith's association of free markets with ethical behavior still applies today.

B) Free markets are the best way to generate high profits, so ethics are a secondary consideration.

C) Free markets are ethical because they are made possible by devalued currency.

D) Free markets are ethical because they enable individuals to make choices.

13

Which choice provides the best evidence for the answer to the previous question?

A) Lines 4-5 ("Some . . . ethical")

B) Lines 7-10 ("But . . . about")

C) Lines 21-22 ("Smith . . . outcome")

D) Lines 52-54 ("When . . . way")

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CONTINUE

14

As used in line 6, "embraced" most nearly means

A) lovingly held.

B) readily adopted.

C) eagerly hugged.

D) reluctantly used.

15

The main purpose of the fifth paragraph (lines 45-56) is to

A) develop a counterargument to the claim that greed is good.

B) provide support for the idea that ethics is about character.

C) describe a third approach to defining ethical economics.

D) illustrate that one's actions are a result of one's character.

16

As used in line 58, "clashes" most nearly means

A) conflicts.

B) mismatches.

C) collisions.

D) brawls.

17

Which choice best supports the author's claim that there is common ground shared by the different approaches to ethics described in the passage?

A) Lines 11-12 ("There . . . decision")

B) Lines 47-50 ("From . . . advertisements")

C) Lines 59-64 ("Take . . . market")

D) Lines 75-77 ("We . . . facts")

18

The main idea of the final paragraph is that

A) human quirks make it difficult to predict people's ethical decisions accurately.

B) people universally react with disgust when faced with economic injustice.

C) understanding human psychology may help to define ethics in economics.

D) economists themselves will be responsible for reforming the free market.

19

Data in the graph about per-pound coffee profits in Tanzania most strongly support which of the following statements?

A) Fair trade coffee consistently earned greater profits than regular coffee earned.

B) The profits earned from regular coffee did not fluctuate.

C) Fair trade coffee profits increased between 2004 and 2006.

D) Fair trade and regular coffee were earning equal profits by 2008.

20

Data in the graph indicate that the greatest difference between per-pound profits from fair trade coffee and those from regular coffee occurred during which period?

A) 2000 to 2002

B) 2002 to 2004

C) 2004 to 2005

D) 2006 to 2008

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CONTINUE

21

Data in the graph provide most direct support for which idea in the passage?

A) Acting on empathy can be counterproductive.

B) Ethical economics is defined by character.

C) Ethical economics is still possible.

D) People fear losses more than they hope for gains.

Questions 22-32 are based on the following passages.

Passage 1 is adapted from Nicholas Carr, "Author Nicholas Carr: The Web Shatters Focus, Rewires Brains." ©2010 by Condé Nast. Passage 2 is from Steven Pinker, "Mind over Mass Media." ©2010 by The New York Times Company.

Passage 1

The mental consequences of our online info-crunching are not universally bad. Certain cognitive skills are strengthened by our use of computers and the Net. These tend to involve more primitive mental functions, such as hand-eye coordination, reflex response, and the processing of visual cues. One much-cited study of video gaming revealed that after just 10 days of playing action games on computers, a group of young people had significantly boosted the speed with which they could shift their visual focus between various images and tasks.

It's likely that Web browsing also strengthens brain functions related to fast-paced problem solving, particularly when it requires spotting patterns in a welter of data. A British study of the way women search for medical information online indicated that an experienced Internet user can, at least in some cases, assess the trustworthiness and probable value of a Web page in a matter of seconds. The more we practice surfing and scanning, the more adept our brain becomes at those tasks.

But it would be a serious mistake to look narrowly at such benefits and conclude that the Web is making us smarter. In a *Science* article published in early 2009, prominent developmental psychologist Patricia Greenfield reviewed more than 40 studies of the effects of various types of media on intelligence and learning ability. She concluded that "every medium develops some cognitive skills at the expense of others." Our growing use of the Net and other screen-based technologies, she wrote, has led to the "widespread and sophisticated development of visual-spatial skills." But those gains go hand in hand with a weakening of our capacity for the kind of "deep processing" that underpins "mindful knowledge acquisition, inductive analysis, critical thinking, imagination, and reflection."

We know that the human brain is highly plastic; neurons and synapses change as circumstances change. When we adapt to a new cultural phenomenon, including the use of a new

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CONTINUE

medium, we end up with a different brain, says Michael Merzenich, a pioneer of the field of neuroplasticity. That means our online habits continue to reverberate in the workings of our brain cells even when we're not at a computer. We're exercising the neural circuits devoted to skimming and multitasking while ignoring those used for reading and thinking deeply.

Passage 2

Critics of new media sometimes use science itself to press their case, citing research that shows how "experience can change the brain." But cognitive neuroscientists roll their eyes at such talk. Yes, every time we learn a fact or skill the wiring of the brain changes; it's not as if the information is stored in the pancreas. But the existence of neural plasticity does not mean the brain is a blob of clay pounded into shape by experience.

Experience does not revamp the basic information-processing capacities of the brain. Speed-reading programs have long claimed to do just that, but the verdict was rendered by Woody Allen after he read Leo Tolstoy's famously long novel *War and Peace* in one sitting: "It was about Russia." Genuine multitasking, too, has been exposed as a myth, not just by laboratory studies but by the familiar sight of an SUV undulating between lanes as the driver cuts deals on his cell phone.

Moreover, the effects of experience are highly specific to the experiences themselves. If you train people to do one thing (recognize shapes, solve math puzzles, find hidden words), they get better at doing that thing, but almost nothing else. Music doesn't make you better at math, conjugating Latin doesn't make you more logical, brain-training games don't make you smarter. Accomplished people don't bulk up their brains with intellectual calisthenics; they immerse themselves in their fields. Novelists read lots of novels, scientists read lots of science.

The effects of consuming electronic media are likely to be far more limited than the panic implies. Media critics write as if the brain takes on the qualities of whatever it consumes, the informational equivalent of "you are what you eat." As with ancient peoples who believed that eating fierce animals made them fierce, they assume that watching quick cuts in rock videos turns your mental life into quick cuts or that reading bullet points and online postings turns your thoughts into bullet points and online postings.

22

The author of Passage 1 indicates which of the following about the use of screen-based technologies?

A) It should be thoroughly studied.
B) It makes the brain increasingly rigid.
C) It has some positive effects.
D) It should be widely encouraged.

23

Which choice provides the best evidence for the answer to the previous question?

A) Lines 3-4 ("Certain . . . Net")
B) Lines 23-25 ("But . . . smarter")
C) Lines 25-29 ("In a . . . ability")
D) Lines 29-31 ("She . . . others")

24

The author of Passage 1 indicates that becoming adept at using the Internet can

A) make people complacent about their health.
B) undermine the ability to think deeply.
C) increase people's social contacts.
D) improve people's self-confidence.

25

As used in line 40, "plastic" most nearly means

A) creative.
B) artificial.
C) malleable.
D) sculptural.

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CONTINUE

26

The author of Passage 2 refers to the novel *War and Peace* primarily to suggest that Woody Allen

A) did not like Tolstoy's writing style.

B) could not comprehend the novel by speed-reading it.

C) had become quite skilled at multitasking.

D) regretted having read such a long novel.

27

According to the author of Passage 2, what do novelists and scientists have in common?

A) They take risks when they pursue knowledge.

B) They are eager to improve their minds.

C) They are curious about other subjects.

D) They become absorbed in their own fields.

28

The analogy in the final sentence of Passage 2 has primarily which effect?

A) It uses ornate language to illustrate a difficult concept.

B) It employs humor to soften a severe opinion of human behavior.

C) It alludes to the past to evoke a nostalgic response.

D) It criticizes the view of a particular group.

29

The main purpose of each passage is to

A) compare brain function in those who play games on the Internet and those who browse on it.

B) report on the problem-solving skills of individuals with varying levels of Internet experience.

C) take a position on increasing financial support for studies related to technology and intelligence.

D) make an argument about the effects of electronic media use on the brain.

30

Which choice best describes the relationship between the two passages?

A) Passage 2 relates first-hand experiences that contrast with the clinical approach in Passage 1.

B) Passage 2 critiques the conclusions drawn from the research discussed in Passage 1.

C) Passage 2 takes a high-level view of a result that Passage 1 examines in depth.

D) Passage 2 predicts the negative reactions that the findings discussed in Passage 1 might produce.

31

On which of the following points would the authors of both passages most likely agree?

A) Computer-savvy children tend to demonstrate better hand-eye coordination than do their parents.

B) Those who criticize consumers of electronic media tend to overreact in their criticism.

C) Improved visual-spatial skills do not generalize to improved skills in other areas.

D) Internet users are unlikely to prefer reading onscreen text to reading actual books.

32

Which choice provides the best evidence that the author of Passage 2 would agree to some extent with the claim attributed to Michael Merzenich in lines 41-43, Passage 1?

A) Lines 51-53 ("Critics . . . brain")

B) Lines 54-56 ("Yes . . . changes")

C) Lines 57-59 ("But . . . experience")

D) Lines 83-84 ("Media . . . consumes")

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CONTINUE

Questions 33-42 are based on the following passage.

This passage is adapted from Elizabeth Cady Stanton's address to the 1869 Woman Suffrage Convention in Washington, DC.

I urge a sixteenth amendment, because "manhood suffrage," or a man's government, is civil, religious, and social disorganization. The male element is a destructive force, stern, selfish, aggrandizing, loving war, violence, conquest, acquisition, breeding in the material and moral world alike discord, disorder, disease, and death. See what a record of blood and cruelty the pages of history reveal! Through what slavery, slaughter, and sacrifice, through what inquisitions and imprisonments, pains and persecutions, black codes and gloomy creeds, the soul of humanity has struggled for the centuries, while mercy has veiled her face and all hearts have been dead alike to love and hope!

The male element has held high carnival thus far; it has fairly run riot from the beginning, overpowering the feminine element everywhere, crushing out all the diviner qualities in human nature, until we know but little of true manhood and womanhood, of the latter comparatively nothing, for it has scarce been recognized as a power until within the last century. Society is but the reflection of man himself, untempered by woman's thought; the hard iron rule we feel alike in the church, the state, and the home. No one need wonder at the disorganization, at the fragmentary condition of everything, when we remember that man, who represents but half a complete being, with but half an idea on every subject, has undertaken the absolute control of all sublunary matters.

People object to the demands of those whom they choose to call the strong-minded, because they say "the right of suffrage will make the women masculine." That is just the difficulty in which we are involved today. Though disfranchised, we have few women in the best sense; we have simply so many reflections, varieties, and dilutions of the masculine gender. The strong, natural characteristics of womanhood are repressed and ignored in dependence, for so long as man feeds woman she will try to please the giver and adapt herself to his condition. To keep a foothold in society, woman must be as near like man as possible, reflect his ideas, opinions, virtues, motives, prejudices, and vices. She must respect his statutes, though they strip her of every inalienable right, and conflict with that higher law written by the finger of God on her own soul. . . .

. . . [M]an has been molding woman to his ideas by direct and positive influences, while she, if not a negation, has used indirect means to control him, and in most cases developed the very characteristics both in him and herself that needed repression. And now man himself stands appalled at the results of his own excesses, and mourns in bitterness that falsehood, selfishness, and violence are the law of life. The need of this hour is not territory, gold mines, railroads, or specie payments but a new evangel of womanhood, to exalt purity, virtue, morality, true religion, to lift man up into the higher realms of thought and action.

We ask woman's enfranchisement, as the first step toward the recognition of that essential element in government that can only secure the health, strength, and prosperity of the nation. Whatever is done to lift woman to her true position will help to usher in a new day of peace and perfection for the race.

In speaking of the masculine element, I do not wish to be understood to say that all men are hard, selfish, and brutal, for many of the most beautiful spirits the world has known have been clothed with manhood; but I refer to those characteristics, though often marked in woman, that distinguish what is called the stronger sex. For example, the love of acquisition and conquest, the very pioneers of civilization, when expended on the earth, the sea, the elements, the riches and forces of nature, are powers of destruction when used to subjugate one man to another or to sacrifice nations to ambition.

Here that great conservator of woman's love, if permitted to assert itself, as it naturally would in freedom against oppression, violence, and war, would hold all these destructive forces in check, for woman knows the cost of life better than man does, and not with her consent would one drop of blood ever be shed, one life sacrificed in vain.

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CONTINUE

33

The central problem that Stanton describes in the passage is that women have been

A) denied equal educational opportunities, which has kept them from reaching their potential.

B) prevented from exerting their positive influence on men, which has led to societal breakdown.

C) prevented from voting, which has resulted in poor candidates winning important elections.

D) blocked by men from serving as legislators, which has allowed the creation of unjust laws.

34

Stanton uses the phrase "high carnival" (line 15) mainly to emphasize what she sees as the

A) utter domination of women by men.

B) freewheeling spirit of the age.

C) scandalous decline in moral values.

D) growing power of women in society.

35

Stanton claims that which of the following was a relatively recent historical development?

A) The control of society by men

B) The spread of war and injustice

C) The domination of domestic life by men

D) The acknowledgment of women's true character

36

Which choice provides the best evidence for the answer to the previous question?

A) Lines 3-7 ("The male . . . death")

B) Lines 15-22 ("The male . . . century")

C) Lines 22-25 ("Society . . . home")

D) Lines 48-52 ("[M]an . . . repression")

37

As used in line 24, "rule" most nearly refers to

A) a general guideline.

B) a controlling force.

C) an established habit.

D) a procedural method.

38

It can reasonably be inferred that "the strong-minded" (line 32) was a term generally intended to

A) praise women who fight for their long-denied rights.

B) identify women who demonstrate intellectual skill.

C) criticize women who enter male-dominated professions.

D) condemn women who agitate for the vote for their sex.

39

As used in line 36, "best" most nearly means

A) superior.

B) excellent.

C) genuine.

D) rarest.

40

Stanton contends that the situation she describes in the passage has become so dire that even men have begun to

A) lament the problems they have created.

B) join the call for woman suffrage.

C) consider women their social equals.

D) ask women how to improve civic life.

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CONTINUE

41

Which choice provides the best evidence for the answer to the previous question?

A) Lines 25-30 ("No one . . . matters")

B) Lines 53-55 ("And now . . . life")

C) Lines 56-60 ("The need . . . action")

D) Lines 61-64 ("We ask . . . nation")

42

The sixth paragraph (lines 67-78) is primarily concerned with establishing a contrast between

A) men and women.

B) the spiritual world and the material world.

C) bad men and good men.

D) men and masculine traits.

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CONTINUE

Questions 43-52 are based on the following passage and supplementary material.

This passage is adapted from Geoffrey Giller, "Long a Mystery, How 500-Meter-High Undersea Waves Form Is Revealed." ©2014 by Scientific American.

Some of the largest ocean waves in the world are nearly impossible to see. Unlike other large waves, these rollers, called internal waves, do not ride the ocean surface. Instead, they move underwater, undetectable without the use of satellite imagery or sophisticated monitoring equipment. Despite their hidden nature, internal waves are fundamental parts of ocean water dynamics, transferring heat to the ocean depths and bringing up cold water from below. And they can reach staggering heights—some as tall as skyscrapers.

Because these waves are involved in ocean mixing and thus the transfer of heat, understanding them is crucial to global climate modeling, says Tom Peacock, a researcher at the Massachusetts Institute of Technology. Most models fail to take internal waves into account. "If we want to have more and more accurate climate models, we have to be able to capture processes such as this," Peacock says.

Peacock and his colleagues tried to do just that. Their study, published in November in *Geophysical Research Letters*, focused on internal waves generated in the Luzon Strait, which separates Taiwan and the Philippines. Internal waves in this region, thought to be some of the largest in the world, can reach about 500 meters high. "That's the same height as the Freedom Tower that's just been built in New York," Peacock says.

Although scientists knew of this phenomenon in the South China Sea and beyond, they didn't know exactly how internal waves formed. To find out, Peacock and a team of researchers from M.I.T. and Woods Hole Oceanographic Institution worked with France's National Center for Scientific Research using a giant facility there called the Coriolis Platform. The rotating platform, about 15 meters (49.2 feet) in diameter, turns at variable speeds and can simulate Earth's rotation. It also has walls, which means scientists can fill it with water and create accurate, large-scale simulations of various oceanographic scenarios.

Peacock and his team built a carbon-fiber resin scale model of the Luzon Strait, including the islands and surrounding ocean floor topography. Then they filled the platform with water of varying salinity to replicate the different densities found at the strait, with denser, saltier water below and lighter, less briny water above. Small particles were added to the solution and illuminated with lights from below in order to track how the liquid moved. Finally, they re-created tides using two large plungers to see how the internal waves themselves formed.

The Luzon Strait's underwater topography, with a distinct double-ridge shape, turns out to be responsible for generating the underwater waves. As the tide rises and falls and water moves through the strait, colder, denser water is pushed up over the ridges into warmer, less dense layers above it. This action results in bumps of colder water trailed by warmer water that generate an internal wave. As these waves move toward land, they become steeper—much the same way waves at the beach become taller before they hit the shore—until they break on a continental shelf.

The researchers were also able to devise a mathematical model that describes the movement and formation of these waves. Whereas the model is specific to the Luzon Strait, it can still help researchers understand how internal waves are generated in other places around the world. Eventually, this information will be incorporated into global climate models, making them more accurate. "It's very clear, within the context of these [global climate] models, that internal waves play a role in driving ocean circulations," Peacock says.

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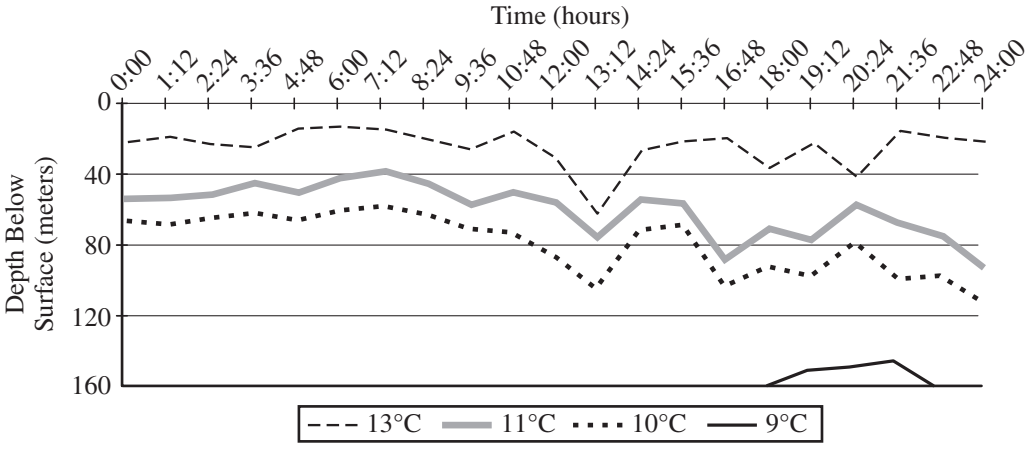
CONTINUE

CHANGES IN DEPTH OF ISOTHERMS*
IN AN INTERNAL WAVE OVER A 24-HOUR PERIOD



* Bands of water of constant temperatures

Adapted from Justin Small et al., "Internal Solitons in the Ocean: Prediction from SAR." ©1998 by Oceanography, Defence Evaluation and Research Agency.

43

The first paragraph serves mainly to

A) explain how a scientific device is used.

B) note a common misconception about an event.

C) describe a natural phenomenon and address its importance.

D) present a recent study and summarize its findings.

44

As used in line 19, "capture" is closest in meaning to

A) control.

B) record.

C) secure.

D) absorb.

45

According to Peacock, the ability to monitor internal waves is significant primarily because

A) it will allow scientists to verify the maximum height of such waves.

B) it will allow researchers to shift their focus to improving the quality of satellite images.

C) the study of wave patterns will enable regions to predict and prevent coastal damage.

D) the study of such waves will inform the development of key scientific models.

46

Which choice provides the best evidence for the answer to the previous question?

A) Lines 1-2 ("Some . . . see")

B) Lines 4-6 ("they . . . equipment")

C) Lines 17-19 ("If . . . this")

D) Lines 24-26 ("Internal . . . high")

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CONTINUE

47

As used in line 65, "devise" most nearly means

A) create.

B) solve.

C) imagine.

D) begin.

48

Based on information in the passage, it can reasonably be inferred that all internal waves

A) reach approximately the same height even though the locations and depths of continental shelves vary.

B) may be caused by similar factors but are influenced by the distinct topographies of different regions.

C) can be traced to inconsistencies in the tidal patterns of deep ocean water located near islands.

D) are generated by the movement of dense water over a relatively flat section of the ocean floor.

49

Which choice provides the best evidence for the answer to the previous question?

A) Lines 29-31 ("Although . . . formed")

B) Lines 56-58 ("As the . . . it")

C) Lines 61-64 ("As these . . . shelf")

D) Lines 67-70 ("Whereas . . . world")

50

In the graph, which isotherm displays an increase in depth below the surface during the period 19:12 to 20:24?

A) 9°C

B) 10°C

C) 11°C

D) 13°C

51

Which concept is supported by the passage and by the information in the graph?

A) Internal waves cause water of varying salinity to mix.

B) Internal waves push denser water above layers of less dense water.

C) Internal waves push bands of cold water above bands of warmer water.

D) Internal waves do not rise to break the ocean's surface.

52

How does the graph support the author's point that internal waves affect ocean water dynamics?

A) It demonstrates that wave movement forces warmer water down to depths that typically are colder.

B) It reveals the degree to which an internal wave affects the density of deep layers of cold water.

C) It illustrates the change in surface temperature that takes place during an isolated series of deep waves.

D) It shows that multiple waves rising near the surface of the ocean disrupt the flow of normal tides.

STOP

If you finish before time is called, you may check your work on this section only.
Do not turn to any other section.

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No Test Material On This Page

Writing and Language Test

35 MINUTES, 44 QUESTIONS

Turn to Section 2 of your answer sheet to answer the questions in this section.

DIRECTIONS

Each passage below is accompanied by a number of questions. For some questions, you will consider how the passage might be revised to improve the expression of ideas. For other questions, you will consider how the passage might be edited to correct errors in sentence structure, usage, or punctuation. A passage or a question may be accompanied by one or more graphics (such as a table or graph) that you will consider as you make revising and editing decisions.

Some questions will direct you to an underlined portion of a passage. Other questions will direct you to a location in a passage or ask you to think about the passage as a whole.

After reading each passage, choose the answer to each question that most effectively improves the quality of writing in the passage or that makes the passage conform to the conventions of standard written English. Many questions include a "NO CHANGE" option. Choose that option if you think the best choice is to leave the relevant portion of the passage as it is.

Questions 1-11 are based on the following passage.

Librarians Help Navigate in the Digital Age

In recent years, public libraries in the United States have experienced 1 reducing in their operating funds due to cuts imposed at the federal, state, and local government levels. 2 However, library staffing has been cut by almost four percent since 2008, and the demand for librarians continues to decrease, even though half of public libraries report that they have an insufficient number of staff to meet their patrons' needs. Employment in all job sectors in the United States is projected to grow by fourteen percent over the next

1

A) NO CHANGE
B) reductions
C) deducting
D) deducts

2

A) NO CHANGE
B) Consequently,
C) Nevertheless,
D) Previously,

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CONTINUE

decade, yet the expected growth rate for librarians is predicted to be only seven percent, or half of the overall rate. This trend, combined with the increasing accessibility of information via the Internet, 3 has led some to claim that librarianship is in decline as a profession. As public libraries adapt to rapid technological advances in information distribution, librarians' roles are actually expanding.

The share of library materials that is in nonprint formats 4 is increasing steadily; in 2010, at least 18.5 million e-books were available 5 for them to circulate. As a result, librarians must now be proficient curators of electronic information, compiling, 6 catalog, and updating these collections. But perhaps even more importantly, librarians function as first responders for their communities' computer needs. Since

3

A) NO CHANGE
B) have
C) which have
D) which has

4

At this point, the writer is considering adding the following information.

—e-books, audio and video materials, and online journals—

Should the writer make this addition here?

A) Yes, because it provides specific examples of the materials discussed in the sentence.
B) Yes, because it illustrates the reason for the increase mentioned later in the sentence.
C) No, because it interrupts the flow of the sentence by supplying irrelevant information.
D) No, because it weakens the focus of the passage by discussing a subject other than librarians.

5

A) NO CHANGE
B) to be circulated by them.
C) for their circulating.
D) for circulation.

6

A) NO CHANGE
B) librarians cataloging,
C) to catalog,
D) cataloging,

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CONTINUE

one of the fastest growing library services is public access computer use, there is great demand for computer instruction. 7 In fact, librarians' training now includes courses on research and Internet search methods. Many of whom teach classes in Internet navigation, database and software use, and digital information literacy. While these classes are particularly helpful to young students developing basic research skills, 8 but adult patrons can also benefit from librarian assistance in that they can acquire job-relevant computer skills. 9 Free to all who utilize their services, public libraries and librarians are especially valuable, because they offer free resources that may be difficult to find elsewhere, such as help with online job

7

Which choice most effectively combines the underlined sentences?

A) In fact, librarians' training now includes courses on research and Internet search methods; many librarians teach classes in Internet navigation, database and software use, and digital information literacy is taught by them.

B) In fact, many librarians, whose training now includes courses on research and Internet search methods, teach classes in Internet navigation, database and software use, and digital information literacy.

C) Training now includes courses on research and Internet search methods; many librarians, in fact, are teaching classes in Internet navigation, database and software use, and digital information literacy.

D) Including courses on research and Internet search methods in their training is, in fact, why many librarians teach classes in Internet navigation, database and software use, and digital information literacy.

8

A) NO CHANGE

B) and

C) for

D) DELETE the underlined portion.

9

Which choice most effectively sets up the examples given at the end of the sentence?

A) NO CHANGE

B) During periods of economic recession,

C) Although their value cannot be measured,

D) When it comes to the free services libraries provide,

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CONTINUE

searches as well as résumé and job material development. An overwhelming number of public libraries also report that they provide help with electronic government resources related to income taxes, **10** law troubles, and retirement programs.

In sum, the Internet does not replace the need for librarians, and librarians are hardly obsolete. **11** Like books, librarians have been around for a long time, but the Internet is extremely useful for many types of research.

10

A) NO CHANGE
B) legal issues,
C) concerns related to law courts,
D) matters for the law courts,

11

Which choice most clearly ends the passage with a restatement of the writer's primary claim?

A) NO CHANGE
B) Although their roles have diminished significantly, librarians will continue to be employed by public libraries for the foreseeable future.
C) The growth of electronic information has led to a diversification of librarians' skills and services, positioning them as savvy resource specialists for patrons.
D) However, given their extensive training and skills, librarians who have been displaced by budget cuts have many other possible avenues of employment.

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CONTINUE

Questions 12-22 are based on the following passage.

Tiny Exhibit, Big Impact

— 1 —

The first time I visited the Art Institute of Chicago, I expected to be impressed by its famous large paintings. **12** On one hand, I couldn't wait to view **13** painter, Georges Seurat's, 10-foot-wide *A Sunday Afternoon on the Island of La Grande Jatte* in its full size. It took me by surprise, then, when my favorite exhibit at the museum was one of **14** it's tiniest; the Thorne Miniature Rooms.

12

A) NO CHANGE
B) For instance,
C) However,
D) Similarly,

13

A) NO CHANGE
B) painter, Georges Seurat's
C) painter Georges Seurat's,
D) painter Georges Seurat's

14

A) NO CHANGE
B) its tiniest;
C) its tiniest:
D) it's tiniest,

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CONTINUE

— 2 —

Viewing the exhibit, I was amazed by the intricate details of some of the more ornately decorated rooms. I marveled at a replica of a salon (a formal living room) dating back to the reign of French king Louis XV. **15** Built into the dark paneled walls are bookshelves stocked with leather-bound volumes. The couch and chairs, in keeping with the style of the time, are characterized by elegantly curved arms and **16** legs, they are covered in luxurious velvet. A dime-sized portrait of a French aristocratic woman hangs in a golden frame.

— 3 —

This exhibit showcases sixty-eight miniature rooms inserted into a wall at eye level. Each furnished room consists of three walls; the fourth wall is a glass pane through which museumgoers observe. The rooms and their furnishings were painstakingly created to scale at 1/12th their actual size, so that one inch in the exhibit correlates with one foot in real life. A couch, for example, is seven inches long, and **17** that is based on a seven-foot-long couch. Each room represents a distinctive style of European, American, or Asian interior design from the thirteenth to twentieth centuries.

15

At this point, the writer is considering adding the following sentence.

> Some scholars argue that the excesses of King Louis XV's reign contributed significantly to the conditions that resulted in the French Revolution.

Should the writer make this addition here?

A) Yes, because it provides historical context for the Thorne Miniature Rooms exhibit.

B) Yes, because it explains why salons are often ornately decorated.

C) No, because it interrupts the paragraph's description of the miniature salon.

D) No, because it implies that the interior designer of the salon had political motivations.

16

A) NO CHANGE

B) legs, the couch and chairs

C) legs and

D) legs,

17

Which choice gives a second supporting example that is most similar to the example already in the sentence?

A) NO CHANGE

B) a tea cup is about a quarter of an inch.

C) there are even tiny cushions on some.

D) household items are also on this scale.

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CONTINUE

— 4 —

The plainer rooms are more sparsely **18** furnished. Their architectural features, furnishings, and decorations are just as true to the periods they represent. One of my favorite rooms in the whole exhibit, in fact, is an 1885 summer kitchen. The room is simple but spacious, with a small sink and counter along one wall, a cast-iron wood stove and some hanging pots and pans against another wall, and **19** a small table under a window of the third wall. Aside from a few simple wooden chairs placed near the edges of the room, the floor is open and obviously well worn.

18

Which choice most effectively combines the sentences at the underlined portion?

A) furnished by their
B) furnished, but their
C) furnished: their
D) furnished, whereas

19

Which choice most closely matches the stylistic pattern established earlier in the sentence?

A) NO CHANGE
B) a small table is under the third wall's window.
C) the third wall has a window and small table.
D) the third wall has a small table against it and a window.

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CONTINUE

— 5 —

As I walked through the exhibit, I overheard a **20** visitors' remark, "You know, that grandfather clock actually runs. Its glass door swings open, and the clock can be wound up." **21** Dotted with pin-sized knobs, another visitor noticed my fascination with a tiny writing desk and its drawers. "All of those little drawers pull out. And you see that hutch? Can you believe it has a secret compartment?" Given the exquisite craftsmanship and level of detail I'd already seen, I certainly could.

Question 22 asks about the previous passage as a whole.

20

A) NO CHANGE
B) visitors remarking,
C) visitor remarked,
D) visitor remark,

21

A) NO CHANGE
B) Another visitor, dotted with pin-sized knobs, noticed my fascination with a tiny writing desk and its drawers.
C) Another visitor dotted with pin-sized knobs noticed my fascination with a tiny writing desk and its drawers.
D) Another visitor noticed my fascination with a tiny writing desk and its drawers, dotted with pin-sized knobs.

Think about the previous passage as a whole as you answer question 22.

22

To make the passage most logical, paragraph 2 should be placed

A) where it is now.
B) after paragraph 3.
C) after paragraph 4.
D) after paragraph 5.

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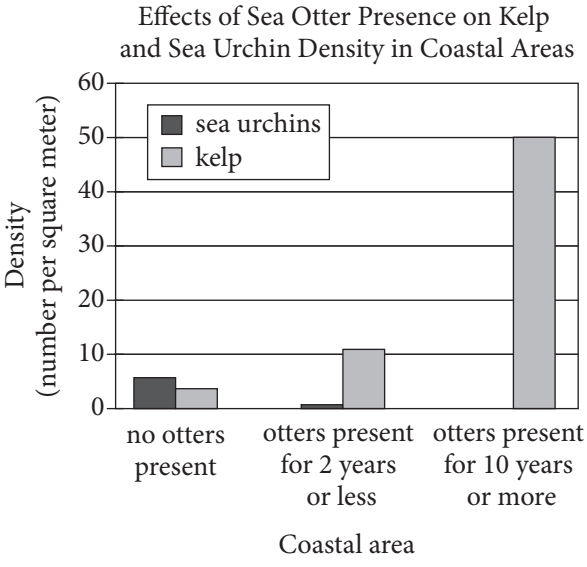
CONTINUE

Questions 23-33 are based on the following passage and supplementary material.

Environmentalist Otters

It has long been known that the sea otters **23** living along the West Coast of North America help keep kelp forests in their habitat healthy and vital. They do this by feeding on sea urchins and other herbivorous invertebrates that graze voraciously on kelp. With sea otters to keep the population of sea urchins in check, kelp forests can flourish. In fact, **24** two years or less of sea otters can completely eliminate sea urchins in a coastal area (see chart).



Adapted from David O. Duggins, "Kelp Beds and Sea Otters: An Experimental Approach." ©1980 by the Ecological Society of America.

Without sea otters present, **25** nevertheless, kelp forests run the danger of becoming barren stretches of coastal wasteland known as urchin barrens.

23

A) NO CHANGE
B) living along the West Coast of North America, they help
C) that live along the West Coast of North America and help to
D) that live along the West Coast of North America, where they help

24

Which choice offers an accurate interpretation of the data in the chart?

A) NO CHANGE
B) even two years or less of sea otter presence can reduce the sea urchin threat
C) kelp density increases proportionally as sea urchin density increases
D) even after sea otters were present for ten years or more, kelp density was still lower than sea urchin density

25

A) NO CHANGE
B) however,
C) hence,
D) likewise,

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CONTINUE

[1] What was less well-known, until recently at least, was how this relationship among sea otters, sea urchins, and kelp forests might help fight global warming. [2] The amount of carbon dioxide in the atmosphere has increased 40 percent **26** . [3] A recent study by two professors at the University of California, Santa Cruz, Chris Wilmers and James Estes, **27** suggests, that kelp forests protected by sea otters can absorb as much as twelve times the amount of carbon dioxide from the atmosphere as those where sea urchins are allowed to **28** devour the kelp. [4] Like **29** their terrestrial plant cousins, kelp removes carbon dioxide from the atmosphere, turning it into sugar fuel through photosynthesis, and releases oxygen back into the air.

26

At this point, the writer is considering adding the following information.

> since the start of the Industrial Revolution, resulting in a rise in global temperatures

Should the writer make this addition here?

A) Yes, because it establishes the relationship between the level of carbon dioxide in the atmosphere and global warming.

B) Yes, because it explains the key role sea otters, sea urchins, and kelp forests play in combating global warming.

C) No, because it contradicts the claim made in the previous paragraph that sea otters help keep kelp forests healthy.

D) No, because it mentions the Industrial Revolution, blurring the focus of the paragraph.

27

A) NO CHANGE

B) suggests—that

C) suggests, "that

D) suggests that

28

A) NO CHANGE

B) dispatch

C) overindulge on

D) dispose of

29

A) NO CHANGE

B) they're

C) its

D) it's

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CONTINUE

[5] Scientists knew this but did not recognize **30** how large a role they played in helping kelp forests to significantly decrease the amount of carbon dioxide in the atmosphere. [6] Far from making no difference to the ecosystem, the presence of otters was found to increase the carbon storage of kelp forests by 4.4 to 8.7 megatons annually, offsetting the amount of carbon dioxide emitted by three million to six million passenger cars each year. **31**

Wilmers and Estes caution, however, that **32** having more otters will not automatically solve the problem of higher levels of carbon dioxide in the air. But they suggest that the presence of otters provides a good model of how carbon can be sequestered, **33** or removed; from the atmosphere through the management of animal populations. If ecologists can better understand what kinds of impacts animals might have on the environment, Wilmers contends, "there might be opportunities for win-win conservation scenarios, whereby animal species are protected or enhanced, and carbon gets sequestered."

30

A) NO CHANGE
B) how large a role that it played
C) how large a role sea otters played
D) that they played such a large role

31

Where is the most logical place in this paragraph to add the following sentence?

What Wilmers and Estes discovered in their study, therefore, surprised them.

A) After sentence 1
B) After sentence 3
C) After sentence 4
D) After sentence 5

32

A) NO CHANGE
B) increasing the otter population
C) the otters multiplying
D) having more otters than other locations

33

A) NO CHANGE
B) or removed from,
C) or, removed from,
D) or removed, from

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CONTINUE

Questions 34-44 are based on the following passage.

A Quick Fix in a Throwaway Culture

Planned obsolescence, a practice **34** at which products are designed to have a limited period of **35** usefulness, has been a cornerstone of manufacturing strategy for the past 80 years. This approach increases sales, but it also stands in **36** austere contrast to a time when goods were produced to be durable. Planned obsolescence wastes materials as well as energy in making and shipping new products. It also reinforces the belief that it is easier to replace goods than to mend them, as repair shops are rare and **37** repair methods are often specialized. In 2009, an enterprising movement, the Repair Café, challenged this widely accepted belief.

34

A) NO CHANGE
B) from which
C) so that
D) whereby

35

A) NO CHANGE
B) usefulness—
C) usefulness;
D) usefulness

36

A) NO CHANGE
B) egregious
C) unmitigated
D) stark

37

Which choice provides information that best supports the claim made by this sentence?

A) NO CHANGE
B) obsolete goods can become collectible items.
C) no one knows whether something will fall into disrepair again.
D) new designs often have "bugs" that must be worked out.

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CONTINUE

[1] More like a **38** fair then an actual café, the first Repair Café took place in Amsterdam, the Netherlands. [2] It was the brainchild of former journalist Martine Postma, **39** wanting to take a practical stand in a throwaway culture. [3] Her goals were **40** straightforward, however: reduce waste, maintain and perpetuate knowledge and skills, and strengthen community. [4] Participants bring all manner of damaged articles—clothing, appliances, furniture, and more—to be repaired by a staff of volunteer specialists including tailors, electricians, and carpenters. [5] Since the inaugural Repair Café, others have been hosted in theater foyers, community centers, hotels, and auditoriums. [6] While **41** they await for service, patrons can enjoy coffee and snacks and mingle with their neighbors in need. **42**

38

A) NO CHANGE
B) fair than
C) fare than
D) fair, then

39

A) NO CHANGE
B) whom wants
C) who wanted
D) she wanted

40

A) NO CHANGE
B) straightforward, therefore:
C) straightforward, nonetheless:
D) straightforward:

41

A) NO CHANGE
B) awaiting
C) they waited
D) waiting

42

To make this paragraph most logical, sentence 5 should be placed

A) where it is now.
B) before sentence 1.
C) after sentence 3.
D) after sentence 6.

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CONTINUE

Though only about 3 percent of the Netherlands' municipal waste ends up in landfills, Repair Cafés still raise awareness about what may otherwise be mindless acts of waste by providing a venue for people to share and learn valuable skills that are in danger of being lost. 43 It is easy to classify old but fixable items as "junk" in an era that places great emphasis on the next big thing. In helping people consider how the goods they use on a daily basis work and are made, Repair Cafés restore a sense of relationship between human beings and material goods.

Though the concept remained a local trend at first, international Repair Cafés, all affiliated with the Dutch Repair Café via its website, have since arisen in France, Germany, South Africa, the United States, and other countries 44 on top of that. The original provides a central source for start-up tips and tools, as well as marketing advice to new Repair Cafés. As a result, the Repair Café has become a global network united by common ideals. Ironically, innovators are now looking back to old ways of doing things and applying them in today's cities in an effort to transform the way people relate to and think about the goods they consume.

43

At this point, the writer is considering adding the following sentence.

> As the number of corporate and service-based jobs has increased, the need for people who work with their hands has diminished.

Should the writer make this addition here?

A) Yes, because it provides an example of specific repair skills being lost.

B) Yes, because it elaborates on the statistic about the Netherlands' municipal waste.

C) No, because it blurs the paragraph's focus by introducing a topic that is not further explained.

D) No, because it contradicts the claims made in the rest of the paragraph.

44

A) NO CHANGE

B) in addition.

C) likewise.

D) DELETE the underlined portion, and end the sentence with a period.

STOP

If you finish before time is called, you may check your work on this section only. Do not turn to any other section.

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Math Test – No Calculator

25 MINUTES, 20 QUESTIONS

Turn to Section 3 of your answer sheet to answer the questions in this section.

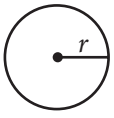
DIRECTIONS

For questions 1-15, solve each problem, choose the best answer from the choices provided, and fill in the corresponding circle on your answer sheet. **For questions 16-20**, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 16 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

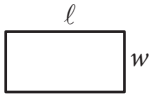
NOTES

1. The use of a calculator **is not permitted**.
2. All variables and expressions used represent real numbers unless otherwise indicated.
3. Figures provided in this test are drawn to scale unless otherwise indicated.
4. All figures lie in a plane unless otherwise indicated.
5. Unless otherwise indicated, the domain of a given function f is the set of all real numbers x for which $f(x)$ is a real number.

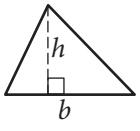
REFERENCE



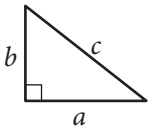
$A = \pi r^2$
$C = 2\pi r$



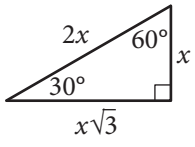
$A = \ell w$

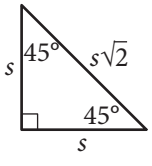


$A = \frac{1}{2}bh$

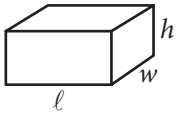


$c^2 = a^2 + b^2$

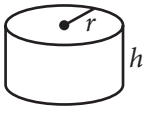




Special Right Triangles

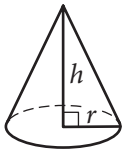


$V = \ell wh$

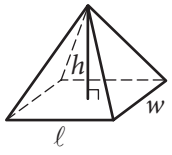


$V = \pi r^2 h$

$V = \frac{4}{3}\pi r^3$



$V = \frac{1}{3}\pi r^2 h$



$V = \frac{1}{3}\ell wh$

The number of degrees of arc in a circle is 360.
The number of radians of arc in a circle is 2π.
The sum of the measures in degrees of the angles of a triangle is 180.

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CONTINUE

1

If $5x + 6 = 10$, what is the value of $10x + 3$?

A) 4

B) 9

C) 11

D) 20

2

$$x + y = 0$$
$$3x - 2y = 10$$

Which of the following ordered pairs (x, y) satisfies the system of equations above?

A) $(3, -2)$

B) $(2, -2)$

C) $(-2, 2)$

D) $(-2, -2)$

3

A landscaping company estimates the price of a job, in dollars, using the expression $60 + 12nh$, where n is the number of landscapers who will be working and h is the total number of hours the job will take using n landscapers. Which of the following is the best interpretation of the number 12 in the expression?

A) The company charges $12 per hour for each landscaper.

B) A minimum of 12 landscapers will work on each job.

C) The price of every job increases by $12 every hour.

D) Each landscaper works 12 hours a day.

4

$$9a^4 + 12a^2b^2 + 4b^4$$

Which of the following is equivalent to the expression shown above?

A) $(3a^2 + 2b^2)^2$

B) $(3a + 2b)^4$

C) $(9a^2 + 4b^2)^2$

D) $(9a + 4b)^4$

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CONTINUE

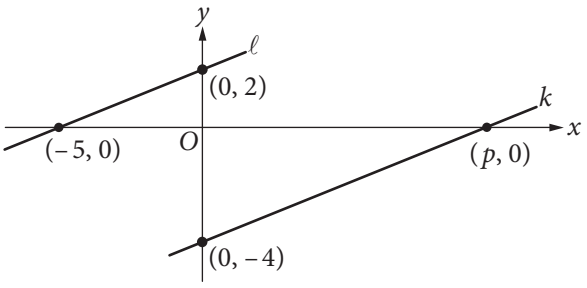
5

$$\sqrt{2k^2 + 17} - x = 0$$

If $k > 0$ and $x = 7$ in the equation above, what is the value of k ?

A) 2
B) 3
C) 4
D) 5

6



In the xy-plane above, line ℓ is parallel to line k. What is the value of p ?

A) 4
B) 5
C) 8
D) 10

7

If $\frac{x^{a^2}}{x^{b^2}} = x^{16}$, $x > 1$, and $a + b = 2$, what is the value of $a - b$?

A) 8
B) 14
C) 16
D) 18

8

$$nA = 360$$

The measure A, in degrees, of an exterior angle of a regular polygon is related to the number of sides, n, of the polygon by the formula above. If the measure of an exterior angle of a regular polygon is greater than 50°, what is the greatest number of sides it can have?

A) 5
B) 6
C) 7
D) 8

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CONTINUE

9

The graph of a line in the xy-plane has slope 2 and contains the point $(1, 8)$. The graph of a second line passes through the points $(1, 2)$ and $(2, 1)$. If the two lines intersect at the point (a, b), what is the value of $a + b$?

A) 4

B) 3

C) -1

D) -4

10

Which of the following equations has a graph in the xy-plane for which y is always greater than or equal to -1 ?

A) $y = |x| - 2$

B) $y = x^2 - 2$

C) $y = (x - 2)^2$

D) $y = x^3 - 2$

11

Which of the following complex numbers is equivalent to $\frac{3 - 5i}{8 + 2i}$? (Note: $i = \sqrt{-1}$)

A) $\frac{3}{8} - \frac{5i}{2}$

B) $\frac{3}{8} + \frac{5i}{2}$

C) $\frac{7}{34} - \frac{23i}{34}$

D) $\frac{7}{34} + \frac{23i}{34}$

12

$$R = \frac{F}{N + F}$$

A website uses the formula above to calculate a seller's rating, R, based on the number of favorable reviews, F, and unfavorable reviews, N. Which of the following expresses the number of favorable reviews in terms of the other variables?

A) $F = \frac{RN}{R - 1}$

B) $F = \frac{RN}{1 - R}$

C) $F = \frac{N}{1 - R}$

D) $F = \frac{N}{R - 1}$

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CONTINUE

13

What is the sum of all values of m that satisfy $2m^2 - 16m + 8 = 0$?

A) -8

B) $-4\sqrt{3}$

C) $4\sqrt{3}$

D) 8

14

A radioactive substance decays at an annual rate of 13 percent. If the initial amount of the substance is 325 grams, which of the following functions f models the remaining amount of the substance, in grams, t years later?

A) $f(t) = 325(0.87)^t$

B) $f(t) = 325(0.13)^t$

C) $f(t) = 0.87(325)^t$

D) $f(t) = 0.13(325)^t$

15

The expression $\frac{5x-2}{x+3}$ is equivalent to which of the following?

A) $\frac{5-2}{3}$

B) $5 - \frac{2}{3}$

C) $5 - \frac{2}{x+3}$

D) $5 - \frac{17}{x+3}$

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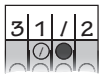
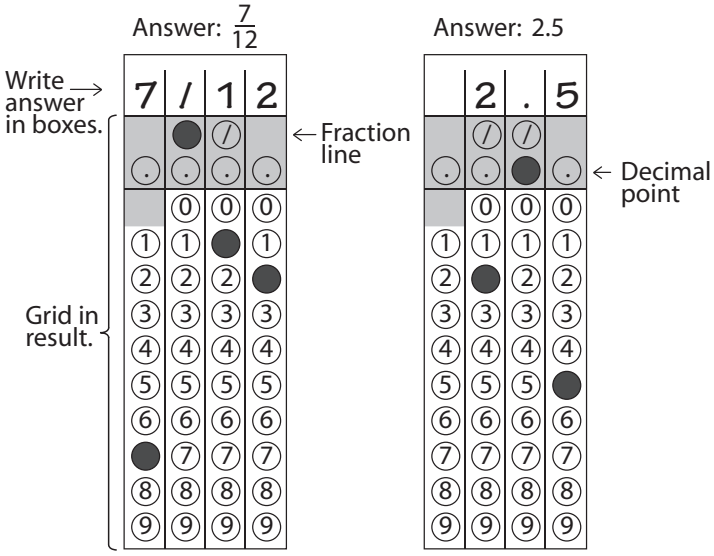
CONTINUE

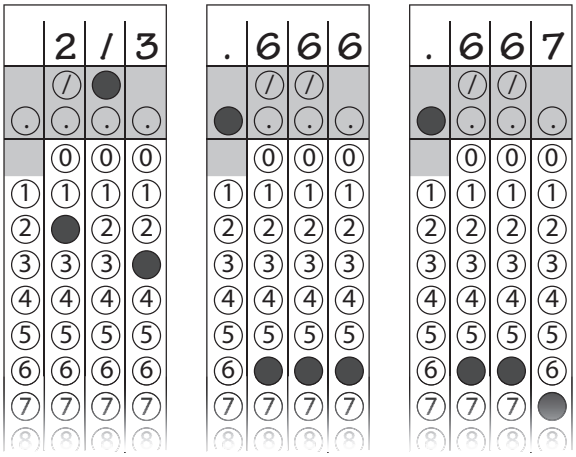
DIRECTIONS

For questions 16–20, solve the problem and enter your answer in the grid, as described below, on the answer sheet.

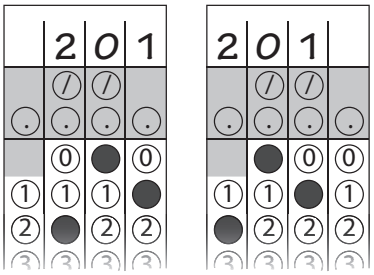
1. Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately. You will receive credit only if the circles are filled in correctly.
2. Mark no more than one circle in any column.
3. No question has a negative answer.
4. Some problems may have more than one correct answer. In such cases, grid only one answer.
5. **Mixed numbers** such as $3\frac{1}{2}$ must be gridded as 3.5 or 7/2. (If  is entered into the grid, it will be interpreted as $\frac{31}{2}$, not $3\frac{1}{2}$.)
6. **Decimal answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid.



Acceptable ways to grid $\frac{2}{3}$ are:



Answer: 201 – either position is correct



NOTE: You may start your answers in any column, space permitting. Columns you don't need to use should be left blank.

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CONTINUE

16

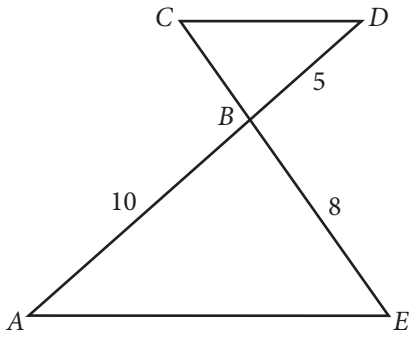
The sales manager of a company awarded a total of $3000 in bonuses to the most productive salespeople. The bonuses were awarded in amounts of $250 or $750. If at least one $250 bonus and at least one $750 bonus were awarded, what is one possible number of $250 bonuses awarded?

17

$$2x(3x + 5) + 3(3x + 5) = ax^2 + bx + c$$

In the equation above, a, b, and c are constants. If the equation is true for all values of x, what is the value of b ?

18



In the figure above, $\overline{AE} \parallel \overline{CD}$ and segment AD intersects segment CE at B. What is the length of segment CE ?

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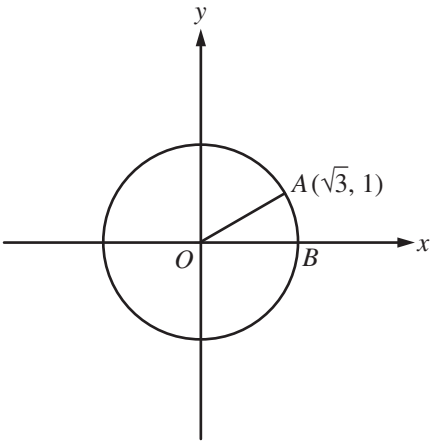
CONTINUE

19



In the xy-plane above, O is the center of the circle, and the measure of $\angle AOB$ is $\frac{\pi}{a}$ radians. What is the value of a ?

20

$$ax + by = 12$$
$$2x + 8y = 60$$

In the system of equations above, a and b are constants. If the system has infinitely many solutions, what is the value of $\frac{a}{b}$?

STOP

If you finish before time is called, you may check your work on this section only. Do not turn to any other section.

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Math Test – Calculator

55 MINUTES, 38 QUESTIONS

Turn to Section 4 of your answer sheet to answer the questions in this section.

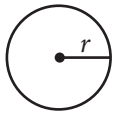
DIRECTIONS

For questions 1-30, solve each problem, choose the best answer from the choices provided, and fill in the corresponding circle on your answer sheet. **For questions 31-38**, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 31 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

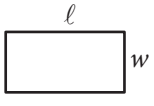
NOTES

1. The use of a calculator **is permitted**.
2. All variables and expressions used represent real numbers unless otherwise indicated.
3. Figures provided in this test are drawn to scale unless otherwise indicated.
4. All figures lie in a plane unless otherwise indicated.
5. Unless otherwise indicated, the domain of a given function f is the set of all real numbers x for which $f(x)$ is a real number.

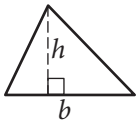
REFERENCE



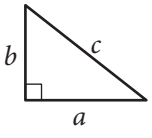
$A = \pi r^2$
$C = 2\pi r$



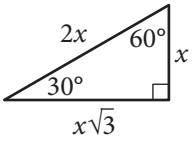
$A = \ell w$

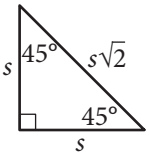


$A = \frac{1}{2}bh$

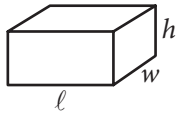


$c^2 = a^2 + b^2$

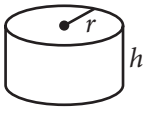




Special Right Triangles

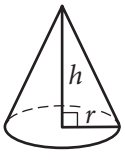


$V = \ell wh$

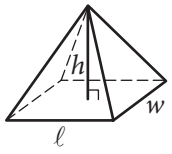


$V = \pi r^2 h$

$V = \frac{4}{3}\pi r^3$



$V = \frac{1}{3}\pi r^2 h$



$V = \frac{1}{3}\ell wh$

The number of degrees of arc in a circle is 360.
The number of radians of arc in a circle is 2π.
The sum of the measures in degrees of the angles of a triangle is 180.

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CONTINUE

1

A musician has a new song available for downloading or streaming. The musician earns \$0.09 each time the song is downloaded and \$0.002 each time the song is streamed. Which of the following expressions represents the amount, in dollars, that the musician earns if the song is downloaded d times and streamed s times?

A) $0.002d + 0.09s$

B) $0.002d - 0.09s$

C) $0.09d + 0.002s$

D) $0.09d - 0.002s$

2

A quality control manager at a factory selects 7 lightbulbs at random for inspection out of every 400 lightbulbs produced. At this rate, how many lightbulbs will be inspected if the factory produces 20,000 lightbulbs?

A) 300

B) 350

C) 400

D) 450

3

$$\ell = 24 + 3.5m$$

One end of a spring is attached to a ceiling. When an object of mass m kilograms is attached to the other end of the spring, the spring stretches to a length of ℓ centimeters as shown in the equation above. What is m when ℓ is 73 ?

A) 14

B) 27.7

C) 73

D) 279.5

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CONTINUE

Questions 4 and 5 refer to the following information.

The amount of money a performer earns is directly proportional to the number of people attending the performance. The performer earns $120 at a performance where 8 people attend.

4

How much money will the performer earn when 20 people attend a performance?

A) $960

B) $480

C) $300

D) $240

5

The performer uses 43% of the money earned to pay the costs involved in putting on each performance. The rest of the money earned is the performer's profit. What is the profit the performer makes at a performance where 8 people attend?

A) $51.60

B) $57.00

C) $68.40

D) $77.00

6

When 4 times the number x is added to 12, the result is 8. What number results when 2 times x is added to 7 ?

A) -1

B) 5

C) 8

D) 9

7

$$y = x^2 - 6x + 8$$

The equation above represents a parabola in the xy-plane. Which of the following equivalent forms of the equation displays the x-intercepts of the parabola as constants or coefficients?

A) $y - 8 = x^2 - 6x$

B) $y + 1 = (x - 3)^2$

C) $y = x(x - 6) + 8$

D) $y = (x - 2)(x - 4)$

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CONTINUE

8

In a video game, each player starts the game with k points and loses 2 points each time a task is not completed. If a player who gains no additional points and fails to complete 100 tasks has a score of 200 points, what is the value of k ?

A) 0

B) 150

C) 250

D) 400

9

A worker uses a forklift to move boxes that weigh either 40 pounds or 65 pounds each. Let x be the number of 40-pound boxes and y be the number of 65-pound boxes. The forklift can carry up to either 45 boxes or a weight of 2,400 pounds. Which of the following systems of inequalities represents this relationship?

A) $\begin{cases} 40x + 65y \le 2{,}400 \\ x + y \le 45 \end{cases}$

B) $\begin{cases} \frac{x}{40} + \frac{y}{65} \le 2{,}400 \\ x + y \le 45 \end{cases}$

C) $\begin{cases} 40x + 65y \le 45 \\ x + y \le 2{,}400 \end{cases}$

D) $\begin{cases} x + y \le 2{,}400 \\ 40x + 65y \le 2{,}400 \end{cases}$

10

A function f satisfies $f(2) = 3$ and $f(3) = 5$. A function g satisfies $g(3) = 2$ and $g(5) = 6$. What is the value of $f(g(3))$?

A) 2

B) 3

C) 5

D) 6

11

Number of hours Tony plans to read the novel per day	3
Number of parts in the novel	8
Number of chapters in the novel	239
Number of words Tony reads per minute	250
Number of pages in the novel	1,078
Number of words in the novel	349,168

Tony is planning to read a novel. The table above shows information about the novel, Tony's reading speed, and the amount of time he plans to spend reading the novel each day. If Tony reads at the rates given in the table, which of the following is closest to the number of days it would take Tony to read the entire novel?

A) 6

B) 8

C) 23

D) 324

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CONTINUE

12

On January 1, 2000, there were 175,000 tons of trash in a landfill that had a capacity of 325,000 tons. Each year since then, the amount of trash in the landfill increased by 7,500 tons. If y represents the time, in years, after January 1, 2000, which of the following inequalities describes the set of years where the landfill is at or above capacity?

A) $325{,}000 - 7{,}500 \leq y$

B) $325{,}000 \leq 7{,}500y$

C) $150{,}000 \geq 7{,}500y$

D) $175{,}000 + 7{,}500y \geq 325{,}000$

13

A researcher conducted a survey to determine whether people in a certain large town prefer watching sports on television to attending the sporting event. The researcher asked 117 people who visited a local restaurant on a Saturday, and 7 people refused to respond. Which of the following factors makes it least likely that a reliable conclusion can be drawn about the sports-watching preferences of all people in the town?

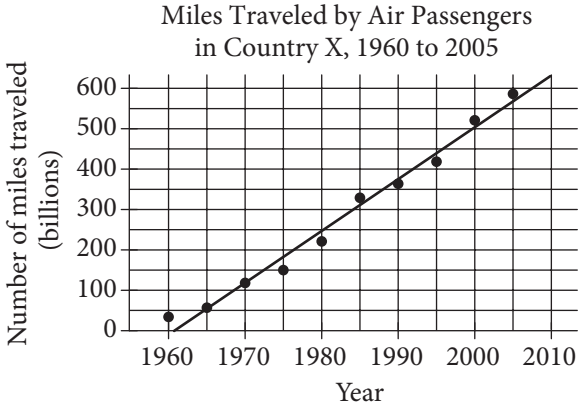
A) Sample size

B) Population size

C) The number of people who refused to respond

D) Where the survey was given

14



According to the line of best fit in the scatterplot above, which of the following best approximates the year in which the number of miles traveled by air passengers in Country X was estimated to be 550 billion?

A) 1997

B) 2000

C) 2003

D) 2008

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CONTINUE

15

The distance traveled by Earth in one orbit around the Sun is about 580,000,000 miles. Earth makes one complete orbit around the Sun in one year. Of the following, which is closest to the average speed of Earth, in miles per hour, as it orbits the Sun?

A) 66,000
B) 93,000
C) 210,000
D) 420,000

16

Results on the Bar Exam of Law School Graduates

	Passed bar exam	Did not pass bar exam
Took review course	18	82
Did not take review course	7	93

The table above summarizes the results of 200 law school graduates who took the bar exam. If one of the surveyed graduates who passed the bar exam is chosen at random for an interview, what is the probability that the person chosen did not take the review course?

A) $\frac{18}{25}$
B) $\frac{7}{25}$
C) $\frac{25}{200}$
D) $\frac{7}{200}$

17

The atomic weight of an unknown element, in atomic mass units (amu), is approximately 20% less than that of calcium. The atomic weight of calcium is 40 amu. Which of the following best approximates the atomic weight, in amu, of the unknown element?

A) 8
B) 20
C) 32
D) 48

18

A survey was taken of the value of homes in a county, and it was found that the mean home value was $165,000 and the median home value was $125,000. Which of the following situations could explain the difference between the mean and median home values in the county?

A) The homes have values that are close to each other.
B) There are a few homes that are valued much less than the rest.
C) There are a few homes that are valued much more than the rest.
D) Many of the homes have values between $125,000 and $165,000.

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CONTINUE

Questions 19 and 20 refer to the following information.

A sociologist chose 300 students at random from each of two schools and asked each student how many siblings he or she has. The results are shown in the table below.

Students' Sibling Survey

Number of siblings	Lincoln School	Washington School
0	120	140
1	80	110
2	60	30
3	30	10
4	10	10

There are a total of 2,400 students at Lincoln School and 3,300 students at Washington School.

19

What is the median number of siblings for all the students surveyed?

A) 0

B) 1

C) 2

D) 3

20

Based on the survey data, which of the following most accurately compares the expected total number of students with 4 siblings at the two schools?

A) The total number of students with 4 siblings is expected to be equal at the two schools.

B) The total number of students with 4 siblings at Lincoln School is expected to be 30 more than at Washington School.

C) The total number of students with 4 siblings at Washington School is expected to be 30 more than at Lincoln School.

D) The total number of students with 4 siblings at Washington School is expected to be 900 more than at Lincoln School.

21

A project manager estimates that a project will take x hours to complete, where $x > 100$. The goal is for the estimate to be within 10 hours of the time it will actually take to complete the project. If the manager meets the goal and it takes y hours to complete the project, which of the following inequalities represents the relationship between the estimated time and the actual completion time?

A) $x + y < 10$

B) $y > x + 10$

C) $y < x - 10$

D) $-10 < y - x < 10$

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CONTINUE

Questions 22 and 23 refer to the following information.

$$I = \frac{P}{4\pi r^2}$$

At a large distance r from a radio antenna, the intensity of the radio signal I is related to the power of the signal P by the formula above.

22

Which of the following expresses the square of the distance from the radio antenna in terms of the intensity of the radio signal and the power of the signal?

A) $r^2 = \frac{IP}{4\pi}$

B) $r^2 = \frac{P}{4\pi I}$

C) $r^2 = \frac{4\pi I}{P}$

D) $r^2 = \frac{I}{4\pi P}$

23

For the same signal emitted by a radio antenna, Observer A measures its intensity to be 16 times the intensity measured by Observer B. The distance of Observer A from the radio antenna is what fraction of the distance of Observer B from the radio antenna?

A) $\frac{1}{4}$

B) $\frac{1}{16}$

C) $\frac{1}{64}$

D) $\frac{1}{256}$

24

$$x^2 + y^2 + 4x - 2y = -1$$

The equation of a circle in the xy-plane is shown above. What is the radius of the circle?

A) 2

B) 3

C) 4

D) 9

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CONTINUE

25

The graph of the linear function f has intercepts at $(a, 0)$ and $(0, b)$ in the xy-plane. If $a + b = 0$ and $a \neq b$, which of the following is true about the slope of the graph of f ?

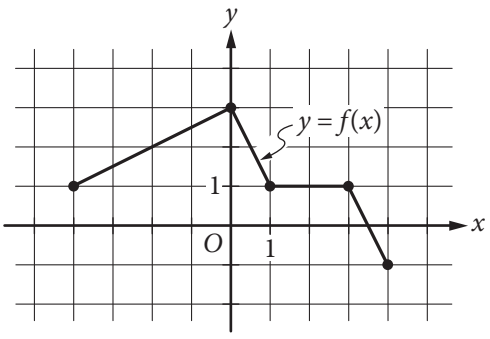
A) It is positive.

B) It is negative.

C) It equals zero.

D) It is undefined.

26



The complete graph of the function f is shown in the xy-plane above. Which of the following are equal to 1 ?

I. $f(-4)$

II. $f\left(\frac{3}{2}\right)$

III. $f(3)$

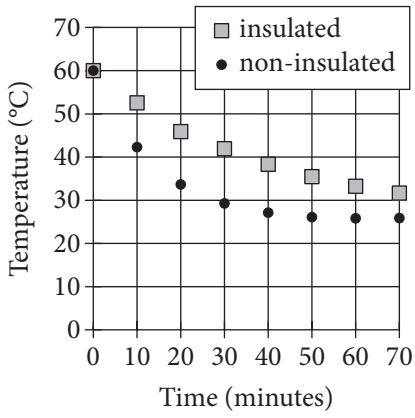
A) III only

B) I and III only

C) II and III only

D) I, II, and III

27



Two samples of water of equal mass are heated to 60 degrees Celsius (°C). One sample is poured into an insulated container, and the other sample is poured into a non-insulated container. The samples are then left for 70 minutes to cool in a room having a temperature of 25°C. The graph above shows the temperature of each sample at 10-minute intervals. Which of the following statements correctly compares the average rates at which the temperatures of the two samples change?

A) In every 10-minute interval, the magnitude of the rate of change of temperature of the insulated sample is greater than that of the non-insulated sample.

B) In every 10-minute interval, the magnitude of the rate of change of temperature of the non-insulated sample is greater than that of the insulated sample.

C) In the intervals from 0 to 10 minutes and from 10 to 20 minutes, the rates of change of temperature of the insulated sample are of greater magnitude, whereas in the intervals from 40 to 50 minutes and from 50 to 60 minutes, the rates of change of temperature of the non-insulated sample are of greater magnitude.

D) In the intervals from 0 to 10 minutes and from 10 to 20 minutes, the rates of change of temperature of the non-insulated sample are of greater magnitude, whereas in the intervals from 40 to 50 minutes and from 50 to 60 minutes, the rates of change of temperature of the insulated sample are of greater magnitude.

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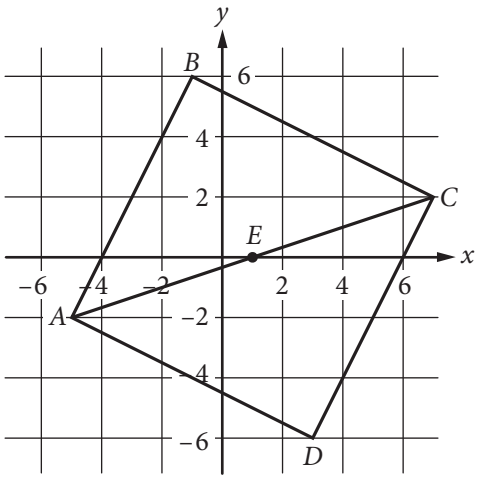
CONTINUE

28



In the xy-plane above, $ABCD$ is a square and point E is the center of the square. The coordinates of points C and E are $(7, 2)$ and $(1, 0)$, respectively. Which of the following is an equation of the line that passes through points B and D ?

A) $y = -3x - 1$

B) $y = -3(x - 1)$

C) $y = -\frac{1}{3}x + 4$

D) $y = -\frac{1}{3}x - 1$

29

$$y = 3$$

$$y = ax^2 + b$$

In the system of equations above, a and b are constants. For which of the following values of a and b does the system of equations have exactly two real solutions?

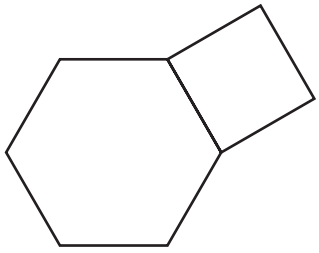
A) $a = -2,\ b = 2$

B) $a = -2,\ b = 4$

C) $a = 2,\ b = 4$

D) $a = 4,\ b = 3$

30



The figure above shows a regular hexagon with sides of length a and a square with sides of length a. If the area of the hexagon is $384\sqrt{3}$ square inches, what is the area, in square inches, of the square?

A) 256

B) 192

C) $64\sqrt{3}$

D) $16\sqrt{3}$

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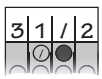
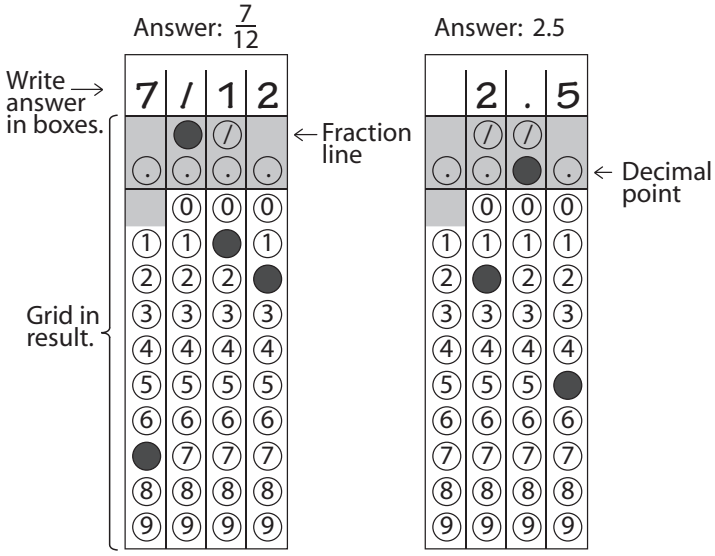
CONTINUE

DIRECTIONS

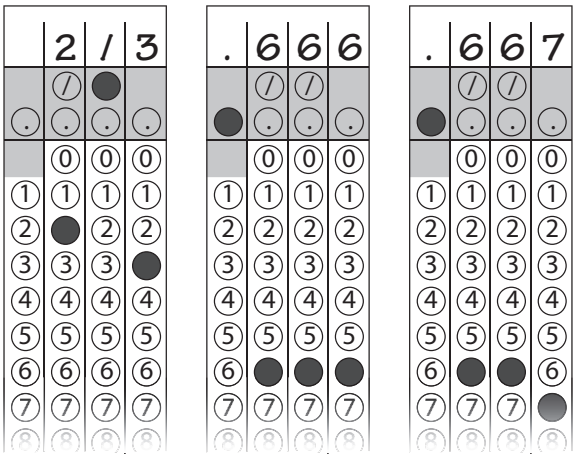
For questions 31-38, solve the problem and enter your answer in the grid, as described below, on the answer sheet.

1. Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the circles accurately. You will receive credit only if the circles are filled in correctly.
2. Mark no more than one circle in any column.
3. No question has a negative answer.
4. Some problems may have more than one correct answer. In such cases, grid only one answer.
5. **Mixed numbers** such as $3\frac{1}{2}$ must be gridded as 3.5 or 7/2. (If 

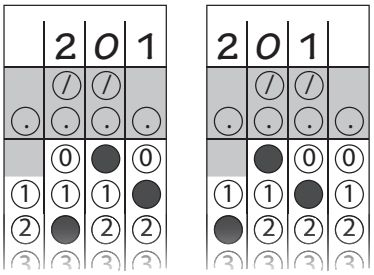
is entered into the grid, it will be interpreted as $\frac{31}{2}$, not $3\frac{1}{2}$.)
6. **Decimal answers:** If you obtain a decimal answer with more digits than the grid can accommodate, it may be either rounded or truncated, but it must fill the entire grid.



Acceptable ways to grid $\frac{2}{3}$ are:



Answer: 201 – either position is correct



NOTE: You may start your answers in any column, space permitting. Columns you don't need to use should be left blank.

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CONTINUE

31

A coastal geologist estimates that a certain country's beaches are eroding at a rate of 1.5 feet per year. According to the geologist's estimate, how long will it take, in years, for the country's beaches to erode by 21 feet?

32

If h hours and 30 minutes is equal to 450 minutes, what is the value of h ?

33

In the xy-plane, the point $(3, 6)$ lies on the graph of the function $f(x) = 3x^2 - bx + 12$. What is the value of b ?

34

In one semester, Doug and Laura spent a combined 250 hours in the tutoring lab. If Doug spent 40 more hours in the lab than Laura did, how many hours did Laura spend in the lab?

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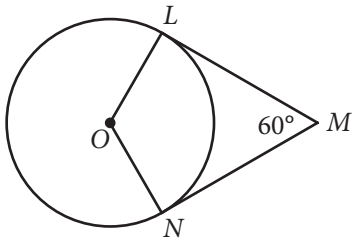
CONTINUE

35

$$a = 18t + 15$$

Jane made an initial deposit to a savings account. Each week thereafter she deposited a fixed amount to the account. The equation above models the amount a, in dollars, that Jane has deposited after t weekly deposits. According to the model, how many dollars was Jane's initial deposit? (Disregard the $ sign when gridding your answer.)

36



In the figure above, point O is the center of the circle, line segments LM and MN are tangent to the circle at points L and N, respectively, and the segments intersect at point M as shown. If the circumference of the circle is 96, what is the length of minor arc $\overset{\frown}{LN}$?

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CONTINUE

Questions 37 and 38 refer to the following information.

A botanist is cultivating a rare species of plant in a controlled environment and currently has 3000 of these plants. The population of this species that the botanist expects to grow next year, $N_{\text{next year}}$, can be estimated from the number of plants this year, $N_{\text{this year}}$, by the equation below.

$$N_{\text{next year}} = N_{\text{this year}} + 0.2\left(N_{\text{this year}}\right)\left(1 - \frac{N_{\text{this year}}}{K}\right)$$

The constant K in this formula is the number of plants the environment is able to support.

37

According to the formula, what will be the number of plants two years from now if $K = 4000$? (Round your answer to the nearest whole number.)

38

The botanist would like to increase the number of plants that the environment can support so that the population of the species will increase more rapidly. If the botanist's goal is that the number of plants will increase from 3000 this year to 3360 next year, how many plants must the modified environment support?

STOP

If you finish before time is called, you may check your work on this section only. Do not turn to any other section.

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YOUR NAME (PRINT) .....

LAST FIRST MI

TEST CENTER .....

NUMBER NAME OF TEST CENTER ROOM NUMBER

The SAT

GENERAL DIRECTIONS

- You may work on only one section at a time.
- If you finish a section before time is called, check your work on that section. You may NOT turn to any other section.

MARKING ANSWERS

- Be sure to mark your answer sheet properly.

COMPLETE MARK ● **EXAMPLES OF INCOMPLETE MARKS**

- You must use a No. 2 pencil.
- Carefully mark only one answer for each question.
- Make sure you fill the entire circle darkly and completely.
- Do not make any stray marks on your answer sheet.
- If you erase, do so completely. Incomplete erasures may be scored as intended answers.
- Use only the answer spaces that correspond to the question numbers.

USING YOUR TEST BOOK

- You may use the test book for scratch work, but you will not receive credit for anything that you write in your test book.
- After time has been called, you may not transfer answers from your test book to your answer sheet or fill in circles.
- You may not fold or remove pages or portions of a page from this book, or take the book or answer sheet from the testing room.

SCORING

- For each correct answer, you receive one point.
- You do not lose points for wrong answers; therefore, you should try to answer every question even if you are not sure of the correct answer.

IMPORTANT

The codes below are unique to your test book.
Copy them on your answer sheet in boxes 8 and 9 and fill in the corresponding circles exactly as shown.

9 TEST ID
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8 FORM CODE
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B	B	B	B	1	1	1
C	C	C	C	2	2	2
D	D	D	D	3	3	3
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SAT® Practice Essay #2

ESSAY BOOK

DIRECTIONS

The essay gives you an opportunity to show how effectively you can read and comprehend a passage and write an essay analyzing the passage. In your essay, you should demonstrate that you have read the passage carefully, present a clear and logical analysis, and use language precisely.

Your essay must be written on the lines provided in your answer booklet; except for the Planning Page of the answer booklet, you will receive no other paper on which to write. You will have enough space if you write on every line, avoid wide margins, and keep your handwriting to a reasonable size. Remember that people who are not familiar with your handwriting will read what you write. Try to write or print so that what you are writing is legible to those readers.

You have 50 minutes to read the passage and write an essay in response to the prompt provided inside this booklet.

REMINDERS

- **Do not write your essay in this booklet. Only what you write on the lined pages of your answer booklet will be evaluated.**
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As you read the passage below, consider how Martin Luther King Jr. uses

- evidence, such as facts or examples, to support claims.
- reasoning to develop ideas and to connect claims and evidence.
- stylistic or persuasive elements, such as word choice or appeals to emotion, to add power to the ideas expressed.

Adapted from Martin Luther King Jr., "Beyond Vietnam—A Time to Break Silence." The speech was delivered at Riverside Church in New York City on April 4, 1967.

1 Since I am a preacher by calling, I suppose it is not surprising that I have . . . major reasons for bringing Vietnam into the field of my moral vision. There is at the outset a very obvious and almost facile connection between the war in Vietnam and the struggle I, and others, have been waging in America. A few years ago there was a shining moment in that struggle. It seemed as if there was a real promise of hope for the poor—both black and white—through the poverty program. There were experiments, hopes, new beginnings. Then came the buildup in Vietnam, and I watched this program broken and eviscerated, as if it were some idle political plaything of a society gone mad on war, and I knew that America would never invest the necessary funds or energies in rehabilitation of its poor so long as adventures like Vietnam continued to draw men and skills and money like some demonic destructive suction tube. So, I was increasingly compelled to see the war as an enemy of the poor and to attack it as such.

2 Perhaps a more tragic recognition of reality took place when it became clear to me that the war was doing far more than devastating the hopes of the poor at home. It was sending their sons and their brothers and their husbands to fight and to die in extraordinarily high proportions relative to the rest of the population. We were taking the black young men who had been crippled by our society and sending them eight thousand miles away to guarantee liberties in Southeast Asia which they had not found in southwest Georgia and East Harlem. And so we have been repeatedly faced with the cruel irony of watching Negro and white boys on TV screens as they kill and die together for a nation that has been unable to seat them together in the same schools. And so we watch them in brutal solidarity burning the huts of a poor village, but we realize that they would hardly live on the same block in Chicago. I could not be silent in the face of such cruel manipulation of the poor.

3 My [next] reason moves to an even deeper level of awareness, for it grows out of my experience in the ghettoes of the North over the last three years—especially the last three summers. As I have walked among the desperate, rejected, and angry young men, I have told them that Molotov cocktails[1] and rifles would not solve their problems. I have tried to offer them my deepest compassion while maintaining my conviction that social change comes most meaningfully through nonviolent action. But they ask—and rightly so—what about Vietnam? They ask if our own nation wasn't using massive doses of violence to solve its problems, to bring about the changes it wanted. Their questions hit home, and I knew that I could never again raise my voice against the violence of the oppressed in the ghettos without having first spoken clearly to the greatest purveyor of violence in the world today—my own government. For the sake of those boys, for the sake of this government, for the sake of the hundreds of thousands trembling under our violence, I cannot be silent.

4 For those who ask the question, "Aren't you a civil rights leader?" and thereby mean to exclude me from the movement for peace, I have this further answer. In 1957 when a group of us formed the Southern Christian Leadership Conference, we chose as our motto: "To save the soul of America." We were convinced that we could not limit our vision to certain rights for black people, but instead affirmed the conviction that America would never be free or saved from itself until the descendants of its slaves were loosed completely from the shackles they still wear. . . . Now, it should be incandescently clear that no one who has any concern for the integrity and life of America today can ignore the present war. If America's soul becomes totally poisoned, part of the autopsy must read: Vietnam. It can never be saved so long as it destroys the deepest hopes of men the world over. So it is that those of us who are yet determined that America will be—are—are led down the path of protest and dissent, working for the health of our land.

Write an essay in which you explain how Martin Luther King Jr. builds an argument to persuade his audience that American involvement in the Vietnam War is unjust. In your essay, analyze how King uses one or more of the features listed in the box above (or features of your own choice) to strengthen the logic and persuasiveness of his argument. Be sure that your analysis focuses on the most relevant features of the passage.

Your essay should not explain whether you agree with King's claims, but rather explain how King builds an argument to persuade his audience.

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[1] A crude bomb made from glass bottles filled with flammable liquids and topped with wicks

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Answer Explanations
SAT® Practice Test #2

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Answer Explanations

SAT Practice Test #2

Section 1: Reading Test

QUESTION 1.

Choice A is the best answer. The narrator admits that his job is "irksome" (line 7) and reflects on the reasons for his dislike. The narrator admits that his work is a "dry and tedious task" (line 9) and that he has a poor relationship with his superior: "the antipathy which had sprung up between myself and my employer striking deeper root and spreading denser shade daily, excluded me from every glimpse of the sunshine of life" (lines 28-31).

Choices B, C, and D are incorrect because the narrator does not become increasingly competitive with his employer, publicly defend his choice of occupation, or exhibit optimism about his job.

QUESTION 2.

Choice B is the best answer. The first sentence of the passage explains that people do not like to admit when they've chosen the wrong profession and that they will continue in their profession for a while before admitting their unhappiness. This statement mirrors the narrator's own situation, as the narrator admits he finds his own occupation "irksome" (line 7) but that he might "long have borne with the nuisance" (line 10) if not for his poor relationship with his employer.

Choices A, C, and D are incorrect because the first sentence does not discuss a controversy, focus on the narrator's employer, Edward Crimsworth, or provide any evidence of malicious conduct.

QUESTION 3.

Choice C is the best answer. The first paragraph shifts from a general discussion of how people deal with choosing an occupation they later regret (lines 1-6) to the narrator's description of his own dissatisfaction with his occupation (lines 6-33).

Choices A, B, and D are incorrect because the first paragraph does not focus on the narrator's self-doubt, his expectations of life as a tradesman, or his identification of alternatives to his current occupation.

QUESTION 4.

Choice A is the best answer. In lines 27-33, the narrator is describing the hostile relationship between him and his superior, Edward Crimsworth. This relationship causes the narrator to feel like he lives in the "shade" and in "humid darkness." These words evoke the narrator's feelings of dismay toward his current occupation and his poor relationship with his superior—factors that cause him to live without "the sunshine of life."

Choices B, C, and D are incorrect because the words "shade" and "darkness" do not reflect the narrator's sinister thoughts, his fear of confinement, or his longing for rest.

QUESTION 5.

Choice D is the best answer. The narrator states that Crimsworth dislikes him because the narrator may "one day make a successful tradesman" (line 43). Crimsworth recognizes that the narrator is not "inferior to him" but rather more intelligent, someone who keeps "the padlock of silence on mental wealth which [Crimsworth] was no sharer" (lines 44-48). Crimsworth feels inferior to the narrator and is jealous of the narrator's intellectual and professional abilities.

Choices A and C are incorrect because the narrator is not described as exhibiting "high spirits" or "rash actions," but "Caution, Tact, [and] Observation" (line 51). Choice B is incorrect because the narrator's "humble background" is not discussed.

QUESTION 6.

Choice B is the best answer. Lines 61-62 state that the narrator "had long ceased to regard Mr. Crimsworth as my brother." In these lines, the term "brother" means friend or ally, which suggests that the narrator and Crimsworth were once friendly toward one another.

Choices A, C, and D are incorrect because the narrator originally viewed Crimsworth as a friend, or ally, and later as a hostile superior; he never viewed Crimsworth as a harmless rival, perceptive judge, or demanding mentor.

QUESTION 7.

Choice D is the best answer. In lines 61-62, the narrator states that he once regarded Mr. Crimsworth as his "brother." This statement provides evidence that the narrator originally viewed Crimsworth as a sympathetic ally.

Choices A, B, and C do not provide the best evidence for the claim that Crimsworth was a sympathetic ally. Rather, choices A, B, and C provide evidence of the hostile relationship that currently exists between the narrator and Crimsworth.

QUESTION 8.

Choice D is the best answer. In lines 48-53, the narrator states that he exhibited "Caution, Tact, [and] Observation" at work and watched Mr. Crimsworth with "lynx-eyes." The narrator acknowledges that Crimsworth was "prepared to steal snake-like" if he caught the narrator acting without tact or being disrespectful toward his superiors (lines 53-56). Thus, Crimsworth was trying to find a reason to place the narrator "in a ridiculous or mortifying position" (lines 49-50) by accusing the narrator of acting unprofessionally. The use of the lynx and snake serve to emphasize the narrator and Crimsworth's adversarial, or hostile, relationship.

Choices A and B are incorrect because the description of the lynx and snake does not contrast two hypothetical courses of action or convey a resolution. Choice C is incorrect because while lines 48-56 suggest that Crimsworth is trying to find a reason to fault the narrator's work, they do not imply that an altercation, or heated dispute, between the narrator and Crimsworth is likely to occur.

QUESTION 9.

Choice B is the best answer. Lines 73-74 state that the narrator noticed there was no "cheering red gleam" of fire in his sitting-room fireplace. The lack of a "cheering," or comforting, fire suggests that the narrator sometimes found his lodgings to be dreary or bleak.

Choices A and D are incorrect because the narrator does not find his living quarters to be treacherous or intolerable. Choice C is incorrect because while the narrator is walking home he speculates about the presence of a fire in his sitting-room's fireplace (lines 69-74), which suggests that he could not predict the state of his living quarters.

QUESTION 10.

Choice D is the best answer. In lines 68-74, the narrator states that he did not see the "cheering" glow of a fire in his sitting-room fireplace. This statement provides evidence that the narrator views his lodgings as dreary or bleak.

Choices A, B, and C do not provide the best evidence that the narrator views his lodgings as dreary. Choices A and C are incorrect because they do not provide the narrator's opinion of his lodgings, and choice B is incorrect because lines 21-23 describe the narrator's lodgings only as "small."

QUESTION 11.

Choice D is the best answer. In lines 11-12, the author introduces the main purpose of the passage, which is to examine the "different views on where ethics should apply when someone makes an economic decision." The passage examines what historical figures Adam Smith, Aristotle, and John Stuart Mill believed about the relationship between ethics and economics.

Choices A, B, and C are incorrect because they identify certain points addressed in the passage (cost-benefit analysis, ethical economic behavior, and the role of the free market), but do not describe the passage's main purpose.

QUESTION 12.

Choice D is the best answer. In lines 4-5, the author suggests that people object to criticizing ethics in free markets because they believe free markets are inherently ethical, and therefore, the role of ethics in free markets is unnecessary to study. In the opinion of the critics, free markets are ethical because they allow individuals to make their own choices about which goods to purchase and which goods to sell.

Choices A and B are incorrect because they are not objections that criticize the ethics of free markets. Choice C is incorrect because the author does not present the opinion that free markets depend on devalued currency.

QUESTION 13.

Choice A is the best answer. In lines 4-5, the author states that some people believe that free markets are "already ethical" because they "allow for personal choice." This statement provides evidence that some people believe criticizing the ethics of free markets is unnecessary because free markets permit individuals to make their own choices.

Choices B, C, and D are incorrect because they do not provide the best evidence of an objection to a critique of the ethics of free markets.

QUESTION 14.

Choice B is the best answer. In lines 6-7, the author states that people "have accepted the ethical critique and embraced corporate social responsibility." In this context, people "embrace," or readily adopt, corporate social responsibility by acting in a certain way.

Choices A, C, and D are incorrect because in this context "embraced" does not mean lovingly held, eagerly hugged, or reluctantly used.

QUESTION 15.

Choice C is the best answer. The third and fourth paragraphs of the passage present Adam Smith's and Aristotle's different approaches to defining ethics in economics. The fifth paragraph offers a third approach to defining ethical economics, how "instead of rooting ethics in character or the consequences of actions, we can focus on our actions themselves. From this perspective some things are right, some wrong" (lines 45-48).

Choice A is incorrect because the fifth paragraph does not develop a counterargument. Choices B and D are incorrect because although "character" is briefly mentioned in the fifth paragraph, its relationship to ethics is examined in the fourth paragraph.

QUESTION 16.

Choice A is the best answer. In lines 57-59, the author states that "Many moral dilemmas arise when these three versions pull in different directions but clashes are not inevitable." In this context, the three different perspectives on ethical economics may "clash," or conflict, with one another.

Choices B, C, and D are incorrect because in this context "clashes" does not mean mismatches, collisions, or brawls.

QUESTION 17.

Choice C is the best answer. In lines 59-64, the author states, "Take fair trade coffee . . . for example: buying it might have good consequences, be virtuous, and also be the right way to act in a flawed market." The author is suggesting that in the example of fair trade coffee, all three perspectives about ethical economics—Adam Smith's belief in consequences dictating action, Aristotle's emphasis on character, and the third approach emphasizing the virtue of good actions—can be applied. These three approaches share "common ground" (line 64), as they all can be applied to the example of fair trade coffee without contradicting one another.

Choices A, B, and D are incorrect because they do not show how the three different approaches to ethical economics share common ground. Choice A simply states that there are "different views on ethics" in economics, choice B explains the third ethical economics approach, and choice D suggests that people "behave like a herd" when considering economics.

QUESTION 18.

Choice C is the best answer. In lines 83-88, the author states that psychology can help "define ethics for us," which can help explain why people "react in disgust at economic injustice, or accept a moral law as universal."

Choices A and B are incorrect because they identify topics discussed in the final paragraph (human quirks and people's reaction to economic injustice) but not its main idea. Choice D is incorrect because the final paragraph does not suggest that economists may be responsible for reforming the free market.

QUESTION 19.

Choice A is the best answer. The data in the graph show that in Tanzania between the years 2000 and 2008, fair trade coffee profits were around $1.30 per pound, while profits of regular coffee were in the approximate range of 20–60 cents per pound.

Choices B, C, and D are incorrect because they are not supported by information in the graph.

QUESTION 20.

Choice B is the best answer. The data in the graph indicate that between 2002 and 2004 the difference in per-pound profits between fair trade and regular coffee was about $1. In this time period, fair trade coffee was valued at around $1.30 per pound and regular coffee was valued at around 20 cents per pound. The graph also shows that regular coffee recorded the lowest profits between the years 2002 and 2004, while fair trade coffee remained relatively stable throughout the entire eight-year span (2000 to 2008).

Choices A, C, and D are incorrect because they do not indicate the greatest difference between per-pound profits for fair trade and regular coffee.

QUESTION 21.

Choice C is the best answer. In lines 59-61, the author defines fair trade coffee as "coffee that is sold with a certification that indicates the farmers and workers who produced it were paid a fair wage." This definition suggests that purchasing fair trade coffee is an ethically responsible choice, and the fact that fair trade coffee is being produced and is profitable suggests that ethical economics is still a consideration. The graph's data support this claim by showing how fair trade coffee was more than twice as profitable as regular coffee.

Choice A is incorrect because the graph suggests that people acting on empathy (by buying fair trade coffee) is productive for fair trade coffee farmers and workers. Choices B and D are incorrect because the graph does not provide support for the idea that character or people's fears factor into economic choices.

QUESTION 22.

Choice C is the best answer. The author of Passage 1 indicates that people can benefit from using screen-based technologies as these technologies strengthen "certain cognitive skills" (line 3) and the "brain functions related to fast-paced problem solving" (lines 14-15).

Choice A is incorrect because the author of Passage 1 cites numerous studies of screen-based technologies. Choice B is incorrect because it is not supported by Passage 1, and choice D is incorrect because while the author mentions some benefits to screen-based technologies, he does not encourage their use.

QUESTION 23.

Choice A is the best answer. In lines 3-4, the author of Passage 1 provides evidence that the use of screen-based technologies has some positive effects: "Certain cognitive skills are strengthened by our use of computers and the Net."

Choices B, C, and D are incorrect because they do not provide the best evidence that the use of screen-based technologies has some positive effects. Choices B, C, and D introduce and describe the author's reservations about screen-based technologies.

QUESTION 24.

Choice B is the best answer. The author of Passage 1 cites Patricia Greenfield's study, which found that people's use of screen-based technologies weakened their ability to acquire knowledge, perform "inductive analysis" and "critical thinking," and be imaginative and reflective (lines 34-38). The author of Passage 1 concludes that the use of screen-based technologies interferes with people's ability to think "deeply" (lines 47-50).

Choices A, C, and D are incorrect because the author of Passage 1 does not address how using the Internet affects people's health, social contacts, or self-confidence.

QUESTION 25.

Choice C is the best answer. In lines 39-41, the author states, "We know that the human brain is highly plastic; neurons and synapses change as circumstances change." In this context, the brain is "plastic" because it is malleable, or able to change.

Choices A, B, and D are incorrect because in this context "plastic" does not mean creative, artificial, or sculptural.

QUESTION 26.

Choice B is the best answer. In lines 60-65, the author of Passage 2 explains how speed-reading does not "revamp," or alter, how the brain processes information. He supports this statement by explaining how Woody Allen's reading of *War and Peace* in one sitting caused him to describe the novel as "about Russia." Woody Allen was not able to comprehend the "famously long" novel by speed-reading it.

Choices A and D are incorrect because Woody Allen's description of *War and Peace* does not suggest he disliked Tolstoy's writing style or that he regretted reading the book. Choice C is incorrect because the anecdote about Woody Allen is unrelated to multitasking.

QUESTION 27.

Choice D is the best answer. The author of Passage 2 states that people like novelists and scientists improve in their profession by "immers[ing] themselves in their fields" (line 79). Both novelists and scientists, in other words, become absorbed in their areas of expertise.

Choices A and C are incorrect because the author of Passage 2 does not suggest that novelists and scientists both take risks when they pursue knowledge or are curious about other subjects. Choice B is incorrect because the author of Passage 2 states that "accomplished people" don't perform "intellectual calisthenics," or exercises that improve their minds (lines 77-78).

QUESTION 28.

Choice D is the best answer. In lines 83-90, the author of Passage 2 criticizes media critics for their alarmist writing: "Media critics write as if the brain takes on the qualities of whatever it consumes, the informational equivalent of 'you are what you eat.'" The author then compares media critics' "you are what you eat" mentality to ancient people's belief that "eating fierce animals made them fierce." The author uses this analogy to discredit media critics' belief that consumption of electronic media alters the brain.

Choices A, B, and C are incorrect because the final sentence of Passage 2 does not use ornate language, employ humor, or evoke nostalgia for the past.

QUESTION 29.

Choice D is the best answer. The author of Passage 1 argues that online and other screen-based technologies affect people's abilities to think deeply (lines 47-50). The author of Passage 2 argues that the effects of consuming electronic media are less drastic than media critics suggest (lines 81-82).

Choices A and B are incorrect because they discuss points made in the passages but not the main purpose of the passages. Choice C is incorrect because neither passage argues in favor of increasing financial support for certain studies.

QUESTION 30.

Choice B is the best answer. The author of Passage 1 cites scientific research that suggests online and screen-based technologies have a negative effect on the brain (lines 25-38). The author of Passage 2 is critical of the research highlighted in Passage 1: "Critics of new media sometimes use science itself to press their case, citing research that shows how 'experience can change the brain.' But cognitive neuroscientists roll their eyes at such talk" (lines 51-54).

Choices A, C, and D are incorrect because they do not accurately describe the relationship between the two passages. Passage 1 does not take a clinical approach to the topic. Passage 2 does not take a high-level view of a finding examined in depth in Passage 1, nor does it predict negative reactions to the findings discussed in paragraph 1.

QUESTION 31.

Choice C is the best answer. In Passage 1, the author cites psychologist Patricia Greenfield's finding that "'every medium develops some cognitive skills at the expense of others'" (lines 29-31). In Passage 2, the author states "If you train people to do one thing (recognize shapes, solve math puzzles, find hidden words), they get better at doing that thing, but almost nothing else" (lines 71-74). Both authors would agree than an improvement in one cognitive area, such as visual-spatial skills, would not result in improved skills in other areas.

Choice A is incorrect because hand-eye coordination is not discussed in Passage 2. Choice B is incorrect because Passage 1 does not suggest that critics of electronic media tend to overreact. Choice D is incorrect because neither passage discusses whether Internet users prefer reading printed texts or digital texts.

QUESTION 32.

Choice B is the best answer. In Passage 1, the author cites Michael Merzenich's claim that when people adapt to a new cultural phenomenon, including the use of a new medium, we end up with a "different brain" (lines 41-43). The author of Passage 2 somewhat agrees with Merzenich's claim by stating, "Yes, every time we learn a fact or skill the wiring of the brain changes" (lines 54-56).

Choices A, C, and D do not provide the best evidence that the author of Passage 2 would agree to some extent with Merzenich's claim. Choices A and D are incorrect because the claims are attributed to critics of new media. Choice C is incorrect because it shows that the author of Passage 2 does not completely agree with Merzenich's claim about brain plasticity.

QUESTION 33.

Choice B is the best answer. In lines 16-31, Stanton argues that men make all the decisions in "the church, the state, and the home." This absolute power has led to a disorganized society, a "fragmentary condition of everything." Stanton confirms this claim when she states that society needs women to "lift man up into the higher realms of thought and action" (lines 60-61).

Choices A and D are incorrect because Stanton does not focus on women's lack of equal educational opportunities or inability to hold political positions. Choice C is incorrect because although Stanton implies women are not allowed to vote, she never mentions that "poor candidates" are winning elections.

QUESTION 34.

Choice A is the best answer. Stanton argues that women are repressed in society because men hold "high carnival," or have all the power, and make the rules in "the church, the state, and the home" (lines 16-31). Stanton claims that men have total control over women, "overpowering the feminine element everywhere" (line 18).

Choices B, C, and D are incorrect because Stanton does not use the term "high carnival" to emphasize that the time period is freewheeling, or unrestricted; that there has been a scandalous decline in moral values; or that the power of women is growing.

QUESTION 35.

Choice D is the best answer. In lines 16-23, Stanton states that men's absolute rule in society is "crushing out all the diviner qualities in human nature," such that society knows very "little of true manhood and womanhood." Stanton argues that society knows less about womanhood than manhood, because womanhood has "scarce been recognized as a power until within the last century." This statement indicates that society's acknowledgement of "womanhood," or women's true character, is a fairly recent historical development.

Choices A, B, and C are incorrect because Stanton describes men's control of society, their domination of the domestic sphere, and the prevalence of war and injustice as long-established realities.

QUESTION 36.

Choice B is the best answer. In lines 16-23, Stanton provides evidence for the claim that society's acknowledgement of "womanhood," or women's true character, is a fairly recent historical development: "[womanhood] has scarce been recognized as a power until within the last century."

Choices A, C, and D are incorrect because they do not provide the best evidence that society's acknowledgement of "womanhood," or women's true character, is a fairly recent historical development. Rather, choices A, C, and D discuss men's character, power, and influence.

QUESTION 37.

Choice B is the best answer. In lines 23-26, Stanton states, "Society is but the reflection of man himself, untempered by woman's thought; the hard iron rule we feel alike in the church, the state, and the home." In this context, man's "rule" in "the church, the state, and the home" means that men have a controlling force in all areas of society.

Choices A, C, and D are incorrect because in this context "rule" does not mean a general guideline, an established habit, or a procedural method.

QUESTION 38.

Choice D is the best answer. In lines 32-35, Stanton argues that people use the term "the strong-minded" to refer to women who advocate for "the right to suffrage," or the right to vote in elections. In this context, people use the term "the strong-minded" to criticize female suffragists, as they believe voting will make women too "masculine."

Choices A and B are incorrect because Stanton does not suggest that people use the term "the strong-minded" as a compliment. Choice C is incorrect because Stanton suggests that "the strong-minded" is a term used to criticize women who want to vote, not those who enter male-dominated professions.

QUESTION 39.

Choice C is the best answer. In lines 36-39, Stanton states that society contains hardly any women in the "best sense," and clarifies that too many women are "reflections, varieties, and dilutions of the masculine gender." Stanton is suggesting that there are few "best," or genuine, women who are not completely influenced or controlled by men.

Choices A, B, and D are incorrect because in this context "best" does not mean superior, excellent, or rarest.

QUESTION 40.

Choice A is the best answer. In lines 54-56, Stanton argues that man "mourns," or regrets, how his power has caused "falsehood, selfishness, and violence" to become the "law" of society. Stanton is arguing that men are lamenting, or expressing regret about, how their governance has created problems.

Choices B, C, and D are incorrect because Stanton does not suggest that men are advocating for women's right to vote or for female equality, nor are they requesting women's opinions about improving civic life.

QUESTION 41.

Choice B is the best answer. In lines 54-56, Stanton provides evidence that men are lamenting the problems they have created, as they recognize that their actions have caused "falsehood, selfishness, and violence [to become] the law of life."

Choices A, C, and D are incorrect because they do not provide the best evidence that men are lamenting the problems they have created. Choice A explains society's current fragmentation. Choices C and D present Stanton's main argument for women's enfranchisement.

QUESTION 42.

Choice D is the best answer. In the sixth paragraph, Stanton differentiates between men and masculine traits. Stanton argues that masculine traits or "characteristics," such as a "love of acquisition and conquest," serve to "subjugate one man to another" (lines 69-80). Stanton is suggesting that some masculine traits position men within certain power structures.

Choices A and B are incorrect because the sixth paragraph does not primarily establish a contrast between men and women or between the spiritual and material worlds. Choice C is incorrect because although Stanton argues that not "all men are hard, selfish, and brutal," she does not discuss what constitutes a "good" man.

QUESTION 43.

Choice C is the best answer. In the first paragraph, the author identifies the natural phenomenon "internal waves" (line 3), and explains why they are important: "internal waves are fundamental parts of ocean water dynamics, transferring heat to the ocean depths and bringing up cold water from below" (lines 7-9).

Choices A, B, and D are incorrect because they do not identify the main purpose of the first paragraph, as that paragraph does not focus on a scientific device, a common misconception, or a recent study.

QUESTION 44.

Choice B is the best answer. In lines 17-19, researcher Tom Peacock argues that in order to create precise global climate models, scientists must be able to "capture processes" such as how internal waves are formed. In this context, to "capture" a process means to record it for scientific study.

Choices A, C, and D are incorrect because in this context "capture" does not mean to control, secure, or absorb.

QUESTION 45.

Choice D is the best answer. In lines 17-19, researcher Tom Peacock argues that scientists need to "capture processes" of internal waves to develop "more and more accurate climate models." Peacock is suggesting that studying internal waves will inform the development of scientific models.

Choices A, B, and C are incorrect because Peacock does not state that monitoring internal waves will allow people to verify wave heights, improve satellite image quality, or prevent coastal damage.

QUESTION 46.

Choice C is the best answer. In lines 17-19, researcher Tom Peacock provides evidence that studying internal waves will inform the development of key scientific models, such as "more accurate climate models."

Choices A, B, and D are incorrect because they do not provide the best evidence that studying internal waves will inform the development of key scientific models; rather, they provide general information about internal waves.

QUESTION 47.

Choice A is the best answer. In lines 65-67, the author notes that Tom Peacock and his team "were able to devise a mathematical model that describes the movement and formation of these waves." In this context, the researchers devised, or created, a mathematical model.

Choices B, C, and D are incorrect because in this context "devise" does not mean to solve, imagine, or begin.

QUESTION 48.

Choice B is the best answer. Tom Peacock and his team created a model of the "Luzon's Strait's underwater topography" and determined that its "distinct double-ridge shape . . . [is] responsible for generating the underwater [internal] waves" (lines 53-55). The author notes that this model describes only internal waves in the Luzon Strait but that the team's findings may "help researchers understand how internal waves are generated in other places around the world" (lines 67-70). The author's claim suggests that while internal waves in the Luzon Strait are "some of the largest in the world" (line 25) due to the region's topography, internal waves occurring in other regions may be caused by some similar factors.

Choice A is incorrect because the author notes that the internal waves in the Luzon Strait are "some of the largest in the world" (line 25), which suggests that internal waves reach varying heights. Choices C and D are incorrect because they are not supported by the researchers' findings.

QUESTION 49.

Choice D is the best answer. In lines 67-70, the author provides evidence that, while the researchers' findings suggest the internal waves in the Luzon Strait are influenced by the region's topography, the findings may "help researchers understand how internal waves are generated in other places around the world." This statement suggests that all internal waves may be caused by some similar factors.

Choices A, B, and C are incorrect because they do not provide the best evidence that internal waves are caused by similar factors but influenced by the distinct topographies of different regions. Rather, choices A, B, and C reference general information about internal waves or focus solely on those that occur in the Luzon Strait.

QUESTION 50.

Choice D is the best answer. During the period 19:12 to 20:24, the graph shows the 13°C isotherm increasing in depth from about 20 to 40 meters.

Choices A, B, and C are incorrect because during the time period 19:12 to 20:24 the 9°C, 10°C, and 11°C isotherms all decreased in depth.

QUESTION 51.

Choice D is the best answer. In lines 3-6, the author notes that internal waves "do not ride the ocean surface" but "move underwater, undetectable without the use of satellite imagery or sophisticated monitoring equipment." The graph shows that the isotherms in an internal wave never reach the ocean's surface, as the isotherms do not record a depth of 0.

Choice A is incorrect because the graph provides no information about salinity. Choice B is incorrect because the graph shows layers of less dense water (which, based on the passage, are warmer) riding above layers of denser water (which, based on the passage, are cooler). Choice C is incorrect because the graph shows that internal waves push isotherms of warmer water above bands of colder water.

QUESTION 52.

Choice A is the best answer. In lines 7-9, the author notes that internal waves are "fundamental parts of ocean water dynamics" because they transfer "heat to the ocean depths and brin[g] up cold water from below." The graph shows an internal wave forcing the warm isotherms to depths that typically are colder. For example, at 13:12, the internal wave transfers "heat to the ocean depths" by forcing the 10°C, 11°C, and 13°C isotherms to depths that typically are colder.

Choices B, C, and D are incorrect because the graph does not show how internal waves affect the ocean's density, surface temperature, or tide flow.

Section 2: Writing and Language Test

QUESTION 1.

Choice B is the best answer because it provides a noun, "reductions," yielding a grammatically complete and coherent sentence.

Choices A, C, and D are incorrect because each provides a verb or gerund, while the underlined portion calls for a noun.

QUESTION 2.

Choice B is the best answer because it offers a transitional adverb, "Consequently," that communicates a cause-effect relationship between the funding reduction identified in the previous sentence and the staffing decrease described in this sentence.

Choices A, C, and D are incorrect because each misidentifies the relationship between the preceding sentence and the sentence of which it is a part.

QUESTION 3.

Choice A is the best answer because the singular verb "has" agrees with the singular noun "trend" that appears earlier in the sentence.

Choices B, C, and D are incorrect because the plural verb "have" does not agree with the singular subject "trend," and the relative pronoun "which" unnecessarily interrupts the direct relationship between "trend" and the verb.

QUESTION 4.

Choice A is the best answer because it states accurately why the proposed clause should be added to the sentence. Without these specific examples, readers have only a vague sense of what "nonprint" formats might be.

Choices B, C, and D are incorrect because each represents a misinterpretation of the relationship between the proposed clause to be added and the surrounding text in the passage.

QUESTION 5.

Choice D is the best answer because it includes only the preposition and noun that the sentence requires.

Choices A, B, and C are incorrect because each includes an unnecessary pronoun, either "them" or "their." The sentence contains no referents that would circulate e-books.

QUESTION 6.

Choice D is the best answer because the verb form "cataloging" parallels the other verbs in the series.

Choices A, B, and C are incorrect because each interrupts the parallel structure in the verb series, either through an incorrect verb form or with an unnecessary subject.

QUESTION 7.

Choice B is the best answer because it consolidates references to the subject, "librarians," by placing the relative pronoun "whose" immediately following "librarians." This results in a logical flow of information within the sentence.

Choices A, C, and D are incorrect because each fails to place "librarians" as the main subject of the sentence without redundancy, resulting in a convoluted sentence whose relevance to the preceding and subsequent sentences is unclear.

QUESTION 8.

Choice D is the best answer because no conjunction is necessary to communicate the relationship between the clauses in the sentence. The conjunction "While" at the beginning of the sentence already creates a comparison.

Choices A, B, and C are incorrect because each provides an unnecessary coordinating conjunction.

QUESTION 9.

Choice B is the best answer because it mentions time periods when the free services described later in the sentence are particularly useful to library patrons.

Choices A, C, and D are incorrect because each creates redundancy or awkwardness in the remainder of the sentence.

QUESTION 10.

Choice B is the best answer because it is concise; it is also consistent with the formal language in the rest of the sentence and the passage overall.

Choices A, C, and D are incorrect because each is either unnecessarily wordy or uses colloquial language that does not correspond with the tone of the passage.

QUESTION 11.

Choice C is the best answer because it restates the writer's primary argument, which may be found at the end of the first paragraph: "As public libraries adapt to rapid technological advances in information distribution, librarians' roles are actually expanding."

Choices A, B, and D are incorrect because they do not paraphrase the writer's primary claim.

QUESTION 12.

Choice B is the best answer because it clarifies that the sentence, which mentions a specific large-scale painting at the Art Institute of Chicago, is an example supporting the preceding claim about large-scale paintings.

Choices A, C, and D are incorrect because they propose transitional words or phrases that do not accurately represent the relationship between the preceding sentence and the sentence containing the underlined portion.

QUESTION 13.

Choice D is the best answer because no punctuation is necessary in the underlined phrase.

Choices A, B, and C are incorrect because each separates parts of the noun phrase "painter Georges Seurat's 10-foot-wide *A Sunday Afternoon on the Island of La Grande Jatte*" from one another with one or more unnecessary commas.

QUESTION 14.

Choice C is the best answer because it provides the appropriate possessive form, "its," and a colon to introduce the identifying phrase that follows.

Choices A, B, and D are incorrect because none contains both the appropriate possessive form of "it" and the punctuation that creates a grammatically standard sentence.

QUESTION 15.

Choice C is the best answer because an analysis of the consequences of King Louis XV's reign is irrelevant to the paragraph.

Choices A, B, and D are incorrect because each represents a misinterpretation of the relationship between the proposed sentence to be added and the main point of the paragraph.

QUESTION 16.

Choice C is the best answer because it provides a coordinating conjunction, "and," to connect the two verb phrases "are characterized" and "are covered."

Choices A, B, and D are incorrect because each lacks the conjunction needed to connect the two verb phrases "are characterized" and "are covered."

QUESTION 17.

Choice B is the best answer because it offers an example of an additional household item, a "tea cup," with a specific measurement that is one-twelfth of its actual size.

Choices A, C, D are incorrect because, compared to the example preceding the underlined portion, each is vague and fails to offer a specific measurement of an additional household item.

QUESTION 18.

Choice B is the best answer because it provides correct punctuation and the coordinating conjunction "but," which acknowledges the possible contrast between being "sparsely furnished" and displaying "just as true" period details.

Choices A, C, and D are incorrect because each communicates an illogical relationship between the phrases that precede and follow the underlined portion.

QUESTION 19.

Choice A is the best answer because it provides a clause that is the most similar to the two preceding clauses, which both end with a reference to a specific wall.

Choices B, C, and D are incorrect because each deviates from the stylistic pattern of the preceding two clauses.

QUESTION 20.

Choice D is the best answer because the article "a" requires the singular noun "visitor," and the simple present verb "remark" is the appropriate verb tense in this context.

Choices A, B, and C are incorrect because each contains either a noun or verb that does not fit the context.

QUESTION 21.

Choice D is the best answer because it identifies the drawers, rather than the visitor, as being "dotted with pin-sized knobs."

Choices A, B, and C are incorrect because all three contain dangling modifiers that obscure the relationship between the visitor, the drawers, and the pin-sized knobs.

QUESTION 22.

Choice B is the best answer because paragraph 3 offers an overview of the exhibit and so serves to introduce the specific aspects of particular miniature rooms described in paragraphs 2 and 4.

Choices A, C, and D are incorrect because each proposes a placement of paragraph 2 that prevents the passage from developing in a logical sequence.

QUESTION 23.

Choice A is the best answer because it correctly completes the noun phrase that begins with "sea otters," and directly follows the noun phrase with the verb "help."

Choices B, C, and D are incorrect because each separates the noun "otters" from the verb "help" in a way that results in a grammatically incomplete sentence.

QUESTION 24.

Choice B is the best answer because the data in the chart show lower sea urchin density in areas where sea otters have lived for two years or less than in areas where no otters are present.

Choices A, C, and D are incorrect because none accurately describes the data in the chart.

QUESTION 25.

Choice B is the best answer because the conjunctive adverb "however" accurately communicates the contrast between an environment shaped by the presence of sea otters, described in the preceding sentence, and an environment shaped by the absence of sea otters, described in this sentence.

Choices A, C, and D are incorrect because each presents a conjunctive adverb that does not accurately depict the relationship between the preceding sentence and the sentence with the underlined word.

QUESTION 26.

Choice A is the best answer because the additional information usefully connects the carbon dioxide levels mentioned in this sentence with the global warming mentioned in the previous sentence.

Choices B, C, and D are incorrect because each misinterprets the relationship between the proposed information and the main points of the paragraph and the passage.

QUESTION 27.

Choice D is the best answer because it offers the verb "suggests" followed directly by its object, a that-clause, without interruption.

Choices A, B, and C are incorrect because each contains punctuation that unnecessarily separates the study from its findings—that is, separates the verb from its object.

QUESTION 28.

Choice A is the best answer because it accurately reflects the fact that sea urchins "graze voraciously on kelp," as stated in the first paragraph, and it also maintains the tone of the passage.

Choices B, C, and D are incorrect because each offers a term that does not accurately describe the behavior of sea otters.

QUESTION 29.

Choice C is the best answer because the possessive singular pronoun "its" corresponds with the referent "kelp," which appears later in the sentence, and with the possessive relationship between the pronoun and the "terrestrial plant cousins."

Choices A, B, and D are incorrect because none provides a pronoun that is both singular and possessive.

QUESTION 30.

Choice C is the best answer because it provides the noun "sea otters" to identify who or what "played a role."

Choices A, B, and D are incorrect because each provides a pronoun that makes no sense in the context of the paragraph and the passage, which is about the role sea otters play—not the role scientists play or the role kelp plays.

QUESTION 31.

Choice D is the best answer because sentence 5 indicates that sea otters' importance in decreasing atmospheric carbon dioxide was not known, and the sentence to be added indicates that a surprise will follow. Sentence 6 provides that surprise: sea otters have a large impact on the amount of carbon dioxide kelp can remove from the atmosphere.

Choices A, B, and C are incorrect because each interrupts the logical flow of ideas in the paragraph.

QUESTION 32.

Choice B is the best answer because its clear wording and formal tone correspond with the passage's established style.

Choices A, C, and D are incorrect because each contains vague language that is inconsistent with the passage's clear wording and formal tone.

QUESTION 33.

Choice D is the best answer because it provides punctuation that appropriately identifies "removed" as the definition of "sequestered."

Choices A, B, and C are incorrect because each contains punctuation that obscures the relationship between "sequestered," "removed," and the text that follows.

QUESTION 34.

Choice D is the best answer because it provides a conjunction that correctly identifies the relationship between "a practice" and the actions involved in the practice.

Choices A, B, and C are incorrect because each contains a conjunction that miscommunicates the relationship between the text that precedes and follows the underlined portion.

QUESTION 35.

Choice A is the best answer because it provides a comma to close the appositive clause "a practice whereby products are designed to have a limited period of usefulness," which also begins with a comma.

Choices B, C, and D are incorrect because each provides closing punctuation inconsistent with the punctuation at the beginning of the clause.

QUESTION 36.

Choice D is the best answer because it provides an adjective that accurately describes the clear "contrast" between products "designed to have a limited period of usefulness" and those "produced to be durable."

Choices A, B, and C are incorrect because none provides an adjective that appropriately modifies "contrast" in the context of the paragraph.

QUESTION 37.

Choice A is the best answer because by mentioning the "specialized" methods used in repair shops, it suggests that repairing goods is seen as a specialty rather than as a common activity. This connects logically with the "rare" repair shops introduced just before the underlined portion.

Choices B, C, and D are incorrect because none provides information that supports the claim made in the sentence.

QUESTION 38.

Choice B is the best answer because it provides the correct spelling of the noun "fair," meaning exhibition, and uses the correct word "than" to create the comparison between a "fair" and a "café."

Choices A, C, and D are incorrect because each contains a misspelling of either "fair" or "than."

QUESTION 39.

Choice C is the best answer because it offers a relative pronoun that properly links the noun "Martine Postma" with the appropriate verb "wanted."

Choices A, B, and D are incorrect because none contains a pronoun that is appropriate for the referent and placement of the clause.

QUESTION 40.

Choice D is the best answer because it provides the most concise phrasing and links the sentence appropriately to the previous sentence.

Choices A, B, and C are incorrect because each provides an unnecessary adverb that obscures the relationship between this sentence and the previous one.

QUESTION 41.

Choice D is the best answer because the gerund "waiting" corresponds with the preposition "for" and the present tense used in the rest of the sentence.

Choices A, B, and C are incorrect because each contains a verb form not used with the preposition "for."

QUESTION 42.

Choice C is the best answer because it appropriately places sentence 5, which describes the places Repair Cafés can be found today, between a sentence that gives the first Repair Café's location and purpose and a statement about current customers and how they use Repair Cafés.

Choices A, B, and D are incorrect because each creates a paragraph with an inappropriate shift in verb tense and, therefore, an illogical sequence of information.

QUESTION 43.

Choice C is the best answer because it accurately states that the issue of "corporate and service-based jobs" is not particularly relevant at this point in the paragraph. The focus here is on repairing objects in a "throwaway culture," not jobs.

Choices A, B, and D are incorrect because each misinterprets the relationship between the proposed text and the information in the paragraph.

QUESTION 44.

Choice D is the best answer because the phrase "and other countries" communicates the fact that there are additional items not being named that could be added to the list; no other wording is required to clarify that point.

Choices A, B, and C are incorrect because each presents a word or phrase that results in a redundancy with "and other countries."

Section 3: Math Test — No Calculator

QUESTION 1.

Choice C is correct. Subtracting 6 from each side of $5x + 6 = 10$ yields $5x = 4$. Dividing both sides of $5x = 4$ by 5 yields $x = \frac{4}{5}$. The value of x can now be substituted into the expression $10x + 3$, giving $10\left(\frac{4}{5}\right) + 3 = 11$.

Alternatively, the expression $10x + 3$ can be rewritten as $2(5x + 6) - 9$, and 10 can be substituted for $5x + 6$, giving $2(10) - 9 = 11$.

Choices A, B, and D are incorrect. Each of these choices leads to $5x + 6 \neq 10$, contradicting the given equation, $5x + 6 = 10$. For example, choice A is incorrect because if the value of $10x + 3$ were 4, then it would follow that $x = 0.1$, and the value of $5x + 6$ would be 6.5, not 10.

QUESTION 2.

Choice B is correct. Multiplying each side of $x + y = 0$ by 2 gives $2x + 2y = 0$. Then, adding the corresponding sides of $2x + 2y = 0$ and $3x - 2y = 10$ gives $5x = 10$. Dividing each side of $5x = 10$ by 5 gives $x = 2$. Finally, substituting 2 for x in $x + y = 0$ gives $2 + y = 0$, or $y = -2$. Therefore, the solution to the given system of equations is $(2, -2)$.

Alternatively, the equation $x + y = 0$ can be rewritten as $x = -y$, and substituting x for $-y$ in $3x - 2y = 10$ gives $5x = 10$, or $x = 2$. The value of y can then be found in the same way as before.

Choices A, C, and D are incorrect because when the given values of x and y are substituted into $x + y = 0$ and $3x - 2y = 10$, either one or both of the equations are not true. These answers may result from sign errors or other computational errors.

QUESTION 3.

Choice A is correct. The price of the job, in dollars, is calculated using the expression $60 + 12nh$, where 60 is a fixed price and $12nh$ depends on the number of landscapers, n, working the job and the number of hours, h, the job takes those n landscapers. Since nh is the total number of hours of work done when n landscapers work h hours, the cost of the job increases by \$12 for each hour a landscaper works. Therefore, of the choices given, the best interpretation of the number 12 is that the company charges \$12 per hour for each landscaper.

Choice B is incorrect because the number of landscapers that will work each job is represented by n in the equation, not by the number 12. Choice C is incorrect because the price of the job increases by $12n$ dollars each hour, which will not be equal to 12 dollars unless $n = 1$. Choice D is incorrect because the total number of hours each landscaper works is equal to h. The number of hours each landscaper works in a day is not provided.

QUESTION 4.

Choice A is correct. If a polynomial expression is in the form $(x)^2 + 2(x)(y) + (y)^2$, then it is equivalent to $(x + y)^2$. Because $9a^4 + 12a^2b^2 + 4b^4 = (3a^2)^2 + 2(3a^2)(2b^2) + (2b^2)^2$, it can be rewritten as $(3a^2 + 2b^2)^2$.

Choice B is incorrect. The expression $(3a + 2b)^4$ is equivalent to the product $(3a + 2b)(3a + 2b)(3a + 2b)(3a + 2b)$. This product will contain the term $4(3a)^3 (2b) = 216a^3b$. However, the given polynomial, $9a^4 + 12a^2b^2 + 4b^4$, does not contain the term $216a^3b$. Therefore, $9a^4 + 12a^2b^2 + 4b^4 \neq (3a + 2b)^4$. Choice C is incorrect. The expression $(9a^2 + 4b^2)^2$ is equivalent to the product $(9a^2 + 4b^2)(9a^2 + 4b^2)$. This product will contain the term $(9a^2)(9a^2) = 81a^4$. However, the given polynomial, $9a^4 + 12a^2b^2 + 4b^4$, does not contain the term $81a^4$. Therefore, $9a^4 + 12a^2b^2 + 4b^4 \neq (9a^2 + 4b^2)^2$. Choice D is incorrect. The expression $(9a + 4b)^4$ is equivalent to the product $(9a + 4b)(9a + 4b)(9a + 4b)(9a + 4b)$. This product will contain the term $(9a)(9a)(9a)(9a) = 6{,}561a^4$. However, the given polynomial, $9a^4 + 12a^2b^2 + 4b^4$, does not contain the term $6{,}561a^4$. Therefore, $9a^4 + 12a^2b^2 + 4b^4 \neq (9a + 4b)^4$.

QUESTION 5.

Choice C is correct. Since $\sqrt{2k^2 + 17} - x = 0$, and $x = 7$, one can substitute 7 for x, which gives $\sqrt{2k^2 + 17} - 7 = 0$. Adding 7 to each side of $\sqrt{2k^2 + 17} - 7 = 0$ gives $\sqrt{2k^2 + 17} = 7$. Squaring each side of $\sqrt{2k^2 + 17} = 7$ will remove the square root symbol: $\left(\sqrt{2k^2 + 17}\right)^2 = (7)^2$, or $2k^2 + 17 = 49$. Then subtracting 17 from each side of $2k^2 + 17 = 49$ gives $2k^2 = 49 - 17 = 32$, and dividing each side of $2k^2 = 32$ by 2 gives $k^2 = 16$. Finally, taking the square root of each side of $k^2 = 16$ gives $k = \pm 4$, and since the problem states that $k > 0$, it follows that $k = 4$.

Since the sides of an equation were squared while solving $\sqrt{2k^2 + 17} - 7 = 0$, it is possible that an extraneous root was produced. However, substituting 4 for k in $\sqrt{2k^2 + 17} - 7 = 0$ confirms that 4 is a solution for k: $\sqrt{2(4)^2 + 17} - 7 = \sqrt{32 + 17} - 7 = \sqrt{49} - 7 = 7 - 7 = 0$.

Choices A, B, and D are incorrect because substituting any of these values for k in $\sqrt{2k^2 + 17} - 7 = 0$ does not yield a true statement.

QUESTION 6.

Choice D is correct. Since lines ℓ and k are parallel, the lines have the same slope. Line ℓ passes through the points $(-5, 0)$ and $(0, 2)$, so its slope is $\frac{0 - 2}{-5 - 0}$, which is $\frac{2}{5}$. The slope of line k must also be $\frac{2}{5}$. Since line k has slope $\frac{2}{5}$ and passes through the points $(0, -4)$ and $(p, 0)$, it follows that $\frac{-4 - 0}{0 - p} = \frac{2}{5}$, or $\frac{4}{p} = \frac{2}{5}$. Multiplying each side of $\frac{4}{p} = \frac{2}{5}$ by $5p$ gives $20 = 2p$, and therefore, $p = 10$.

Choices A, B, and C are incorrect and may result from conceptual or calculation errors.

QUESTION 7.

Choice A is correct. Since the numerator and denominator of $\frac{x^{a^2}}{x^{b^2}}$ have a common base, it follows by the laws of exponents that this expression can be rewritten as $x^{a^2-b^2}$. Thus, the equation $\frac{x^{a^2}}{x^{b^2}} = 16$ can be rewritten as $x^{a^2-b^2} = x^{16}$. Because the equivalent expressions have the common base x, and $x > 1$, it follows that the exponents of the two expressions must also be equivalent. Hence, the equation $a^2 - b^2 = 16$ must be true. The left-hand side of this new equation is a difference of squares, and so it can be factored: $(a + b)(a - b) = 16$. It is given that $(a + b) = 2$; substituting 2 for the factor $(a + b)$ gives $2(a - b) = 16$. Finally, dividing both sides of $2(a - b) = 16$ by 2 gives $a - b = 8$.

Choices B, C, and D are incorrect and may result from errors in applying the laws of exponents or errors in solving the equation $a^2 - b^2 = 16$.

QUESTION 8.

Choice C is correct. The relationship between n and A is given by the equation $nA = 360$. Since n is the number of sides of a polygon, n must be a positive integer, and so $nA = 360$ can be rewritten as $A = \frac{360}{n}$. If the value of A is greater than 50, it follows that $\frac{360}{n} > 50$ is a true statement. Thus, $50n < 360$, or $n < \frac{360}{50} = 7.2$. Since n must be an integer, the greatest possible value of n is 7.

Choices A and B are incorrect. These are possible values for n, the number of sides of a regular polygon, if $A > 50$, but neither is the greatest possible value of n. Choice D is incorrect. If $A < 50$, then $n = 8$ is the least possible value of n, the number of sides of a regular polygon. However, the question asks for the greatest possible value of n if $A > 50$, which is $n = 7$.

QUESTION 9.

Choice B is correct. Since the slope of the first line is 2, an equation of this line can be written in the form $y = 2x + c$, where c is the y-intercept of the line. Since the line contains the point (1, 8), one can substitute 1 for x and 8 for y in $y = 2x + c$, which gives $8 = 2(1) + c$, or $c = 6$. Thus, an equation of the first line is $y = 2x + 6$. The slope of the second line is equal to $\frac{1-2}{2-1}$ or -1. Thus, an equation of the second line can be written in the form $y = -x + d$, where d is the y-intercept of the line. Substituting 2 for x and 1 for y gives $1 = -2 + d$, or $d = 3$. Thus, an equation of the second line is $y = -x + 3$.

Since a is the x-coordinate and b is the y-coordinate of the intersection point of the two lines, one can substitute a for x and b for y in the two equations, giving the system $b = 2a + 6$ and $b = -a + 3$. Thus, a can be found by solving the equation $2a + 6 = -a + 3$, which gives $a = -1$. Finally, substituting -1 for a into the equation $b = -a + 3$ gives $b = -(-1) + 3$, or $b = 4$. Therefore, the value of $a + b$ is 3.

Alternatively, since the second line passes through the points (1, 2) and (2, 1), an equation for the second line is $x + y = 3$. Thus, the intersection point of the first line and the second line, (a, b) lies on the line with equation $x + y = 3$. It follows that $a + b = 3$.

Choices A and C are incorrect and may result from finding the value of only a or b, but not calculating the value of $a + b$. Choice D is incorrect and may result from a computation error in finding equations of the two lines or in solving the resulting system of equations.

QUESTION 10.

Choice C is correct. Since the square of any real number is nonnegative, every point on the graph of the quadratic equation $y = (x - 2)^2$ in the xy-plane has a nonnegative y-coordinate. Thus, $y \geq 0$ for every point on the graph. Therefore, the equation $y = (x - 2)^2$ has a graph for which y is always greater than or equal to -1.

Choices A, B, and D are incorrect because the graph of each of these equations in the xy-plane has a y-intercept at $(0, -2)$. Therefore, each of these equations contains at least one point where y is less than -1.

QUESTION 11.

Choice C is correct. To perform the division $\frac{3 - 5i}{8 + 2i}$, multiply the numerator and denominator of $\frac{3 - 5i}{8 + 2i}$ by the conjugate of the denominator, $8 - 2i$. This gives $\frac{(3 - 5i)(8 - 2i)}{(8 + 2i)(8 - 2i)} = \frac{24 - 6i - 40i + (-5i)(-2i)}{8^2 - (2i)^2}$. Since $i^2 = -1$, this can be simplified to $\frac{24 - 6i - 40i - 10}{64 + 4} = \frac{14 - 46i}{68}$, which then simplifies to $\frac{7}{34} - \frac{23i}{34}$.

Choices A and B are incorrect and may result from misconceptions about fractions. For example, $\frac{a + b}{c + d}$ is equal to $\frac{a}{c + d} + \frac{b}{c + d}$, not $\frac{a}{c} + \frac{b}{d}$. Choice D is incorrect and may result from a calculation error.

QUESTION 12.

Choice B is correct. Multiplying each side of $R = \frac{F}{N + F}$ by $N + F$ gives $R(N + F) = F$, which can be rewritten as $RN + RF = F$. Subtracting RF from each side of $RN + RF = F$ gives $RN = F - RF$, which can be factored

as $RN = F(1 - R)$. Finally, dividing each side of $RN = F(1 - R)$ by $1 - R$, expresses F in terms of the other variables: $F = \frac{RN}{1 - R}$.

Choices A, C, and D are incorrect and may result from calculation errors when rewriting the given equation.

QUESTION 13.

Choice D is correct. The problem asks for the sum of the roots of the quadratic equation $2m^2 - 16m + 8 = 0$. Dividing each side of the equation by 2 gives $m^2 - 8m + 4 = 0$. If the roots of $m^2 - 8m + 4 = 0$ are s_1 and s_2, then the equation can be factored as $m^2 - 8m + 4 = (m - s_1)(m - s_2) = 0$. Looking at the coefficient of x on each side of $m^2 - 8m + 4 = (m - s_1)(m - s_2)$ gives $-8 = -s_1 - s_2$, or $s_1 + s_2 = 8$.

Alternatively, one can apply the quadratic formula to either $2m^2 - 16m + 8 = 0$ or $m^2 - 8m + 4 = 0$. The quadratic formula gives two solutions, $4 - 2\sqrt{3}$ and $4 + 2\sqrt{3}$ whose sum is 8.

Choices A, B, and C are incorrect and may result from calculation errors when applying the quadratic formula or a sign error when determining the sum of the roots of a quadratic equation from its coefficients.

QUESTION 14.

Choice A is correct. Each year, the amount of the radioactive substance is reduced by 13 percent from the prior year's amount; that is, each year, 87 percent of the previous year's amount remains. Since the initial amount of the radioactive substance was 325 grams, after 1 year, $325(0.87)$ grams remains; after 2 years $325(0.87)(0.87) = 325(0.87)^2$ grams remains; and after t years, $325(0.87)^t$ grams remains. Therefore, the function $f(t) = 325(0.87)^t$ models the remaining amount of the substance, in grams, after t years.

Choice B is incorrect and may result from confusing the amount of the substance remaining with the decay rate. Choices C and D are incorrect and may result from confusing the original amount of the substance and the decay rate.

QUESTION 15.

Choice D is correct. Dividing $5x - 2$ by $x + 3$ gives:

$$
\begin{array}{r}
5 \\
x + 3 \overline{)\,5x - 2} \\
5x + 15 \\
\hline
-17
\end{array}
$$

Therefore, the expression $\frac{5x - 2}{x + 3}$ can be rewritten as $5 - \frac{17}{x + 3}$.

Alternatively, $\frac{5x - 2}{x + 3}$ can be rewritten as

$$\frac{5x - 2}{x + 3} = \frac{(5x + 15) - 15 - 2}{x + 3} = \frac{5(x + 3) - 17}{x + 3} = 5 - \frac{17}{x + 3}.$$

Choices A and B are incorrect and may result from incorrectly canceling out the x in the expression $\frac{5x-2}{x+3}$. Choice C is incorrect and may result from finding an incorrect remainder when performing long division.

QUESTION 16.

The correct answer is 3, 6, or 9. Let x be the number of \$250 bonuses awarded, and let y be the number of \$750 bonuses awarded. Since \$3000 in bonuses were awarded, and this included at least one \$250 bonus and one \$750 bonus, it follows that $250x + 750y = 3000$, where x and y are positive integers. Dividing each side of $250x + 750y = 3000$ by 250 gives $x + 3y = 12$, where x and y are positive integers. Since $3y$ and 12 are each divisible by 3, it follows that $x = 12 - 3y$ must also be divisible by 3. If $x = 3$, then $y = 3$; if $x = 6$, then $y = 2$; and if $x = 9$, then $y = 1$. If $x = 12$, then $y = 0$, but this is not possible since there was at least one \$750 bonus awarded. Therefore, the possible numbers of \$250 bonuses awarded are 3, 6, and 9. Any of the numbers 3, 6, or 9 may be gridded as the correct answer.

QUESTION 17.

The correct answer is 19. Since $2x(3x + 5) + 3(3x + 5) = ax^2 + bx + c$ for all values of x, the two sides of the equation are equal, and the value of b can be determined by simplifying the left-hand side of the equation and writing it in the same form as the right-hand side. Using the distributive property, the equation becomes $(6x^2 + 10x) + (9x + 15) = ax^2 + bx + c$. Combining like terms gives $6x^2 + 19x + 15 = ax^2 + bx + c$. The value of b is the coefficient of x, which is 19.

QUESTION 18.

The correct answer is 12. Angles ABE and DBC are vertical angles and thus have the same measure. Since segment AE is parallel to segment CD, angles A and D are of the same measure by the alternate interior angle theorem. Thus, by the angle-angle theorem, triangle ABE is similar to triangle DBC, with vertices A, B, and E corresponding to vertices D, B, and C, respectively. Thus, $\frac{AB}{DB} = \frac{EB}{CB}$ or $\frac{10}{5} = \frac{8}{CB}$. It follows that $CB = 4$, and so $CE = CB + BE = 4 + 8 = 12$.

QUESTION 19.

The correct answer is 6. By the distance formula, the length of radius OA is $\sqrt{(\sqrt{3})^2 + 1^2} = \sqrt{3 + 1} = 2$. Thus, $\sin(\angle AOB) = \frac{1}{2}$. Therefore, the measure of $\angle AOB$ is 30°, which is equal to $30\left(\frac{\pi}{180}\right) = \frac{\pi}{6}$ radians. Hence, the value of a is 6.

QUESTION 20.

The correct answer is $\frac{1}{4}$ or .25. In order for a system of two linear equations to have infinitely many solutions, the two equations must be equivalent.

Thus, the equation $ax + by = 12$ must be equivalent to the equation $2x + 8y = 60$. Multiplying each side of $ax + by = 12$ by 5 gives $5ax + 5by = 60$, which must be equivalent to $2x + 8y = 60$. Since the right-hand sides of $5ax + 5by = 60$ and $2x + 8y = 60$ are the same, equating coefficients gives $5a = 2$, or a = $\frac{2}{5}$, and $5b = 8$, or $b = \frac{8}{5}$. Therefore, the value of $\frac{a}{b} = \left(\frac{2}{5}\right) \div \left(\frac{8}{5}\right)$, which is equal to $\frac{1}{4}$. Either the fraction $\frac{1}{4}$ or its equivalent decimal, .25, may be gridded asthe correct answer.

Alternatively, since $ax + by = 12$ is equivalent to $2x + 8y = 60$, the equation $ax + by = 12$ is equal to $2x + 8y = 60$ multiplied on each side by the same constant. Since multiplying $2x + 8y = 60$ by a constant does not change the ratio of the coefficient of x to the coefficient of y, it follows that $\frac{a}{b} = \frac{2}{8} = \frac{1}{4}$.

Section 4: Math Test — Calculator

QUESTION 1.

Choice C is correct. Since the musician earns \$0.09 for each download, the musician earns $0.09d$ dollars when the song is downloaded d times. Similarly, since the musician earns \$0.002 each time the song is streamed, the musician earns $0.002s$ dollars when the song is streamed s times. Therefore, the musician earns a total of $0.09d + 0.002s$ dollars when the song is downloaded d times and streamed s times.

Choice A is incorrect because the earnings for each download and the earnings for time streamed are interchanged in the expression. Choices B and D are incorrect because in both answer choices, the musician will lose money when a song is either downloaded or streamed. However, the musician only earns money, not loses money, when the song is downloaded or streamed.

QUESTION 2.

Choice B is correct. The quality control manager selects 7 lightbulbs at random for inspection out of every 400 lightbulbs produced. A quantity of 20,000 lightbulbs is equal to $\frac{20{,}000}{400} = 50$ batches of 400 lightbulbs. Therefore, at the rate of 7 lightbulbs per 400 lightbulbs produced, the quality control manager will inspect a total of $50 \times 7 = 350$ lightbulbs.

Choices A, C, and D are incorrect and may result from calculation errors or misunderstanding of the proportional relationship.

QUESTION 3.

Choice A is correct. The value of m when ℓ is 73 can be found by substituting the 73 for ℓ in $\ell = 24 + 3.5m$ and then solving for m. The resulting equation is $73 = 24 + 3.5m$; subtracting 24 from each side gives $49 = 3.5m$. Then, dividing each side of $49 = 3.5m$ by 3.5 gives $14 = m$. Therefore, when ℓ is 73, m is 14.

Choice B is incorrect and may result from adding 24 to 73, instead of subtracting 24 from 73, when solving $73 = 24 + 3.5m$. Choice C is incorrect because 73 is the given value for ℓ, not for m. Choice D is incorrect and may result from substituting 73 for m, instead of for ℓ, in the equation $\ell = 24 + 3.5m$.

QUESTION 4.

Choice C is correct. The amount of money the performer earns is directly proportional to the number of people who attend the performance. Thus, by the definition of direct proportionality, $M = kP$, where M is the amount of money the performer earns, in dollars, P is the number of people who attend the performance, and k is a constant. Since the performer earns \$120 when 8 people attend the performance, one can substitute 120 for M and 8 for P, giving $120 = 8k$. Hence, $k = 15$, and the relationship between the number of people who attend the performance and the amount of money, in dollars, the performer earns is $M = 15P$. Therefore, when 20 people attend the performance, the performer earns $15(20) = 300$ dollars.

Choices A, B, and D are incorrect and may result from either misconceptions about proportional relationships or computational errors.

QUESTION 5.

Choice C is correct. If 43% of the money earned is used to pay for costs, then the rest, 57%, is profit. A performance where 8 people attend earns the performer \$120, and 57% of \$120 is $\$120 \times 0.57 = \$68.40$.

Choice A is incorrect. The amount \$51.60 is 43% of the money earned from a performance where 8 people attend, which is the cost of putting on the performance, not the profit from the performance. Choice B is incorrect. It is given that 57% of the money earned is profit, but 57% of \$120 is not equal to \$57.00. Choice D is incorrect. The profit can be found by subtracting 43% of \$120 from \$120, but 43% of \$120 is \$51.60, not \$43.00. Thus, the profit is $\$120 - \$51.60 = \$68.40$, not $\$120 - \$43.00 = \$77.00$.

QUESTION 6.

Choice B is correct. When 4 times the number x is added to 12, the result is $12 + 4x$. Since this result is equal to 8, the equation $12 + 4x = 8$ must be true. Subtracting 12 from each side of $12 + 4x = 8$ gives $4x = -4$, and then dividing both sides of $4x = -4$ by 4 gives $x = -1$. Therefore, 2 times x added to 7, or $7 + 2x$, is equal to $7 + 2(-1) = 5$.

Choice A is incorrect because -1 is the value of x, not the value of $7 + 2x$. Choices C and D are incorrect and may result from calculation errors.

QUESTION 7.

Choice D is correct. The x-intercepts of the parabola represented by $y = x^2 - 6x + 8$ in the xy-plane are the values of x for which y is equal to 0. The factored form of the equation, $y = (x - 2)(x - 4)$, shows that y equals 0 if and only if $x = 2$ or $x = 4$. Thus, the factored form, $y = (x - 2)(x - 4)$, displays the x-intercepts of the parabola as the constants 2 and 4.

Choices A, B, and C are incorrect because none of these forms shows the x-intercepts 2 and 4 as constants or coefficients.

QUESTION 8.

Choice D is correct. Since a player starts with k points and loses 2 points each time a task is not completed, the player's score will be $k - 2n$ after n tasks are not completed (and no additional points are gained). Since a player who fails to complete 100 tasks has a score of 200 points, the equation $200 = k - 100(2)$ must be true. This equation can be solved by adding 200 to each side, giving $k = 400$.

Choices A, B, and C are incorrect and may result from errors in setting up or solving the equation relating the player's score to the number of tasks the player fails to complete. For example, choice A may result from subtracting 200 from the left-hand side of $200 = k - 100(2)$ and adding 200 to the right-hand side.

QUESTION 9.

Choice A is correct. Since x is the number of 40-pound boxes, $40x$ is the total weight, in pounds, of the 40-pound boxes; and since y is the number of 65-pound boxes, $65y$ is the total weight, in pounds, of the 65-pound boxes. The combined weight of the boxes is therefore $40x + 65y$, and the total number of boxes is $x + y$. Since the forklift can carry up to 45 boxes or up to 2,400 pounds, the inequalities that represent these relationships are $40x + 65y \leq 2{,}400$ and $x + y \leq 45$.

Choice B is incorrect. The second inequality correctly represents the maximum number of boxes on the forklift, but the first inequality divides, rather than multiplies, the number of boxes by their respective weights. Choice C is incorrect. The combined weight of the boxes, $40x + 65y$, must be less than or equal to 2,400 pounds, not 45; the total number of boxes, $x + y$, must be less than or equal to 45, not 2,400. Choice D is incorrect. The second inequality correctly represents the maximum weight, in pounds, of the boxes on the forklift, but the total number of boxes, $x + y$, must be less than or equal to 45, not 2,400.

QUESTION 10.

Choice B is correct. It is given that $g(3) = 2$. Therefore, to find the value of $f(g(3))$, substitute 2 for $g(3)$: $f(g(3)) = f(2) = 3$.

Choices A, C, and D are incorrect and may result from misunderstandings about function notation.

QUESTION 11.

Choice B is correct. Tony reads 250 words per minute, and he plans to read for 3 hours, which is 180 minutes, each day. Thus, Tony is planning to read $250 \times 180 = 45{,}000$ words of the novel per day. Since the novel has 349,168 words, it will take Tony $\frac{349{,}168}{45{,}000} \approx 7.76$ days of reading to finish the novel. That is, it will take Tony 7 full days of reading and most of an 8th day of reading to finish the novel. Therefore, it will take Tony 8 days to finish the novel.

Choice A is incorrect and may result from an incorrect calculation or incorrectly using the numbers provided in the table. Choice C is incorrect and may result from taking the total number of words in the novel divided by the rate Tony reads per hour. Choice D is incorrect and may result from taking the total number of words in the novel divided by the number of pages in the novel.

QUESTION 12.

Choice D is correct. Since there were 175,000 tons of trash in the landfill on January 1, 2000, and the amount of trash in the landfill increased by 7,500 tons each year after that date, the amount of trash, in tons, in the landfill y years after January 1, 2000 can be expressed as $175{,}000 + 7{,}500y$. The landfill has a capacity of 325,000 tons. Therefore, the set of years where the amount of trash in the landfill is at (equal to) or above (greater than) capacity is described by the inequality $175{,}000 + 7{,}500y \geq 325{,}000$.

Choice A is incorrect. This inequality does not account for the 175,000 tons of trash in the landfill on January 1, 2000, nor does it accurately account for the 7,500 tons of trash that are added to the landfill each year after January 1, 2000. Choice B is incorrect. This inequality does not account for the 175,000 tons of trash in the landfill on January 1, 2000. Choice C is incorrect. This inequality represents the set of years where the amount of trash in the landfill is at or below capacity.

QUESTION 13.

Choice D is correct. Survey research is an efficient way to estimate the preferences of a large population. In order to reliably generalize the results of survey research to a larger population, the participants should be randomly selected from all people in that population. Since this survey was conducted

with a population that was not randomly selected, the results are not reliably representative of all people in the town. Therefore, of the given factors, where the survey was given makes it least likely that a reliable conclusion can be drawn about the sports-watching preferences of all people in the town.

Choice A is incorrect. In general, larger sample sizes are preferred over smaller sample sizes. However, a sample size of 117 people would have allowed a reliable conclusion about the population if the participants had been selected at random. Choice B is incorrect. Whether the population is large or small, a large enough sample taken from the population is reliably generalizable if the participants are selected at random from that population. Thus, a reliable conclusion could have been drawn about the population if the 117 survey participants had been selected at random. Choice C is incorrect. When giving a survey, participants are not forced to respond. Even though some people refused to respond, a reliable conclusion could have been drawn about the population if the participants had been selected at random.

QUESTION 14.

Choice C is correct. According to the graph, the horizontal line that represents 550 billion miles traveled intersects the line of best fit at a point whose horizontal coordinate is between 2000 and 2005, and slightly closer to 2005 than to 2000. Therefore, of the choices given, 2003 best approximates the year in which the number of miles traveled by air passengers in Country X was estimated to be 550 billion.

Choice A is incorrect. According to the line of best fit, in 1997 the estimated number of miles traveled by air passengers in Country X was about 450 billion, not 550 billion. Choice B is incorrect. According to the line of best fit, in 2000 the estimated number of miles traveled by air passengers in Country X was about 500 billion, not 550 billion. Choice D is incorrect. According to the line of best fit, in 2008 the estimated number of miles traveled by air passengers in Country X was about 600 billion, not 550 billion.

QUESTION 15.

Choice A is correct. The number of miles Earth travels in its one-year orbit of the Sun is 580,000,000. Because there are about 365 days per year, the number of miles Earth travels per day is $\frac{580{,}000{,}000}{365} \approx 1{,}589{,}041$. There are 24 hours in one day, so Earth travels at $\frac{1{,}589{,}041}{24} \approx 66{,}210$ miles per hour. Therefore, of the choices given, 66,000 miles per hour is closest to the average speed of Earth as it orbits the Sun.

Choices B, C, and D are incorrect and may result from calculation errors.

QUESTION 16.

Choice B is correct. According to the table, there are 18 + 7 = 25 graduates who passed the bar exam, and 7 of them did not take the review course. Therefore, if one of the surveyed graduates who passed the bar exam is chosen at random, the probability that the person chosen did not take the review course is $\frac{7}{25}$.

Choices A, C, and D are incorrect. Each of these choices represents a different probability from the conditional probability that the question asks for. Choice A represents the following probability. If one of the surveyed graduates who passed the bar exam is chosen at random, the probability that the person chosen did take the review course is $\frac{18}{25}$. Choice C represents the following probability. If one of the surveyed graduates is chosen at random, the probability that the person chosen passed the bar exam is $\frac{25}{200}$. Choice D represents the following probability. If one of the surveyed graduates is chosen at random, the probability that the person chosen passed the exam and took the review course is $\frac{7}{200}$.

QUESTION 17.

Choice C is correct. To find the atomic weight of an unknown element that is 20% less than the atomic weight of calcium, multiply the atomic weight, in amu, of calcium by (1 − 0.20): (40)(1 − 0.20) = (40)(0.8) = 32.

Choice A is incorrect. This value is 20% of the atomic weight of calcium, not an atomic weight 20% less than that atomic weight of calcium. Choice B is incorrect. This value is 20 amu less, not 20% less, than the atomic weight of calcium. Choice D is incorrect. This value is 20% more, not 20% less, than the atomic weight of calcium.

QUESTION 18.

Choice C is correct. The mean and median values of a data set are equal when there is a symmetrical distribution. For example, a normal distribution is symmetrical. If the mean and the median values are not equal, then the distribution is not symmetrical. Outliers are a small group of values that are significantly smaller or larger than the other values in the data. When there are outliers in the data, the mean will be pulled in their direction (either smaller or larger) while the median remains the same. The example in the question has a mean that is larger than the median, and so an appropriate conjecture is that large outliers are present in the data; that is, that there are a few homes that are valued much more than the rest.

Choice A is incorrect because a set of home values that are close to each other will have median and mean values that are also close to each other.

Choice B is incorrect because outliers with small values will tend to make the mean lower than the median. Choice D is incorrect because a set of data where many homes are valued between $125,000 and $165,000 will likely have both a mean and a median between $125,000 and $165,000.

QUESTION 19.

Choice B is correct. The median of a data set is the middle value when the data points are sorted in either ascending or descending order. There are a total of 600 data points provided, so the median will be the average of the 300th and 301st data points. When the data points are sorted in order:

- Values 1 through 260 will be 0.
- Values 261 through 450 will be 1.
- Values 451 through 540 will be 2.
- Values 541 through 580 will be 3.
- Values 581 through 600 will be 4.

Therefore, both the 300th and 301st values are 1, and hence the median is 1.

Choices A, C, and D are incorrect and may result from either a calculation error or a conceptual error.

QUESTION 20.

Choice C is correct. When survey participants are selected at random from a larger population, the sample statistics calculated from the survey can be generalized to the larger population. Since 10 of 300 students surveyed at Lincoln School have 4 siblings, one can estimate that this same ratio holds for all 2,400 students at Lincoln School. Also, since 10 of 300 students surveyed at Washington School have 4 siblings, one can estimate that this same ratio holds for all 3,300 students at Washington School. Therefore, approximately $\frac{10}{30} \times 2{,}400 = 80$ students at Lincoln School and $\frac{10}{30} \times 3{,}300 = 110$ students at Washington School are expected to have 4 siblings. Thus, the total number of students with 4 siblings at Washington School is expected to be $110 - 80 = 30$ more than the total number of students with 4 siblings at Lincoln School.

Choices A, B, and D are incorrect and may result from either conceptual or calculation errors. For example, choice A is incorrect; even though there is the same ratio of survey participants from Lincoln School and Washington School with 4 siblings, the two schools have a different total number of students, and thus, a different expected total number of students with 4 siblings.

QUESTION 21.

Choice D is correct. The difference between the number of hours the project takes, y, and the number of hours the project was estimated to take, x, is $|y - x|$. If the goal is met, the difference is less than 10, which can be represented as $|y - x| < 10$ or $-10 < y - x < 10$.

Choice A is incorrect. This inequality states that the estimated number of hours plus the actual number of hours is less than 10, which cannot be true because the estimate is greater than 100. Choice B is incorrect. This inequality states that the actual number of hours is greater than the estimated number of hours plus 10, which could be true only if the goal of being within 10 hours of the estimate were not met. Choice C is incorrect. This inequality states that the actual number of hours is less than the estimated number of hours minus 10, which could be true only if the goal of being within 10 hours of the estimate were not met.

QUESTION 22.

Choice B is correct. To rearrange the formula $I = \frac{P}{4\pi r^2}$ in terms of r^2, first multiply each side of the equation by r^2. This yields $r^2 I = \frac{P}{4\pi}$. Then dividing each side of $r^2 I = \frac{P}{4\pi}$ by I gives $r^2 = \frac{P}{4\pi I}$.

Choices A, C, and D are incorrect and may result from algebraic errors during the rearrangement of the formula.

QUESTION 23.

Choice A is correct. If I_A is the intensity measured by Observer A from a distance of r_A and I_B is the intensity measured by Observer B from a distance of r_B, then $I_A = 16 I_B$. Using the formula $I = \frac{P}{4\pi^2}$, the intensity measured by Observer A is $I_A = \frac{P}{4\pi r_A^2}$, which can also be written in terms of I_B as $I_A = 16 I_B = 16 \left(\frac{P}{4\pi r_B^2} \right)$. Setting the right-hand sides of these two equations equal to each other gives $\frac{P}{4\pi r_A^2} = 16 \left(\frac{P}{4\pi r_B^2} \right)$, which relates the distance of Observer A from the radio antenna to the distance of Observer B from the radio antenna. Canceling the common factor $\frac{P}{4\pi}$ and rearranging the equation gives $r_B^2 = 16 r_A^2$. Taking the square root of each side of $r_B^2 = 16 r_A^2$ gives $r_B = 4 r_A$, and then dividing each side by 4 yields $r_A = \frac{1}{4} r_B$. Therefore, the distance of Observer A from the radio antenna is $\frac{1}{4}$ the distance of Observer B from the radio antenna.

Choices B, C, and D are incorrect and may result from errors in deriving or using the formula $\frac{P}{4\pi r_A^2} = (16) \left(\frac{P}{4\pi r_B^2} \right)$.

QUESTION 24.

Choice A is correct. The equation of a circle with center (h, k) and radius r is $(x - h)^2 + (y - k)^2 = r^2$. To put the equation $x^2 + y^2 + 4x - 2y = -1$ in this form, complete the square as follows:

$$\begin{aligned} x^2 + y^2 + 4x - 2y &= -1 \\ (x^2 + 4x) + (y^2 - 2y) &= -1 \\ (x^2 + 4x + 4) - 4 + (y^2 - 2y + 1) - 1 &= -1 \\ (x + 2)^2 + (y - 1)^2 - 4 - 1 &= -1 \\ (x + 2)^2 + (y - 1)^2 &= 4 = 2^2 \end{aligned}$$

Therefore, the radius of the circle is 2.

Choice C is incorrect because it is the square of the radius, not the radius. Choices B and D are incorrect and may result from errors in rewriting the given equation in standard form.

QUESTION 25.

Choice A is correct. In the xy-plane, the slope m of the line that passes through the points (x_1, y_1) and (x_2, y_2) is given by the formula $m = \frac{y_2 - y_1}{x_2 - x_1}$. Thus, if the graph of the linear function f has intercepts at $(a, 0)$ and $(0, b)$, then the slope of the line that is the graph of $y = f(x)$ is $m = \frac{0 - b}{a - 0} = -\frac{b}{a}$. It is given that $a + b = 0$, and so $a = -b$. Finally, substituting $-b$ for a in $m = -\frac{b}{a}$ gives $m = -\frac{b}{-b} = 1$, which is positive.

Choices B, C, and D are incorrect and may result from a conceptual misunderstanding or a calculation error.

QUESTION 26.

Choice D is correct. The definition of the graph of a function f in the xy-plane is the set of all points $(x, f(x))$. Thus, for $-4 \le a \le 4$, the value of $f(a)$ is 1 if and only if the unique point on the graph of f with x-coordinate a has y-coordinate equal to 1. The points on the graph of f with x-coordinates -4, $\frac{3}{2}$, and 3 are, respectively, $(-4, 1)$, $\left(\frac{3}{2}, 1\right)$, and $(3, 1)$. Therefore, all of the values of f given in I, II, and III are equal to 1.

Choices A, B, and C are incorrect because they each omit at least one value of x for which $f(x) = 1$.

QUESTION 27.

Choice D is correct. According to the graph, in the interval from 0 to 10 minutes, the non-insulated sample decreased in temperature by about 18°C, while the insulated sample decreased by about 8°C; in the interval from 10 to 20 minutes, the non-insulated sample decreased in temperature by about 9°C, while the insulated sample decreased by about 5°C; in the interval

from 40 to 50 minutes, the non-insulated sample decreased in temperature by about 1°C, while the insulated sample decreased by about 3°C; and in the interval from 50 to 60 minutes, the non-insulated sample decreased in temperature by about 1°C, while the insulated sample decreased by about 2°C. The description in choice D accurately summarizes these rates of temperature change over the given intervals. (Note that since the two samples of water have equal mass and so must lose the same amount of heat to cool from 60°C to 25°C, the faster cooling of the non-insulated sample at the start of the cooling process must be balanced out by faster cooling of the insulated sample at the end of the cooling process.)

Choices A, B, and C are incorrect. None of these descriptions accurately compares the rates of temperature change shown in the graph for the 10-minute intervals.

QUESTION 28.

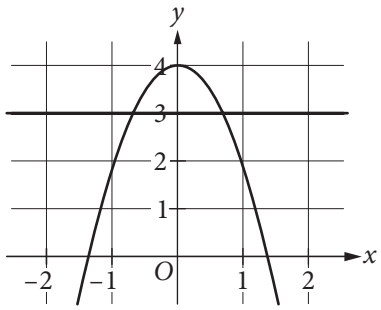
Choice B is correct. In the xy-plane, the slope m of the line that passes through the points (x_1, y_1) and (x_2, y_2) is $m = \frac{y_2 - y_1}{x_2 - x_1}$. Thus, the slope of the line through the points $C(7, 2)$ and $E(1, 0)$ is $\frac{2 - 0}{7 - 1}$, which simplifies to $\frac{2}{6} = \frac{1}{3}$. Therefore, diagonal AC has a slope of $\frac{1}{3}$. The other diagonal of the square is a segment of the line that passes through points B and D. The diagonals of a square are perpendicular, and so the product of the slopes of the diagonals is equal to -1. Thus, the slope of the line that passes through B and D is -3 because $\frac{1}{3}(-3) = -1$. Hence, an equation of the line that passes through B and D can be written as $y = -3x + b$, where b is the y-intercept of the line. Since diagonal BD will pass through the center of the square, $E(1, 0)$, the equation $0 = -3(1) + b$ holds. Solving this equation for b gives $b = 3$. Therefore, an equation of the line that passes through points B and D is $y = -3x + 3$, which can be rewritten as $y = -3(x - 1)$.

Choices A, C, and D are incorrect and may result from a conceptual error or a calculation error.

QUESTION 29.

Choice B is correct. Substituting 3 for y in $y = ax^2 + b$ gives $3 = ax^2 + b$, which can be rewritten as $3 - b = ax^2$. Since $y = 3$ is one of the equations in the given system, any solution x of $3 - b = ax^2$ corresponds to the solution $(x, 3)$ of the given system. Since the square of a real number is always nonnegative, and a positive number has two square roots, the equation $3 - b = ax^2$ will have two solutions for x if and only if (1) $a > 0$ and $b < 3$ or (2) $a < 0$ and $b > 3$. Of the values for a and b given in the choices, only $a = -2$, $b = 4$ satisfy one of these pairs of conditions.

Alternatively, if $a = -2$ and b = 4, then the second equation would be $y = -2x^2 + 4$. The graph of this quadratic equation in the xy-plane is a parabola with y-intercept (0, 4) that opens downward. The graph of the first equation, $y = 3$, is the horizontal line that contains the point (0, 3). As shown below, these two graphs have two points of intersection, and therefore, this system of equations has exactly two real solutions. (Graphing shows that none of the other three choices produces a system with exactly two real solutions.)



Choices A, C, and D are incorrect and may result from calculation or conceptual errors.

QUESTION 30.

Choice A is correct. The regular hexagon can be divided into 6 equilateral triangles of side length a by drawing the six segments from the center of the regular hexagon to each of its 6 vertices. Since the area of the hexagon is $384\sqrt{3}$ square inches, the area of each equilateral triangle will be $\frac{384\sqrt{3}}{6} = 64\sqrt{3}$ square inches.

Drawing any altitude of an equilateral triangle divides it into two 30°-60°-90° triangles. If the side length of the equilateral triangle is a, then the hypotenuse of each 30°-60°-90° triangle is a, and the altitude of the equilateral triangle will be the side opposite the 60° angle in each of the 30°-60°-90° triangles. Thus, the altitude of the equilateral triangle is $\frac{\sqrt{3}}{2}a$, and the area of the equilateral triangle is $\frac{1}{2}(a)\left(\frac{\sqrt{3}}{2}a\right) = \frac{\sqrt{3}}{4}a^2$. Since the area of each equilateral triangle is $64\sqrt{3}$ square inches, it follows that $a^2 = \frac{4}{\sqrt{3}}(64\sqrt{3})$ = 256 square inches. And since the area of the square with side length a is a^2, it follows that the square has area 256 square inches.

Choices B, C, and D are incorrect and may result from calculation or conceptual errors.

QUESTION 31.

The correct answer is 14. Since the coastal geologist estimates that the country's beaches are eroding at a rate of 1.5 feet every year, they will erode by $1.5x$ feet in x years. Thus, if the beaches erode by 21 feet in x years, the equation $1.5x = 21$ must hold. The value of x is then $\frac{21}{1.5} = 14$. Therefore, according to the geologist's estimate, it will take 14 years for the country's beaches to erode by 21 feet.

QUESTION 32.

The correct answer is 7. There are 60 minutes in each hour, and so there are $60h$ minutes in h hours. Since h hours and 30 minutes is equal to 450 minutes, it follows that $60h + 30 = 450$. This equation can be simplified to $60h = 420$, and so the value of h is $\frac{420}{60} = 7$.

QUESTION 33.

The correct answer is 11. It is given that the function $f(x)$ passes through the point (3, 6). Thus, if $x = 3$, the value of $f(x)$ is 6 (since the graph of f in the xy-plane is the set of all points $(x, f(x))$. Substituting 3 for x and 6 for $f(x)$ in $f(x) = 3x^2 - bx + 12$ gives $6 = 3(3)^2 - b(3) + 12$. Performing the operations on the right-hand side of this equation gives $6 = 3(9) - 3b + 12 = 27 - 3b + 12 = 39 - 3b$. Subtracting 39 from each side of $6 = 39 - 3b$ gives $-33 = -3b$, and then dividing each side of $-3b = -33$ by -3 gives the value of b as 11.

QUESTION 34.

The correct answer is 105. Let D be the number of hours Doug spent in the tutoring lab, and let L be the number of hours Laura spent in the tutoring lab. Since Doug and Laura spent a combined total of 250 hours in the tutoring lab, the equation $D + L = 250$ holds. The number of hours Doug spent in the lab is 40 more than the number of hours Laura spent in the lab, and so the equation $D = L + 40$ holds. Substituting $L + 40$ *for* D in $D + L = 250$ gives $(L + 40) + L = 250$, or $40 + 2L = 250$. Solving this equation gives $L = 105$. Therefore, Laura spent 105 hours in the tutoring lab.

QUESTION 35.

The correct answer is 15. The amount, a, that Jane has deposited after t fixed weekly deposits is equal to the initial deposit plus the total amount of money Jane has deposited in the t fixed weekly deposits. This amount a is given to be $a = 18t + 15$. The amount she deposited in the t fixed weekly deposits is the amount of the weekly deposit times t; hence, this amount must be given by the term $18t$ in $a = 18t + 15$ (and so Jane must have deposited 18 dollars each week after the initial deposit). Therefore, the amount of Jane's original deposit, in dollars, is $a - 18t = 15$.

QUESTION 36.

The correct answer is 32. Since segments LM and MN are tangent to the circle at points L and N, respectively, angles OLM and ONM are right angles. Thus, in quadrilateral $OLMN$, the measure of angle O is $360° - (90° + 60° + 90°) = 120°$. Thus, in the circle, central angle O cuts off $\frac{120}{360} = \frac{1}{3}$ of the circumference; that is, minor arc $\overset{\frown}{LN}$ is $\frac{1}{3}$ of the circumference. Since the circumference is 96, the length of minor arc $\overset{\frown}{LN}$ is $\frac{1}{3} \times 96 = 32$.

QUESTION 37.

The correct answer is 3284. According to the formula, the number of plants one year from now will be $3000 + 0.2(3000)\left(1 - \frac{3000}{4000}\right)$, which is equal to 3150. Then, using the formula again, the number of plants two years from now will be $3150 + 0.2(3150)\left(1 - \frac{3150}{4000}\right)$, which is 3283.875. Rounding this value to the nearest whole number gives 3284.

QUESTION 38.

The correct answer is 7500. If the number of plants is to be increased from 3000 this year to 3360 next year, then the number of plants that the environment can support, K, must satisfy the equation $3360 = 3000 + 0.2(3000)\left(1 - \frac{3000}{K}\right)$. Dividing both sides of this equation by 3000 gives $1.12 = 1 + 0.2\left(1 - \frac{3000}{K}\right)$, and therefore, it must be true that $0.2\left(1 - \frac{3000}{K}\right) = 0.12$, or equivalently, $1 - \frac{3000}{K} = 0.6$. It follows that $\frac{3000}{K} = 0.4$, and so $K = \frac{3000}{0.4} = 7500$.

Scoring Your SAT® Practice Test #2

Congratulations on completing an SAT® practice test. To score your test, use these instructions and the conversion tables and answer key at the end of this document.

Scores Overview

The redesigned SAT® will provide more information about your learning by reporting more scores than ever before. Each of the redesigned assessments (SAT, PSAT/NMSQT®, PSAT™ 10, and PSAT™ 8/9) will report test scores and cross-test scores on a common scale. Additionally, subscores will be reported to provide additional diagnostic information to students, educators, and parents. For more details about scores, visit **collegereadiness.collegeboard.org/sat/scores**.

The practice test you completed was written by the College Board's Assessment Design & Development team using the same processes and review standards used when writing the actual SAT. Everything from the layout of the page to the construction of the questions accurately reflects what you'll see on test day.

How to Calculate Your Practice Test Scores

GET SET UP

1. You'll need the answer sheet that you bubbled in while taking the practice test. You'll also need the conversion tables and answer key at the end of this document.
2. Using the answer key, count up your total correct answers for each section. You may want to write the number of correct answers for each section at the bottom of that section in the answer key.
3. Using your marked-up answer key and the conversion tables, follow the directions to get all of your scores.

GET SECTION AND TOTAL SCORES

Your total score on the SAT practice test is the sum of your Evidence-Based Reading and Writing Section score and your Math Section score. To get your total score, you will convert what we call the "raw score" for each section — the number of questions you got right in that section — into the "scaled score" for that section, then calculate the total score.

GET YOUR EVIDENCE-BASED READING AND WRITING SECTION SCORE

Calculate your SAT Evidence-Based Reading and Writing Section score (it's on a scale of 200–800) by first determining your Reading Test score and your Writing and Language Test score. Here's how:

1. Count the number of correct answers you got on Section 1 (the Reading Test). There is no penalty for wrong answers. The number of correct answers is your raw score.
2. Go to Raw Score Conversion Table 1: Section and Test Scores on page 7. Look in the "Raw Score" column for your raw score, and match it to the number in the "Reading Test Score" column.
3. Do the same with Section 2 to determine your Writing and Language Test score.
4. Add your Reading Test Score to your Writing and Language Test score.
5. Multiply that number by 10. This is your Evidence-Based Reading and Writing Section score.

EXAMPLE: *Micah answered 29 of the 52 questions correctly on the SAT Reading Test and 20 of the 44 questions correctly on the SAT Writing and Language Test. Using the table on page 7, he calculates that he received an SAT Reading Test score of 27 and an SAT Writing and Language Test score of 23. He adds 27 to 23 (gets 50) and then multiplies by 10 to determine his SAT Evidence-Based Reading and Writing Section score of 500.*

GET YOUR MATH SECTION SCORE

Calculate your SAT Math Section score (it's on a scale of 200–800).

1. Count the number of correct answers you got on Section 3 (Math Test — No Calculator) and Section 4 (Math Test — Calculator). There is no penalty for wrong answers.
2. Add the number of correct answers you got on Section 3 (Math Test — No Calculator) and Section 4 (Math Test — Calculator).
3. Use Raw Score Conversion Table 1: Section and Test Scores to turn your raw score into your Math Section score.

GET YOUR TOTAL SCORE

Add your Evidence-Based Reading and Writing Section score to your Math Section score. The result is your total score on the SAT Practice Test, on a scale of 400–1600.

GET SUBSCORES

Subscores provide more detailed information about your strengths in specific areas within literacy and math. They are reported on a scale of 1–15.

HEART OF ALGEBRA

The Heart of Algebra subscore is based on questions from the Math Test that focus on linear equations and inequalities.

1. Add up your total correct answers from the following set of questions:
   - Math Test – No Calculator: Questions 1-3; 6; 8-9; 16; 20
   - Math Test – Calculator: Questions 1; 3; 6; 8-9; 12; 21; 25; 28; 34-35

   Your total correct answers from all of these questions is your raw score.
2. Use Raw Score Conversion Table 2: Subscores on page 8 to determine your Heart of Algebra subscore.

PROBLEM SOLVING AND DATA ANALYSIS

The Problem Solving and Data Analysis subscore is based on questions from the Math Test that focus on quantitative reasoning, the interpretation and synthesis of data, and solving problems in rich and varied contexts.

1. Add up your total correct answers from the following set of questions:
   - Math Test – No Calculator: No Questions
   - Math Test – Calculator: Questions 2; 4-5; 11; 13-20; 27; 31-32; 37-38

   Your total correct answers from all of these questions is your raw score.
2. Use Raw Score Conversion Table 2: Subscores to determine your Problem Solving and Data Analysis subscore.

PASSPORT TO ADVANCED MATH

The Passport to Advanced Math subscore is based on questions from the Math Test that focus on topics central to the ability of students to progress to more advanced mathematics, such as understanding the structure of expressions, reasoning with more complex equations, and interpreting and building functions.

1. Add up your total correct answers from the following set of questions:
   - Math Test – No Calculator: Questions 4-5; 7; 10; 12-15; 17
   - Math Test – Calculator: Questions 7; 10; 22-23; 26; 29; 33

   Your total correct answers from all of these questions is your raw score.
2. Use Raw Score Conversion Table 2: Subscores to determine your Passport to Advanced Math subscore.

EXPRESSION OF IDEAS

The Expression of Ideas subscore is based on questions from the Writing and Language Test that focus on topic development, organization, and rhetorically effective use of language.

1. Add up your total correct answers from the following set of questions:
   - Writing and Language Test: Questions 2; 4; 7; 9-12; 15; 17-19; 22; 24-26; 28; 31-32; 36-37; 40; 42-44

   Your total correct answers from all of these questions is your raw score.
2. Use Raw Score Conversion Table 2: Subscores to determine your Expression of Ideas subscore.

STANDARD ENGLISH CONVENTIONS

The Standard English Conventions subscore is based on questions from the Writing and Language Test that focus on sentence structure, usage, and punctuation.

1. Add up your total correct answers from the following set of questions:
   - Writing and Language Test: Questions 1; 3; 5-6; 8; 13-14; 16; 20-21; 23; 27; 29-30; 33-35; 38-39; 41

   Your total correct answers from all of these questions is your raw score.
2. Use Raw Score Conversion Table 2: Subscores to determine your Standard English Conventions subscore.

WORDS IN CONTEXT

The Words in Context subscore is based on questions from both the Reading Test and the Writing and Language Test that address word/phrase meaning in context and rhetorical word choice.

1. Add up your total correct answers from the following set of questions:
   - Reading Test: Questions 4; 8; 16; 25; 28; 34; 37; 39; 44; 47
   - Writing and Language Test: Questions 7; 10; 18-19; 28; 32; 36; 44

   Your total correct answers from all of these questions is your raw score.
2. Use Raw Score Conversion Table 2: Subscores to determine your Words in Context subscore.

COMMAND OF EVIDENCE

The Command of Evidence subscore is based on questions from both the Reading Test and the Writing and Language Test that ask you to interpret and use evidence found in a wide range of passages and informational graphics, such as graphs, tables, and charts.

1. Add up your total correct answers from the following set of questions:
   - Reading Test: Questions 10; 13; 20-21; 23; 32; 36; 41; 46; 51
   - Writing and Language Test: Questions 4; 9; 15; 17; 24; 26; 37; 43

   Your total correct answers from all of these questions is your raw score.
2. Use Raw Score Conversion Table 2: Subscores to determine your Command of Evidence subscore.

GET CROSS-TEST SCORES

The new SAT also reports two cross-test scores: Analysis in History/Social Studies and Analysis in Science. These scores are based on questions in the Reading, Writing and Language, and Math Tests that ask students to think analytically about texts and questions in these subject areas. Cross-test scores are reported on a scale of 10–40.

ANALYSIS IN HISTORY/SOCIAL STUDIES

1. Add up your total correct answers from the following set of questions:
   - Reading Test: Questions 11-21; 33-42
   - Writing and Language Test: Questions 36-37; 40; 42-44
   - Math Test – No Calculator: No Questions
   - Math Test – Calculator: Questions 4-5; 11-13; 16; 18; 35

   Your total correct answers from all of these questions is your raw score.
2. Use Raw Score Conversion Table 3: Cross-Test Scores on page 9 to determine your Analysis in History/Social Studies cross-test score.

ANALYSIS IN SCIENCE

1. Add up your total correct answers from the following set of questions:
   - Reading Test: Questions 22-32; 43-52
   - Writing and Language Test: Questions 24-26; 28; 31-32
   - Math Test – No Calculator: Question 14
   - Math Test – Calculator: Questions: 3; 15; 17; 22-23; 27; 31

   Your total correct answers from all of these questions is your raw score.
2. Use Raw Score Conversion Table 3: Cross-Test Scores to determine your Analysis in Science cross-test score.

SAT Practice Test #2: Worksheets

ANSWER KEY

Reading Test Answers

1 A	12 D	23 A	34 A	45 D
2 B	13 A	24 B	35 D	46 C
3 C	14 B	25 C	36 B	47 A
4 A	15 C	26 B	37 B	48 B
5 D	16 A	27 D	38 D	49 D
6 B	17 C	28 D	39 C	50 D
7 D	18 C	29 D	40 A	51 D
8 D	19 A	30 B	41 B	52 A
9 B	20 B	31 C	42 D	
10 D	21 C	32 B	43 C	
11 D	22 C	33 B	44 B	

READING TEST RAW SCORE (NUMBER OF CORRECT ANSWERS)

Writing and Language Test Answers

1 B	12 B	23 A	34 D
2 B	13 D	24 B	35 A
3 A	14 C	25 B	36 D
4 A	15 C	26 A	37 A
5 D	16 C	27 D	38 B
6 D	17 B	28 A	39 C
7 B	18 B	29 C	40 D
8 D	19 A	30 C	41 D
9 B	20 D	31 D	42 C
10 B	21 D	32 B	43 C
11 C	22 B	33 D	44 D

WRITING AND LANGUAGE TEST RAW SCORE (NUMBER OF CORRECT ANSWERS)

Math Test No Calculator Answers

1 C	11 C	
2 B	12 B	
3 A	13 D	
4 A	14 A	
5 C	15 D	
6 D	16	3, 6, or 9
7 A	17	19
8 C	18	12
9 B	19	6
10 C	20	1/4 or .25

MATH TEST NO CALCULATOR RAW SCORE (NUMBER OF CORRECT ANSWERS)

Math Test Calculator Answers

1 C	11 B	21 D	31	14
2 B	12 D	22 B	32	7
3 A	13 D	23 A	33	11
4 C	14 C	24 A	34	105
5 C	15 A	25 A	35	15
6 B	16 B	26 D	36	32
7 D	17 C	27 D	37	3284
8 D	18 C	28 B	38	7500
9 A	19 B	29 B		
10 B	20 C	30 A		

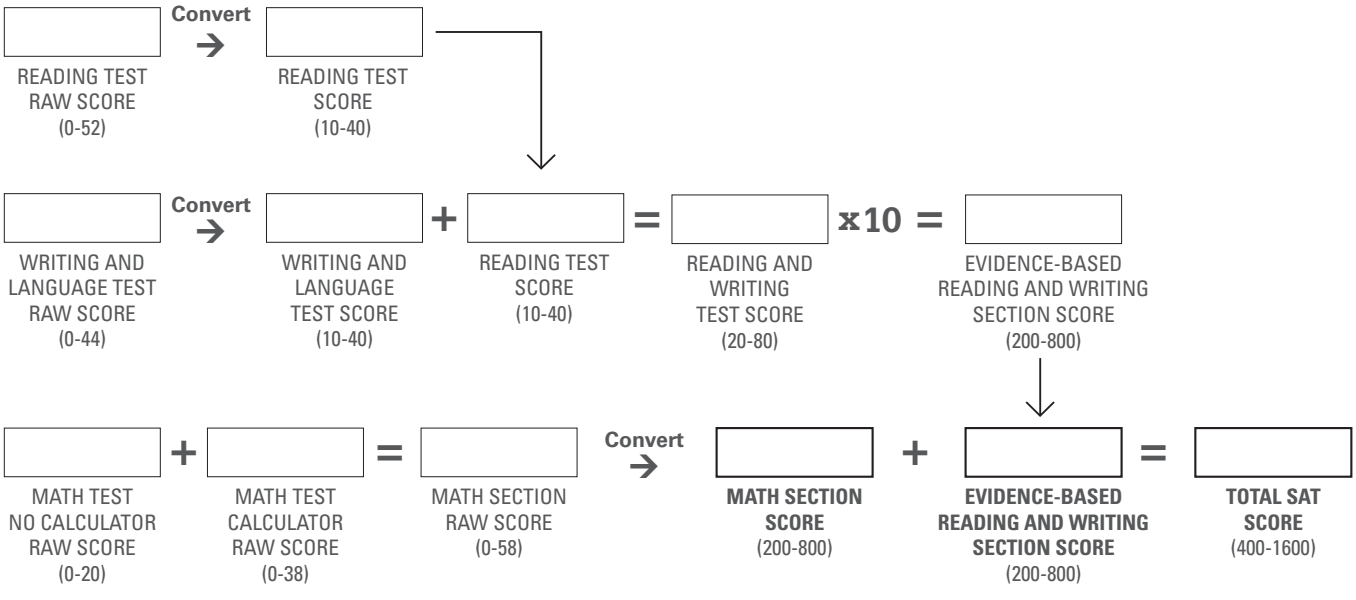
MATH TEST CALCULATOR RAW SCORE (NUMBER OF CORRECT ANSWERS)

SAT Practice Test #2: Worksheets

RAW SCORE CONVERSION TABLE 1 SECTION AND TEST SCORES

Raw Score (# of correct answers)	Math Section Score	Reading Test Score	Writing and Language Test Score
0	200	10	10
1	200	10	10
2	210	10	10
3	230	11	11
4	250	12	12
5	270	13	13
6	290	14	14
7	300	15	14
8	320	15	15
9	330	16	16
10	340	17	17
11	360	18	17
12	370	18	18
13	380	19	18
14	390	19	19
15	400	20	20
16	420	20	20
17	430	21	21
18	440	21	22
19	450	22	22
20	460	22	23
21	470	23	23
22	480	23	24
23	490	24	25
24	500	24	25
25	510	24	26
26	510	25	26
27	520	25	27
28	530	26	27
29	540	27	28
30	550	27	29
31	560	28	29
32	570	28	30
33	570	29	31
34	580	29	31
35	590	30	32
36	600	30	33
37	610	31	33
38	620	31	34
39	630	32	35
40	640	32	36
41	650	33	37
42	650	33	38
43	660	34	39
44	670	34	40
45	680	35	
46	690	35	
47	690	36	
48	700	37	
49	710	37	
50	720	38	
51	730	39	
52	740	40	
53	750		
54	760		
55	770		
56	780		
57	790		
58	800		

CONVERSION EQUATION 1 SECTION AND TEST SCORES



SAT Practice Test #2: Worksheets

RAW SCORE CONVERSION TABLE 2 SUBSCORES

Raw Score *(# of correct answers)*	Expression of Ideas	Standard English Conventions	Heart of Algebra	Problem Solving and Data Analysis	Passport to Advanced Math	Words in Context	Command of Evidence
0	1	1	1	1	1	1	1
1	1	1	1	1	3	1	1
2	1	1	2	2	5	2	2
3	2	2	3	3	6	3	3
4	3	2	4	4	7	4	4
5	4	3	5	5	8	5	5
6	5	4	6	6	9	6	6
7	6	5	6	7	10	6	7
8	6	6	7	8	11	7	8
9	7	6	8	8	11	8	8
10	7	7	8	9	12	8	9
11	8	7	9	10	12	9	10
12	8	8	9	10	13	9	10
13	9	8	9	11	13	10	11
14	9	9	10	12	14	11	12
15	10	10	10	13	14	12	13
16	10	10	11	14	15	13	14
17	11	11	12	15		14	15
18	11	12	13			15	15
19	12	13	15				
20	12	15					
21	13						
22	14						
23	14						
24	15						

CONVERSION EQUATION 2 SUBSCORES

HEART OF ALGEBRA RAW SCORE (0-19) Convert → **HEART OF ALGEBRA SUBSCORE** (1-15)

EXPRESSION OF IDEAS RAW SCORE (0-24) Convert → **EXPRESSION OF IDEAS SUBSCORE** (1-15)

COMMAND OF EVIDENCE RAW SCORE (0-18) Convert → **COMMAND OF EVIDENCE SUBSCORE** (1-15)

PROBLEM SOLVING AND DATA ANALYSIS RAW SCORE (0-17) Convert → **PROBLEM SOLVING AND DATA ANALYSIS SUBSCORE** (1-15)

STANDARD ENGLISH CONVENTIONS RAW SCORE (0-20) Convert → **STANDARD ENGLISH CONVENTIONS SUBSCORE** (1-15)

WORDS IN CONTEXT RAW SCORE (0-18) Convert → **WORDS IN CONTEXT SUBSCORE** (1-15)

PASSPORT TO ADVANCED MATH RAW SCORE (0-16) Convert → **PASSPORT TO ADVANCED MATH SUBSCORE** (1-15)

SAT Practice Test #2: Worksheets

RAW SCORE CONVERSION TABLE 3 CROSS-TEST SCORES

Raw Score (# of correct answers)	Analysis in History/ Social Studies Cross-Test Score	Analysis in Science Cross-Test Score	Raw Score (# of correct answers)	Analysis in History/ Social Studies Cross-Test Score	Analysis in Science Cross-Test Score
0	10	10	18	26	26
1	10	11	19	26	26
2	10	12	20	27	27
3	12	13	21	28	28
4	13	14	22	29	29
5	15	15	23	29	29
6	16	16	24	30	30
7	16	17	25	31	31
8	17	18	26	31	31
9	18	19	27	32	32
10	19	19	28	33	33
11	20	20	29	34	34
12	21	21	30	35	34
13	22	22	31	36	35
14	23	22	32	37	36
15	24	23	33	38	37
16	24	24	34	39	38
17	25	25	35	40	40

CONVERSION EQUATION 3 CROSS-TEST SCORES

	Analysis in History/Social Studies		Analysis in Science	
Test	**Questions**	**Raw Score**	**Questions**	**Raw Score**
Reading Test	11-21; 33-42		22-32; 43-52	
Writing and Language Test	36-37; 40; 42-44		24-26; 28; 31-32	
Math Test No Calculator	None		3	
Math Test Calculator	4-5; 11-13; 16; 18; 35		15; 17; 22-23; 27; 31	
Total				

ANALYSIS IN HISTORY/ SOCIAL STUDIES RAW SCORE (0-35) → Convert → **ANALYSIS IN HISTORY/ SOCIAL STUDIES CROSS-TEST SCORE** (10-40)

ANALYSIS IN SCIENCE RAW SCORE (0-35) → Convert → **ANALYSIS IN SCIENCE CROSS-TEST SCORE** (10-40)