

Ivy Global

SAT Online Practice Test 1

Edition 3.3

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SAT Online Practice Test 1

This publication was written and edited by the team at Ivy Global.

Editor-in-Chief: Sarah Pike

Producers: Lloyd Min and Junho Suh

Editors: Sacha Azor, Corwin Henville, and Nathan Létourneau

Contributors: Rebecca Anderson, Thea Bélanger-Polak, Grace Bueler, Alexandra Candib, Alex Dunne, Alex Emond, Bessie Fan, Ian Greig, Elizabeth Hilts, Mark Mendola, Geoffrey Morrison, Ward Pettibone, Arden Rogow-Bales, Kristin Rose, Rachel Schloss, Yolanda Song, and Nathan Tebokkel

About the Publisher

Ivy Global is a pioneering education company that delivers a wide range of educational services.

E-mail: publishing@ivyglobal.com

Website: <http://www.ivyglobal.com>

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How to Use This Booklet

How to Use This Booklet

Welcome, students and parents! This booklet is intended to help students prepare for the SAT, a test administered by the College Board. It contains an overview of the SAT, a few basic test-taking tips, a full-length practice test, and an answer key with scoring directions.

The first key to succeeding on the SAT is knowing the test. This booklet will help you know what to expect and build your confidence. Reading the quick tips in this booklet can help you avoid common mistakes. Taking this practice test will help you become more familiar with the format, pacing, and content of the exam. Reviewing your scores, as well as any questions you missed, can help you determine what you might need to continue studying in order to do your best on test day.

This booklet is not a fully comprehensive test-prep book; for an in-depth study guide to the SAT, we recommend Ivy Global's *New SAT Guide*.

The Test

The SAT is a test used by most US colleges to help make admissions decisions. It is administered in 5 sections: the Reading section, the Writing and Language section, the Math (No Calculator) section, the Math (Calculator) section, and the optional Essay. Most questions on the SAT are multiple choice, with four answer options. Some problems in the Math section are student-produced response questions: rather than selecting from a list of answer options, you will have to solve a problem and enter a number on your answer sheet. The Essay is a writing assignment, and you will be given lined paper to write your essay.

The SAT is a timed exam. You will be allowed a limited amount of time for each section. Set aside a total of 4 hours for this exam. The amount of time that you will have for each section is given on the first page of each section. If you are taking a proctored exam, your proctor will also announce the time that you are allowed for each section.

Detailed directions are provided at the beginning of each section. Read these directions carefully when taking practice exams. You should try to be totally familiar with the directions for each section by the time that you take the real SAT.

Quick Tips

Read every question and all answer options carefully. Many students select incorrect answers when they could easily find the correct answers simply because they misread the questions or didn't look at all of the answer options. Read carefully to avoid careless errors.

Use the Process of Elimination. Sometimes the easiest way to find the correct answer is to cross out the answers in your test booklet that you know are incorrect. Don't cross answers out on your answer sheet, as stray marks could be counted as incorrect answers.

Make your best guess on every problem. You should always try to find the correct answer, but if you feel that you're stumped then you should try to make your best guess. There's no penalty for guessing.

Don't be afraid to write in your test booklet, but always remember to mark your answer on your answer sheet. The scorers won't look at your test booklet: you won't get points off for writing in it nor will you receive credit for showing your work.

Practice Test

SAT

Directions

- Work on just one section at a time.
- If you complete a section before the end of your allotted time, use the extra minutes to check your work on that section only. Do NOT use the time to work on another section.

Using Your Test Booklet

- No credit will be given for anything written in the test booklet. You may use the test booklet for scratch paper.
- You are not allowed to continue answering questions in a section after the allotted time has run out. This includes marking answers on your answer sheet that you previously noted in your test booklet.
- You are not allowed to fold pages, take pages out of the test booklet, or take any pages home.

Answering Questions

- Each answer must be marked in the corresponding row on the answer sheet.
- Each bubble must be filled in completely and darkly within the lines.

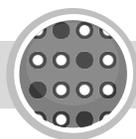
Correct ● Incorrect ○ ⊗ ⊘ ⊙ ⊕ ⊖ ⊗ ⊘

- Be careful to bubble in the correct part of the answer sheet.
- Extra marks on your answer sheet may be marked as incorrect answers and lower your score.
- Make sure you use a No. 2 pencil.

Scoring

- You will receive one point for each correct answer.
- Incorrect answers will NOT result in points deducted. Even if you are unsure about an answer, you should make a guess.

**DO NOT BEGIN THIS TEST
UNTIL YOUR PROCTOR TELLS YOU TO DO SO**



For printable answer sheets, please visit ivyglobal.com/study.

Section 1

1	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	12	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	23	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	34	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	45	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
2	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	13	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	24	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	35	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	46	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
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4	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	15	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	26	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	37	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	48	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
5	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	16	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	27	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	38	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	49	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
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8	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	19	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	30	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	41	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	52	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
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Section 2

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Section 3 (No-Calculator)

1	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	4	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	7	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	10	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	13	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
2	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	5	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	8	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	11	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	14	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
3	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	6	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	9	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	12	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	15	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>

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 (Calculator)

1	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	7	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	13	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	19	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	25	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
2	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	8	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	14	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	20	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	26	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
3	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	9	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	15	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	21	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	27	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
4	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	10	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	16	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	22	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	28	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
5	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	11	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	17	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	23	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	29	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
6	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	12	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	18	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	24	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	30	A B C D <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>

Section 4 (Continued)

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

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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 5 (Optional)

Important: Use a No. 2 pencil. Write inside the borders.

You may use the space below to plan your essay, but be sure to write your essay on the lined pages. Work on this page will not be scored.

Use this space to plan your essay.

Section 1

Reading Test

65 MINUTES, 52 QUESTIONS

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

DIRECTIONS

Every passage or paired set of passages is accompanied by a number of questions. Read the passage or paired set of passages, then use what is said or implied in what you read and in any given graphics to choose the best answer to each question.

Questions 1-10 are based on the following passage.

The following is adapted from E.M. Forster, *A Room With a View*. Originally published in 1908.

A few days after the engagement was announced Mrs. Honeychurch made Lucy and her fiancé come to a little garden party in the neighborhood, for naturally she wanted to show people that her daughter was marrying a presentable man.

Cecil was more than presentable; he looked distinguished, and it was very pleasant to see his slim figure keeping step with Lucy, and his long, fair face responding when Lucy spoke to him. People congratulated Mrs. Honeychurch, which is, I believe, a social blunder, but it pleased her, and she introduced Cecil rather indiscriminately to some stuffy dowagers.

At tea a misfortune took place: a cup of coffee was upset over Lucy's figured silk, and though Lucy feigned indifference, her mother feigned nothing of the sort but dragged her indoors to have the frock treated by a sympathetic maid. They were gone some time, and Cecil was left with the dowagers. When they returned he was not as pleasant as he had been.

"Do you go to much of this sort of thing?" he asked when they were driving home.

"Oh, now and then," said Lucy, who had rather enjoyed herself.

"Is it typical of country society?"

"I suppose so. Mother, would it be?"

"Plenty of society," said Mrs. Honeychurch, who was trying to remember the hang of one of the dresses.

Seeing that her thoughts were elsewhere, Cecil bent towards Lucy and said: "To me it seemed perfectly appalling, disastrous, portentous."

"I am so sorry that you were stranded."

"Not that, but the congratulations. It is so disgusting, the way an engagement is regarded as public property—a kind of waste place where every outsider may shoot his vulgar sentiment. All those old women smirking!"

"One has to go through it, I suppose. They won't notice us so much next time."

"But my point is that their whole attitude is wrong. An engagement—horrid word in the first place—is a private matter, and should be treated as such."

Yet the smirking old women, however wrong individually, were collectively correct. The spirit of the generations had smiled through them, rejoicing in the engagement of Cecil and Lucy because it promised the continuance of life on earth. To Cecil and Lucy it promised something quite different—personal love. Hence Cecil's irritation and Lucy's belief that his irritation was just.

"How tiresome!" she said. "Couldn't you have escaped to tennis?"

"I don't play tennis—at least, not in public. The neighborhood is deprived of the romance of me

CONTINUE

being athletic. Such romance as I have is that of the Inglese Italiano.”

“Inglese Italiano?”

“È un diavolo incarnato! You know the proverb?”

60 She did not. Nor did it seem applicable to a young man who had spent a quiet winter in Rome with his mother. But Cecil, since his engagement, had started to affect a cosmopolitan naughtiness which he was far from possessing.

65 “Well,” said he, “I cannot help it if they do disapprove of me. There are certain irremovable barriers between myself and them, and I must accept them.”

70 “We all have our limitations, I suppose,” said wise Lucy.

“Sometimes they are forced on us, though,” said Cecil, who saw from her remark that she did not quite understand his position.

“How?”

75 “It makes a difference doesn’t it, whether we fully fence ourselves in, or whether we are fenced out by the barriers of others?”

She thought a moment, and agreed that it did make a difference.

80 “Difference?” cried Mrs. Honeychurch, suddenly alert. “I don’t see any difference. Fences are fences, especially when they are in the same place.”

“We were speaking of motives,” said Cecil, on whom the interruption jarred.

85 “My dear Cecil, look here.” She spread out her knees and perched her card-case on her lap. “This is me. That’s Windy Corner. The rest of the pattern is the other people. Motives are all very well, but the fence comes here.”

90 “We weren’t talking of real fences,” said Lucy, laughing.

“Oh, I see, dear—poetry.”

1

It can reasonably be inferred from the passage that Mrs. Honeychurch

- A) thoroughly enjoys the company of Cecil.
- B) is an expert seamstress with a knack for dress-making.
- C) wishes to present an impressive image to polite society.
- D) is disinterested in attending the engagement party.

2

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

- A) Lines 1-5 (“A few ... man”)
- B) Lines 9-13 (“People ... dowagers”)
- C) Lines 18-19 (“They were ... dowagers”)
- D) Lines 27-29 (“Plenty of ... dresses”)

3

As used in line 37, “sentiment” most nearly means

- A) nostalgia.
- B) emotion.
- C) opinion.
- D) tenderness.

4

Which situation is most similar to the one described in lines 6-13?

- A) A war hero returning to his hometown
- B) A leader making concessions to his subjects
- C) A prized show dog being paraded before judges
- D) A criminal facing judgment in a court of law

CONTINUE 

5

The passage most strongly suggests that Cecil found the engagement party “appalling” (line 32) because

- A) he judged the other guests at the party to be uninteresting.
- B) he was angered by the intrusion into his relationship with Lucy.
- C) he prefers playing tennis to other forms of social interaction.
- D) he would rather communicate in Italian than in English.

6

As used in line 63, “affect” most nearly means

- A) cause.
- B) feign.
- C) influence.
- D) impress.

7

Lucy’s response to Cecil in line 74 primarily serves to

- A) show Lucy’s worldly sophistication compared to that of her fiancé.
- B) express Lucy’s resignation to the narrowness of country society.
- C) demonstrate Lucy’s growing resentment of the differences between Cecil’s outlook and hers.
- D) indicate Lucy’s willingness to hear out Cecil’s opinions.

8

Cecil brings up fences (lines 75-77) in order to

- A) highlight his feeling that he is different from others in the community.
- B) express his frustration at being excluded from polite society.
- C) demand greater respect for his desire for a secluded house.
- D) reveal an epiphany about the separations among human beings.

9

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

- A) Lines 42-43 (“An engagement ... such”)
- B) Lines 54-56 (“The neighborhood ... athletic”)
- C) Lines 66-68 (“There are ... them”)
- D) Lines 88-89 (“Motives are ... here”)

10

The comic effect of lines 85-92 comes from

- A) Lucy’s enjoyment of the spirited exchange between Cecil and Mrs. Honeychurch.
- B) Cecil’s growing irritation with Mrs. Honeychurch and Lucy’s opinions.
- C) Lucy’s teasing Cecil by pretending not to understand his point.
- D) Mrs. Honeychurch’s obliviousness and inattention to the conversation.



Questions 11-20 are based on the following passage and supplementary material.

The following is adapted from James Levine, *The Start of the Anthropocene*. Originally published in 2015.

Human beings are in the process of dramatically reshaping the Earth’s ecosystems. As far back as the 19th century, some scientists have noted that the current era is defined mainly by the impact of human activity. Now, there is an emerging consensus among Earth scientists that we have indeed entered a new period of geological time, the Anthropocene epoch.

Scientists who study the history of the Earth usually divide geological time according to major changes to the ecology and climate of the Earth. For instance, the Cambrian period, some five hundred million years ago, is distinguished by a sudden explosion in the diversity of life, including the emergence of the ancestors of many modern species. More recently, the Pleistocene epoch, which ended about ten thousand years ago, is notable for its glaciers that swept over much of the Earth. The new Anthropocene epoch would be distinguished from all earlier times in Earth’s history by the dramatic impact of human activity on the Earth.

Though Earth scientists debate exactly when the Anthropocene began, there is a clear consensus that human changes to the environment are real and extreme. For example, many life forms have become, and are becoming, extinct as a direct result of human activity. Some paleontologists thus argue that the human impact of the Anthropocene began at the end of the last Ice Age, around ten thousand years ago. The fossil record indicates that around that time, many large animals, like woolly mammoths and giant sloths, went extinct shortly after humans arrived in their ranges. Their sudden disappearance suggests that habitat destruction and overhunting by humans may have contributed to their demise. Indeed, many large animals, like elephants and gorillas, are endangered for those same reasons today.

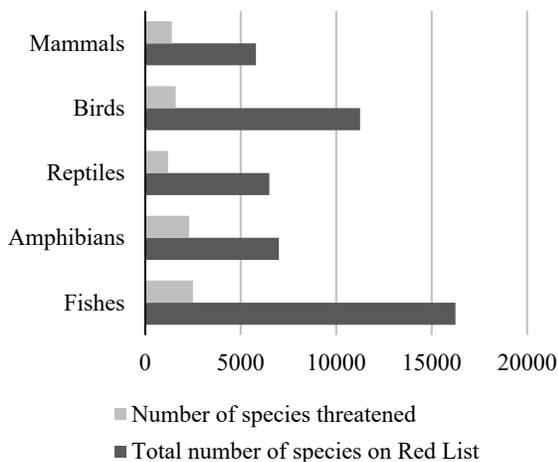
The pace of human-caused extinctions has only increased in the past several hundred years. The growth and spread of human populations, caused by

advances in seafaring technology and agriculture, has led to overexploitation of fragile ecosystems, introduction of invasive species, and pollution, causing many extinctions. Scientists have estimated the rate of extinction by studying the fossil record, monitoring existing species, and using statistical models to estimate the number of undiscovered species that have been lost. Estimates vary, but most scientists believe that diverse species are going extinct at hundreds or thousands of times the natural rate. Indeed, the International Union for the Conservation of Nature has found that, of species surveyed on its Red List of Threatened Species, about a fifth of all mammals and reptiles and nearly a third of amphibians are in danger of extinction. This ongoing, rapid loss of species has been described as a mass extinction, as severe as the event that wiped out the dinosaurs sixty-five million years ago. To some ecologists, this steep decline in biodiversity suggests that the Anthropocene epoch began in the 17th and 18th centuries, when the rate of extinction shot up dramatically.

Human activity is also altering the climate as a whole. Since the Industrial Revolution in the 18th and 19th centuries, humans have significantly altered the atmosphere by mining and burning fossil fuels such as coal, oil, and natural gas. Some byproducts of the use of these fuels, such as carbon dioxide, are greenhouse gases that trap solar energy in the Earth’s atmosphere. To assess the impact of these greenhouse gases on the Earth, scientists have had to investigate the history of the Earth’s climate. Ice cores, samples of ice layers that have trapped atmospheric chemicals over time, have supplied scientists with millennia of year-by-year information about greenhouse gas concentrations and atmospheric temperature. Evidence from ice cores clearly shows that the Industrial Revolution brought about a sudden jump in carbon dioxide in the atmosphere, along with an increase in temperatures. There is a scientific consensus that this ongoing rise in temperatures has resulted in warming of the oceans, rising sea levels, and more frequent extreme weather events. Thus, some climatologists propose that the Anthropocene’s onset occurred with the Industrial Revolution and its effects on Earth’s atmosphere.

CONTINUE 

Whenever the Anthropocene is judged to have begun, its impact is undeniable. Human activity has changed the face of the planet; the global ecosystem has been and is being reshaped, the composition of the atmosphere has been altered, and even weather patterns are changing in response to human activity. The consequences of these changes will affect life on Earth for millions of years to come, leaving a mark of human activity that will long outlive humanity itself.



The graph above shows the total number of species listed under any conservation status on the IUCN Red List by class, and the number of species listed as “threatened” or worse (including endangered and near-extinct species).

11

The main purpose of the passage is to

- A) respond to controversial claims made by rival scientists.
- B) argue for potential solutions to the problems posed by climate change.
- C) describe human impacts on the Earth’s environment.
- D) account for recent changes in global biodiversity.

12

The author’s attitude is best described as

- A) dejected.
- B) concerned.
- C) jaded.
- D) uncertain.

13

As used in line 13, “explosion” most nearly means

- A) shattering.
- B) catastrophe.
- C) growth.
- D) outburst.

14

The main rhetorical effect of lines 55-58 (“This ongoing ... ago”) is to

- A) suggest that the dinosaurs did not become extinct due to natural causes.
- B) stress the extreme nature of the current extinction event.
- C) imply that humans themselves are now in danger of extinction.
- D) emphasize humanity’s connections to earlier forms of life on earth.

15

Based on the passage, which choice best describes the relationship between carbon dioxide and ice cores?

- A) Carbon dioxide destroys ice cores, which are a major source of information.
- B) Ice cores remove carbon dioxide from the atmosphere, reducing its effects on the climate.
- C) Carbon dioxide is extracted from ice cores and used to fuel industrial processes.
- D) Ice cores can be studied to track changes in atmospheric carbon dioxide levels.

16

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

- A) Lines 66-68 (“Some byproducts ... Earth”)
- B) Lines 71-75 (“Ice ... temperature”)
- C) Lines 79-82 (“There is ... events”)
- D) Lines 92-94 (“The consequences ... itself”)

17

As used in line 93, “mark” most nearly means

- A) grade.
- B) symbol.
- C) target.
- D) indication.

18

The passage most strongly suggests that

- A) some species are going extinct before being discovered by humans.
- B) all extinctions in the last century have resulted from irresponsible human activity.
- C) modern extinctions have reversed the biodiversity generated in the Cambrian period.
- D) the recent increase in the extinction rate was caused solely by natural climate change.

19

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

- A) Lines 11-15 (“For instance ... species”)
- B) Lines 29-32 (“The fossil ... ranges”)
- C) Lines 44-48 (“Scientists ... lost”)
- D) Lines 87-91 (“Human ... activity”)

20

Based on the passage and graph, which of the following statements can reasonably be inferred?

- A) Birds are less susceptible to human threats because they can fly to new habitats.
- B) Of the species on the Red List, amphibian species are more likely to be threatened than species of any other class.
- C) mammals are more sensitive to human impacts on the environment than any other class of animal.
- D) about 2500 species of fish have recently gone extinct.


 CONTINUE

Questions 21-31 are based on the following passage.

The following is adapted from Newton N. Minow, "Television and the Public Interest." Originally delivered in 1961. Minow was the chairman of the Federal Communications Commission, which regulates television and other forms of communication in the United States, and was speaking to television executives.

Certainly, I hope you will agree that ratings* should have little influence where children are concerned. The best estimates indicate that during the hours of 5 to 6 PM sixty percent of your audience is composed of children under twelve. And most young children today, believe it or not, spend as much time watching television as they do in the schoolroom.

I repeat—let that sink in, ladies and gentlemen—most young children today spend as much time watching television as they do in the schoolroom. It used to be said that there were three great influences on a child: home, school, and church. Today, there is a fourth great influence, and you ladies and gentlemen in this room control it.

If parents, teachers, and ministers conducted their responsibilities by following the ratings, children would have a steady diet of ice cream, school holidays, and no Sunday school. What about your responsibilities? Is there no room on television to teach, to inform, to uplift, to stretch, to enlarge the capacities of our children? Is there no room for programs deepening their understanding of children in other lands? Is there no room for a children's news show explaining something to them about the world at their level of understanding? Is there no room for reading the great literature of the past, for teaching them the great traditions of freedom? There are some fine children's shows, but they are drowned out in the massive doses of cartoons, violence, and more violence. Must these be your trademarks? Search your consciences and see if you cannot offer more to your young beneficiaries whose future you guide so many hours each and every day.

Now what about adult programming and ratings? You know, newspaper publishers take popularity

ratings too. And the answers are pretty clear: it is almost always the comics, followed by advice to the lovelorn columns. But, ladies and gentlemen, the news is still on the front page of all newspapers; the editorials are not replaced by more comics; and the newspapers have not become one long collection of advice to the lovelorn. Yet newspapers do not even need a license from the government to be in business; they do not use public property. But in television, where your responsibilities as public trustees are so plain, the moment that the ratings indicate that westerns are popular there are new imitations of westerns on the air faster than the old coaxial cable could take us from Hollywood to New York. Broadcasting cannot continue to live by the numbers. You and I both know that the rating services themselves would agree.

Let me make clear that what I am talking about is balance. I believe that the public interest is made up of many interests. There are many people in this great country and you must serve all of us. You will get no argument from me if you say that, given a choice between a western and a symphony, more people will watch the western. I like westerns too, but a steady diet for the whole country is obviously not in the public interest. We all know that people would more often prefer to be entertained than stimulated or informed. But your obligations are not satisfied if you look only to popularity as a test of what to broadcast. You are not only in show business; you are free to communicate ideas as well as relaxation.

And as Governor Collins said to you yesterday when he encouraged you to editorialize—as you know the FCC has now encouraged editorializing for years—we want you to do this; we want you to editorialize, take positions. We only ask that you do it in a fair and a responsible manner. Those stations that have editorialized have demonstrated to you that the FCC will always encourage a fair and responsible clash of opinion.

*Ratings refer to the size of the audience for a given show, and are used to measure a show's popularity.

CONTINUE 

21

The passage primarily focuses on

- A) the poor taste and habits of the American people.
- B) the unhealthy effects television has on children.
- C) the responsibilities of broadcasters to the public.
- D) the failure of newspapers to educate the populace

22

The main purpose of the passage is to

- A) compare and contrast various television show genres.
- B) call for higher standards in television programming.
- C) denounce television as a harmful pastime for children.
- D) note that other forms of media are as important as television.

23

The author primarily seeks to convince his audience of his point by

- A) suggesting that television could be incorporated into school curricula.
- B) mentioning the profits to be gained from attracting young audiences.
- C) raising fears that newspapers are becoming tough competition for television.
- D) making appeals to morality and a sense of civic obligation.

24

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

- A) Lines 5-8 (“And most ... schoolroom”)
- B) Lines 31-34 (“Search your ... day”)
- C) Lines 43-45 (“Yet newspapers ... property”)
- D) Lines 62-64 (“We all ... informed”)

25

The author mentions the potential consequences of “following the ratings” (line 17) in order to

- A) suggest that children do not necessarily know what is best for them.
- B) imply that parents and teachers are sometimes overly restrictive.
- C) prove that television should educate children about healthy diets.
- D) lament the negligence of parents and teachers during his era.

26

As used in line 18, “steady” most nearly means

- A) motionless.
- B) firm.
- C) consistent.
- D) rooted.

CONTINUE

27

In the fourth paragraph (lines 35-53), the author states that, unlike television networks, newspapers

- A) can be easily transported and enjoyed anywhere.
- B) pander to their audiences in order to stay in business.
- C) require a license from the government to operate.
- D) emphasize information over entertainment.

28

The author suggests that television networks can improve their content by

- A) making an effort to air more westerns.
- B) consulting the operators of the rating services.
- C) creating programming that informs and educates the public.
- D) airing shows that encourage adults rather than children to tune in.

29

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

- A) Line 35 (“Now what ... ratings”)
- B) Lines 52-53 (“You and ... agree”)
- C) Lines 57-60 (“You will ... western”)
- D) Lines 66-68 (“You are ... relaxation”)

30

As used in line 65, “satisfied” most nearly means

- A) convinced.
- B) fulfilled.
- C) sated.
- D) pleased.

31

Which of the following situations is most analogous to the situation presented in lines 28-31 (“There are ... violence”)?

- A) An enjoyable piece of music cannot be heard due to loud construction work nearby.
- B) A few healthy items at a buffet are surrounded by unhealthy, but tasty, options.
- C) An elected representative suppresses the viewpoints of her ideological opponent.
- D) A small number of protestors disrupt a large event taking place on a campus.

CONTINUE

Questions 32-42 are based on the following passage.

Passage 1 is adapted from Laurel Perkins, “The Origins of Life on Earth.” ©2015 by Ivy Global. Passage 2 is adapted from James Levine, “Tracing Earth’s Origins Through the Universe.” ©2015 by James Levine.

Passage 1

The origins of life on Earth are shrouded in mystery. Scientists agree that life arose almost four billion years ago from non-living chemicals, a process called abiogenesis. However, many competing hypotheses exist to explain how this might have happened. Because Earth is the only planet in the universe known to harbor life, studying the unique chemical environment of early Earth can allow us to develop a deeper understanding of the causes of abiogenesis.

During the earliest phase of Earth’s existence, the Hadean eon, conditions on the newly formed planet were very different from those found today. The young Earth was intensely hot, with highly active volcanoes and frequent meteorite impacts. Unlike today’s atmosphere, which is predominantly made of nitrogen and oxygen, the Hadean atmosphere is thought to have consisted mainly of carbon dioxide, hydrogen, water vapor, and volcanic gases. Thanks to the intense pressure of this thick atmosphere, liquid water oceans probably existed despite the boiling temperatures on Earth’s surface.

Although these conditions would be totally inhospitable to modern life, this unique environment could have produced many of the building blocks of life. Scientists have discovered this by replicating the conditions of the Hadean eon in laboratories. The earliest and most famous of these experiments, conducted by Stanley Miller in the 1950s, involved passing electricity through the particular mixture of gases in the early Earth’s atmosphere. Miller found that electricity, such as that delivered by lightning strikes, could have triggered chemical reactions in the Hadean atmosphere, producing amino acids, the building blocks of proteins, as well as the nitrogenous bases and sugars that make up nucleic acids such as DNA and RNA. More recent experiments using

ultraviolet light, a major component of sunlight, have found that it too could have caused organic compounds to form on Earth during the Hadean eon.

This has led to speculation on the part of many scientists that these molecules, once synthesized in the early Earth’s oceans, could have become organized into self-replicating structures that developed into life as we know it. Nucleic acids, for instance, can both carry genetic information and catalyze chemical reactions; simple nucleic acids thus could have replicated themselves and even created proteins from amino acids, like modern life forms do. Indeed, many scientists now believe that today’s life descends from an “RNA world” that formed in this way.

Passage 2

It turns out that the conditions for life to arise may actually be quite common throughout the universe. At the very least, the building blocks of life as we know it—amino acids, simple sugars, and other organic compounds—seem to show up wherever we point our telescopes.

For instance, organic molecules form quite readily in the clouds of dust and gas that hang between and around stars. A number of studies have found that certain organic molecules, called PAHs, may be present in the nebulae and star systems all over the universe. These molecules, made up of rings of carbon and hydrogen, have structures that might allow them to help RNA strands self-assemble in the oceans of planets; NASA scientists estimate that these molecules contain as much as 20 percent of the universe’s carbon and may have formed shortly after the universe began.

Scientists have also found organic molecules closer to home, within our own galaxy and Solar System. In the massive nursery of new star systems at the heart of the Milky Way, a simple form of sugar has been detected. The formation of this sugar is a key step in the creation of the more complex sugars in nucleic acids. This suggests that the raw materials for nucleic acids, and perhaps other key components of life, might be commonly incorporated into forming

CONTINUE 

80 star systems. This certainly seems to have happened
around our Sun. A number of Solar System bodies,
such as the Murchison meteorite, have crashed to
Earth bearing nitrogenous bases and amino acids that
were formed in space, and comets currently orbiting
85 our Sun have been found to carry amino acids as
well. If the early Earth was seeded with organic
molecules, either during its formation or by meteorite
and comet impacts, it is plausible that this could have
paved the way for abiogenesis to take place soon
90 thereafter.

95 Taken together, this evidence suggests that the
building blocks of life appear throughout the Milky
Way galaxy and elsewhere in the universe. Earth's
status as the cradle of life may not be so special after
all.

32

The main purpose of Passage 1 is to

- A) argue that Earth is the only planet in the universe that could support life.
- B) explain how the conditions of the early Earth could have given rise to life.
- C) describe a period of Earth's history that is very different from the modern day.
- D) propose a method for creating artificial life in a laboratory.

33

As used in line 30, "particular" most nearly means

- A) fastidious.
- B) individual.
- C) detailed.
- D) specific.

34

The purpose of lines 37-40 ("More recent ... con") is primarily to

- A) refute the idea that lightning strikes are responsible for creating early organic compounds.
- B) emphasize the importance of the Sun to the origins of life.
- C) suggest an alternative energy source for the formation of organic compounds.
- D) propose that organic compounds may have originated in outer space.

35

Passage 1 suggests that many scientists believe that modern life descends from an "RNA world" (line 51) because

- A) RNA can perform some basic functions needed to sustain a living organism.
- B) RNA organisms would have been uniquely suited to the conditions of the Hadean eon.
- C) RNA molecules were rarely produced in Stanley Miller's experiments.
- D) RNA is more stable than other nucleic acids.

36

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

- A) Lines 15-19 ("Unlike today's ... gases")
- B) Lines 23-26 ("Although these ... life")
- C) Lines 31-37 ("Miller found ... RNA")
- D) Lines 47-50 ("simple nucleic acids ... do")


 CONTINUE

37

It can reasonably be inferred from Passage 2 that

- A) living organisms must have come to Earth from elsewhere in the universe.
- B) the environment of the early Earth would have destroyed organic compounds.
- C) our Solar System is unique in containing organic compounds.
- D) abiogenesis could have taken place when the universe was fairly young.

38

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

- A) Lines 55-58 (“At the ... telescopes”)
- B) Lines 64-70 (“These molecules ... began”)
- C) Lines 80-81 (“This certainly ... Sun”)
- D) Lines 91-93 (“Taken together ... universe”)

39

As used in line 60, “readily” most nearly means

- A) preparedly.
- B) easily.
- C) willingly.
- D) happily.

40

Based on Passage 2, which choice best describes the relationship between PAHs and RNA?

- A) PAHs can be combined to form RNA molecules in the presence of water.
- B) PAHs can provide support for the synthesis of RNA molecules.
- C) PAHs can only synthesize with the help of RNA.
- D) PAHs make the synthesis of RNA molecules possible only in deep space nebulae.

41

Based on the passages, both authors would agree with which of the following claims?

- A) Life arose on Earth from non-living organic compounds.
- B) Earth’s environment is uniquely conducive to the formation of organic compounds.
- C) Earth is certainly not the only planet on which life exists.
- D) Life on Earth could only have begun with an RNA world.

42

How would the author of Passage 2 most likely respond to the claim made in lines 6-10 (“Because Earth ... abiogenesis”) of Passage 1?

- A) Life probably developed in a distant nebula before arriving on Earth.
- B) Scientists do not know exactly what the early atmosphere of Earth was like.
- C) The chemical precursors of life can form in a wide variety of environments.
- D) Modern organisms would not have been able to survive during Earth’s Hadean eon.


 CONTINUE

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

This passage is adapted from James Levine, “Electoral Systems.” ©2015 by Ivy Global.

Democracies generally organize and carry out their elections in one of two ways. In first-past-the-post (FPTP) elections, voters choose individual candidates for office, and the candidate with the most votes wins. Elections in this kind of system are also called “winner-take-all.” In a democracy with proportional representation (PR), parties, not individuals, win seats in a legislature according to the percent of votes they receive in an election. Parties then form coalitions with each other to gain control of the government. Which system a country uses can greatly affect its politics; each has its merits and disadvantages.

These two types of election tend to foster very different styles of political debate. First-past-the-post elections tend to lead to more moderate political discussions at the national level. In elections for the presidency of the United States, for example, candidates need support from every part of the country. They cannot alienate large groups by expressing extreme views, so they must be moderate in order to have broad appeal. This moderation has its downsides, however. For one, uncommon opinions tend to be left out of public discussion. This can result in an elected government that may not fully represent citizens’ views. Extreme parties are also reduced to the role of spoilers in national elections: unable to win, but able to hurt larger parties with similar, but more moderate, viewpoints. During the US election for president in 1992, a far-right candidate, Ross Perot, drew votes from the sitting president, the center-right George H.W. Bush. This may have allowed the center-left candidate, Bill Clinton, to win the presidency.

Proportional representation, for better or worse, allows more extreme viewpoints to be represented at the national level. This can be a good thing, allowing

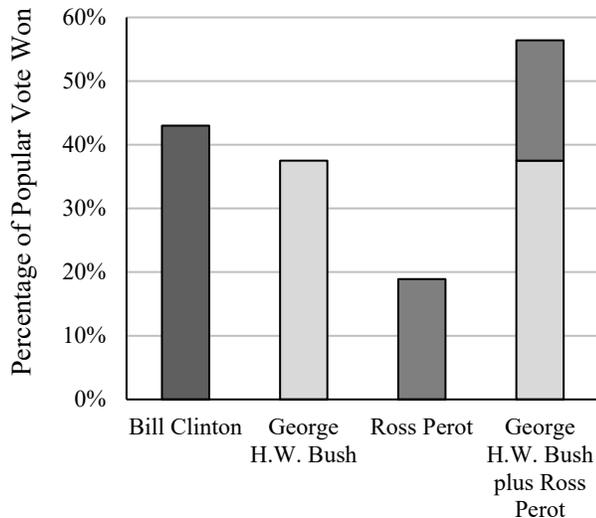
minority groups and small, single-issue parties to have a voice in government. However, these small parties can cause problems when they join ruling coalitions. They can force the government to focus on niche agendas by threatening to leave the coalition if ignored. In some cases, radical parties that actively oppose or threaten democracy, like fascist or communist parties, can gain seats in PR elections. This occurred most famously in Germany’s Weimar Republic in the 1930s, when democratic elections gave the Nazi Party the opportunity to take power.

Each electoral system also results in different levels of voter participation. First-past-the-post systems generally result in lower overall voter participation. This could be because the rules of FPTP elections discourage voters who support candidates or parties who are not likely to win. Because votes for a losing candidate count for nothing in an FPTP election, votes for opposition parties are effectively wasted. In elections for US Senate seats and the US presidency, for instance, many states are consistently won by candidates from one party. Opposition voters in these states have little reason to show up at the polls. However, some political scientists argue that because voters vote for specific candidates in FPTP elections, those elected officials are more personally accountable to the citizens that voted for them. This sense of accountability could lead to more citizen engagement between elections.

Proportional representation generally encourages higher levels of participation. Voters will be represented even if they are in the minority, so there are far fewer wasted votes in PR elections. On the other hand, voters in PR elections generally vote for parties rather than individuals. Because the parties appoint legislators to their seats, politicians may feel more accountable to their parties than to voters. This can lead officials to focus on within-party politics rather than the wishes of the people.

CONTINUE 

1992 US Election Outcomes



43

The passage primarily focuses on which of the following aspects of democracy?

- A) The advantages of democracy over other forms of governance
- B) The historical development of democratic ideals
- C) The potential drawbacks of democratic systems
- D) The electoral systems used in democratic nations

44

As used in line 20, “alienate” most nearly means

- A) isolate.
- B) divert.
- C) reject.
- D) offend.

45

Based on the passage, which choice best describes the relationship between proportional representation elections and political extremism?

- A) Proportional representation elections suppress extremism by making politicians accountable to the people.
- B) Proportional representation elections allow extremists to have more of a voice in government.
- C) Proportional representation elections permit extremist politicians to draw votes from mainstream parties.
- D) Proportional representation elections do not impact the political participation of extremist groups.

46

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

- A) Lines 6-9 (“In a democracy ... election”)
- B) Lines 26-29 (“Extreme ... viewpoints”)
- C) Lines 35-37 (“Proportional ... level”)
- D) Lines 72-74 (“On the other ... individuals”)

47

The author most likely mentions the 1992 US presidential election in lines 30-34 in order to

- A) lament the defeat of the author’s preferred candidate in said election.
- B) demonstrate the impact that spoilers can have on democratic elections.
- C) show how extreme candidates can win seats in first-past-the-post systems.
- D) question the conventional wisdom regarding US presidential elections.

CONTINUE 

48

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

- A) Lines 24-26 (“This can ... views”)
- B) Lines 26-29 (“Extreme parties ... viewpoints”)
- C) Lines 53-58 (“This could ... wasted”)
- D) Lines 62-66 (“However ... for them”)

49

As used in line 67, “engagement” most nearly means

- A) betrothal.
- B) appointment.
- C) involvement.
- D) conflict.

50

Which situation is most similar to the one described in lines 74-78 (“Because the ... people”)?

- A) A councilman answers numerous questions from citizens at a town meeting.
- B) A CEO answers to her company’s board of directors, not its shareholders.
- C) A scientist submits a research paper for review by his colleagues.
- D) A company looks at consumer trends to make decisions about future products.

51

It can reasonably be inferred from the passage and graphic that

- A) A candidate can win the US presidency without earning the majority of votes.
- B) Ross Perot would have won the 1992 election had George H.W. Bush not been a candidate.
- C) Spoilers are typically the deciding factor in US presidential elections.
- D) Bill Clinton’s performance in the 1992 election was solely due to Ross Perot’s candidacy.

52

Information from the graph best supports which of the following statements?

- A) Perot would have won the popular vote if he had doubled his percentage by drawing votes away from Bush.
- B) Bush would have won the popular vote if he had taken 10% of the total votes away from Perot.
- C) Clinton could have won more votes if Perot had not run in the election.
- D) Fewer votes went to Clinton and Bush combined than went to Bush and Perot combined.

STOP

If you complete this section before the end of your allotted time, you may check your work on this section only. Do NOT use the time to work on another section.

Section 2

Writing and Language Test

35 MINUTES, 44 QUESTIONS

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

DIRECTIONS

Every passage comes with a set of questions. Some questions will ask you to consider how the writer might revise the passage to improve the expression of ideas. Other questions will ask you to consider correcting potential errors in sentence structure, usage, or punctuation. There may be one or more graphics that you will need to consult as you revise and edit the passage.

Some questions will refer to a portion of the passage that has been underlined. Other questions will refer to a particular location in a passage or ask that you consider the passage in full.

After you read the passage, select the answers to questions that most effectively improve the passage's writing quality or that adjust the passage to follow the conventions of standard written English. Many questions give you the option to select "NO CHANGE." Select that option in cases where you think the relevant part of the passage should remain as it currently is.

Questions 1-11 are based on the following passage.

Disputes in Ancient Greek Philosophy

People often speak of “the philosophy of the ancient Greeks” or “what the Greeks believed,” as though they had a single shared opinion. **1** However, ancient Greek philosophers held a great diversity of opinions, founding many schools of thought that shaped the development of culture in the West and beyond.

1

- A) NO CHANGE
- B) Meanwhile, ancient
- C) Ancient
- D) Consequently, ancient

CONTINUE 

2 The thinker Epicurus developed Epicureanism in the 4th century BCE. Epicurus and his followers challenged 3 humdrum beliefs of the time by claiming that all events unfolded according to physical rules, without any intervention from the gods—but with occasional random swerves of atoms. This stance was highly controversial in Greece’s polytheistic society. Epicurus also stated that people could achieve happiness by avoiding suffering and enjoying natural pleasures, which led many to perceive him as endorsing self-indulgence. As a result, the word “epicurean” is used to this day to describe someone who enjoys luxury and decadence, especially in the realm of fine dining.

The most famous rivals of the Epicureans were the Stoics. The Stoic school of thought was founded in the 4th century BCE by the 4 philosopher Zeno. However, its most well-known follower, the Roman emperor Marcus Aurelius, lived and wrote much later, in the 2nd century CE. The Stoics, unlike the Epicureans, believed that a 5 divine will they called “the Logos” influenced all events. Thus, the Stoics thought that people could not control their fates and so should cultivate self-control and composure, even in the face of hardship. Because of these teachings, the word “stoic” has now come to mean “calm,” “steady,” or even “emotionless.”

2

Which choice most effectively conveys the main topic of this paragraph?

- A) One of the foremost of these philosophical movements was Epicureanism.
- B) Of course, thinkers in other parts of the world also developed many great philosophies.
- C) These schools often argued with one another, each claiming to have the best doctrine.
- D) Many of these philosophers held positions that Greek society considered unpopular and controversial.

3

- A) NO CHANGE
- B) routine
- C) mundane
- D) conventional

4

- A) NO CHANGE
- B) philosopher Zeno, however, its most
- C) philosopher Zeno but its most
- D) philosopher Zeno. Though its most

5

- A) NO CHANGE
- B) divine will, they called
- C) divine will: they called
- D) divine will—they called


 CONTINUE

[1] The Cynics, another group of philosophers with roots in 4th century BCE Greece, held views similar to **6** the Stoics. [2] For instance, the best-known Cynic, Diogenes of Sinope, lived in a large jar in the marketplace of Athens, begged and scavenged for food, and mocked **7** well-respected public figures who were held in high esteem. [3] They emphasized independence, however, claiming that desires for wealth and social power clouded the mind. [4] Only if one gave up the pursuit of these desires, they said, could **8** you live a virtuous life. [5] The Cynics thus chose to live without possessions or status and rejected social norms. [6] The Cynics' distrust of societal institutions and authority has led to the word "cynical" being used to describe people who doubt the motivations of others and criticize society. **9**

6

- A) NO CHANGE
- B) those Stoics.
- C) Stoics.
- D) those of the Stoics.

7

- A) NO CHANGE
- B) well-respected public figures of high esteem
- C) esteemed public figures
- D) respected public figures of esteem

8

- A) NO CHANGE
- B) one live
- C) they live
- D) he or she live

9

For the sake of the cohesion of this paragraph, sentence 2 should be placed

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



Greek philosophy has had a profound influence on culture worldwide. Alexander the Great's conquest carried these ideas across the Middle East and Asia, bringing them into contact with many other

10 cultures in the Middle East, the frugal ideals from Cynicism influenced early Christians, leading some to give up their possessions to live in poverty in the desert.

11 Greek philosophy continues to influence academics, students, and citizens today.

10

- A) NO CHANGE
- B) cultures. In the Middle East. The
- C) cultures. In the Middle East, the
- D) cultures in the Middle East the

11

At this point, the writer wants to expand on the idea of Greek ideas spreading through the Middle East and Asia. Which choice best accomplishes this goal?

- A) In the Judeo-Christian tradition, the desert has long been associated with religious experience.
- B) In India and Central Asia, Stoicism and Buddhism may have exchanged ideas about the importance of self-control and tranquility.
- C) Indeed, Christianity quickly spread beyond the Middle East, expanding throughout the Roman empire and eventually becoming its official religion.
- D) Still, most people today would probably not say they are cynical.

**CONTINUE**

Questions 12-22 are based on the following passage.

Genetically Modified Crops and the Future of Agriculture

For millennia, humans have altered the genes of the plants we eat. For as long as agriculture has existed, we have selectively cross-bred plants to raise crops with more desirable traits. Over the course of centuries, we have gradually improved our plant stocks and our breeding techniques. In recent decades, however, genetic engineering techniques that create genetically modified (GM) crops have **12** unconditionally accelerated the process of developing new and better crops. At the same time, these techniques have raised concerns and spurred controversy.

Since the 1980s, scientists have developed several new methods to create GM crops. Scientists can modify plants by creating a ring of DNA called a **13** “plasmid,” then they insert the plasmid into plant cells. In some cases, scientists use bacteria that naturally transfer DNA to plant cells to **14** consign their own lab-created plasmids. Other scientists use “gene guns” to shoot microscopic gold particles coated with genetic material directly into target cells. All these methods create plants that contain carefully selected genes, turning conventional crops into **15** a genetically modified organism.

12

- A) NO CHANGE
- B) radically
- C) gradually
- D) instantly

13

- A) NO CHANGE
- B) plasmid. Whereupon, they insert
- C) “plasmid,” they insert
- D) “plasmid” and inserting

14

- A) NO CHANGE
- B) inflict
- C) deliver
- D) purvey

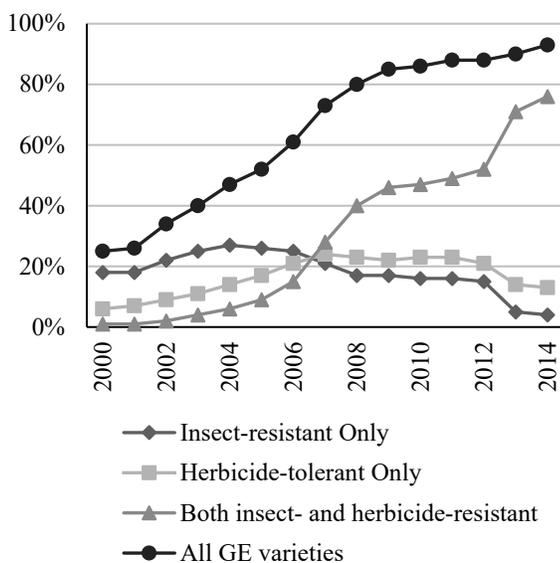
15

- A) NO CHANGE
- B) genetic modifications
- C) genetically modified organisms
- D) a genetic organism

CONTINUE

16 One of the main applications of this technology is the creation of plants that are resistant to **17** certain pests, diseases, and herbicides. These GM crops have become very popular in the United States because farmers don't need to spend as much money on pesticides. The U.S. Department of Agriculture estimates that **18** 93% of the corn planted in 2014 was both insect- and herbicide-resistant, up from 25% in 2000. Genetic modification can also enhance the nutritional value of some crops, which is

Genetically Modified (GM)
Corn Varieties as a Percentage of
All Corn Planted in the United States



16

Which choice most effectively conveys the main topic of this paragraph?

- A) There are a number of advantages to creating and planting GM crops.
- B) Farmers all over the world have enthusiastically embraced the use of GM crops.
- C) Most governments around the world have imposed regulations and controls on the use of this technology within their borders.
- D) As a result, scientists have much more control over the traits of GM crops than they would over conventionally bred varieties.

17

- A) NO CHANGE
- B) certain pests, and diseases, and herbicides
- C) certain pests; diseases; and herbicides
- D) certain: pests, diseases, and herbicides

18

Which of the following choices completes the sentence with accurate information from the graphic?

- A) NO CHANGE
- B) 76% of corn planted in 2014 was both insect- and herbicide-resistant, up from 1% in 2000.
- C) 13% of corn planted in 2014 was both insect- and herbicide-resistant, up from 6% in 2000.
- D) 18% of corn planted in 2014 was both insect- and herbicide-resistant, up from 4% in 2000.

CONTINUE 

especially beneficial for people in the developing world.

19 On the other hand, the GM crop “golden rice” was engineered so that it contains vitamin A, a necessary nutrient that many people in Africa and South Asia lack in their diets. To meet the needs of Earth’s rapidly growing population, some scientists are also experimenting with producing GM crops with above-average yields.

[1] Despite these potential benefits, many people view GM crops with suspicion. [2] Even though most scientists agree that food from GM crops is safe for human consumption, much of the general public fears that

20 they might pose unknown health risks. [3] Some conservation groups are also concerned about the effects that GM crops could have on the environment. [4] For instance, GM crops could outcompete wild plants, spawn toxin-resistant pests, or **21** to disrupt the natural food chain. [5] Clearly, we must carefully study and regulate GM crops to ensure that these risks do not outweigh the benefits. **22**

19

- A) NO CHANGE
- B) Meanwhile,
- C) For example,
- D) However,

20

- A) NO CHANGE
- B) this food
- C) human consumption
- D) those

21

- A) NO CHANGE
- B) natural food chain disruption.
- C) the natural food chain may be disrupted.
- D) disrupt the natural food chain.

22

To make this paragraph most logical, sentence 4 should be placed

- A) where it is now.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 5.


 CONTINUE

Questions 23-33 are based on the following passage.

Science in the Medieval Islamic World

The history of science as it is taught to most Western students **23** are tragically incomplete. In many schools, teachers promote the myth that little scientific progress occurred between the fall of the Roman Empire and the beginning of the Renaissance in Europe. It is true that European scholars made little progress **24** in the natural sciences during the Middle Ages. Scholars in the Islamic world made numerous significant scientific discoveries. These discoveries laid the groundwork for future breakthroughs and made Europe’s later Scientific Revolution possible.

Many important mathematical concepts were developed by Muslim thinkers. The Persian mathematician **25** al-Khwarizmi—who worked in the 9th century CE, developed new methods for solving linear and quadratic equations. In fact, his name gave rise to the word “algorithm,” a term used in modern mathematics and computer science to refer to a step-by-step method of **26** calculation and the term “algebra,” from the Arabic “al-jabr,” also comes from his work. He also popularized the Hindu-Arabic numerals that have become the most common way of writing numbers around the world today.

23

- A) NO CHANGE
- B) being
- C) is
- D) am

24

Which choice best combines the underlined sentences?

- A) in the natural sciences during the Middle Ages, and scholars in the Islamic world
- B) in the natural sciences during the Middle Ages: thus, scholars in the Islamic world
- C) in the natural sciences during the Middle Ages, but scholars in the Islamic world
- D) in the natural sciences during the Middle Ages: scholars in the Islamic world

25

- A) NO CHANGE
- B) al-Khwarizmi, who worked in the 9th century CE developed
- C) al-Khwarizmi, who worked in the 9th century CE—developed
- D) al-Khwarizmi, who worked in the 9th century CE, developed

26

- A) NO CHANGE
- B) calculation. The term
- C) calculation, also the term
- D) calculation, the term


 CONTINUE

[1] Muslim scientists also made important advances in the theory and practice of medicine. [2] For instance, the Persian doctor al-Razi revolutionized how doctors diagnosed disease. [3] In addition to this work on diagnosis, he pioneered techniques to test the effectiveness of treatments. [4] In the 9th century CE, he wrote a comparison of smallpox and measles in an early form of the modern technique of differential diagnosis.

[5] Centuries before European doctors adopted the technique, al-Razi conducted a clinical trial to study

27 how effective the practice of bloodletting was as a treatment for meningitis. **28**

29 Throughout the medieval era, the dominant view among astronomers was the geocentric Ptolemaic model. This view held that the Earth was the center of the solar system and that the planets, Sun, and stars orbited around it.

27

- A) NO CHANGE
- B) the effectiveness of using bloodletting
- C) the effectiveness of bloodletting
- D) the effectiveness

28

For the sake of the logic and coherence of this passage, sentence 3 should be placed

- A) where it is now.
- B) after sentence 1.
- C) after sentence 4.
- D) after sentence 5.

29

Which choice most effectively conveys the main topic of the paragraph?

- A) On occasion, medieval Muslim scientists, like their later European counterparts, were opposed in their work by religious authorities.
- B) Muslim scientists were not afraid to challenge widely accepted scientific ideas in the areas of mathematics, medicine, or astronomy.
- C) The achievements of Muslim scientists were remarkable in light of their limited access to advanced equipment.
- D) Furthermore, Muslim astronomers made accurate observations and predictions which would fuel later discoveries.


 CONTINUE

Astronomers working at the Maragha observatory in Persia, noting inconsistencies between this **30** models predictions and actual observations, developed new equations in the 13th century CE to resolve the conflict. Though they only updated the Ptolemaic theory, several centuries later their mathematical innovations inspired Nicolaus Copernicus. **31** Copernicus ultimately proposed a heliocentric model of the solar system, with the Earth and other planets orbiting the Sun, which would revolutionize astronomy.

In all, thinkers in the Islamic world made enormous contributions to the development of science. Had they not preserved ancient knowledge and **32** elaborated on it with their own findings, scientific and technological development might be centuries behind where it is today.

33 Even so, the accomplishments of medieval Muslim scientists should be better known around the world. More effort should be made to inform students about these pioneers of science.

30

- A) NO CHANGE
- B) model's
- C) models'
- D) models's

31

Which of the following sentences, inserted here, most effectively supports the claim made in the previous sentence?

- A) It is not yet known how Copernicus found astronomy texts from the Muslim world.
- B) Copernicus faced many obstacles from Christian religious authorities after he proposed his heliocentric theory.
- C) Copernicus's equations describing planetary motion are clearly based on the work of al-Tusi, a Maragha astronomer.
- D) Copernicus was almost certainly not able to read Persian or Arabic writings himself.

32

- A) NO CHANGE
- B) elaborated with
- C) elaborated for
- D) elaborated to

33

- A) NO CHANGE
- B) For most people,
- C) Afterward,
- D) For this reason,


 CONTINUE

Questions 34-44 are based on the following passage.

The Expanding Roles of Dietitians and Nutritionists

Dietitians are nutrition experts who help people plan healthy diets. Using their special knowledge and skills, dietitians ensure that their clients and patients eat nutritious foods and **34** living lifestyles that will help them be fit and healthy. Dietitians work in different settings depending on their specialty.

35 Some patients have medical conditions, like **36** the disorder known as celiac disease and high blood pressure, that impose dietary restrictions. They need help designing a healthy and varied diet that won't make **37** them sick. Other patients may simply need help selecting foods that promote good health. Elderly patients, for example, may need a diet that supports strong bones. Additionally, patients who have had surgery often experience a loss of appetite. They may need help to ensure that they are eating enough healthy food while they recover.

34

- A) NO CHANGE
- B) live
- C) to live
- D) lived

35

Which choice most effectively conveys the main topic of this paragraph?

- A) In most states, dietitians must meet certain licensure requirements before they can work in health care facilities.
- B) Clinical dietitians work with patients in hospitals and other health care facilities.
- C) Dietitians sometimes work in health care facilities; however, they are not doctors.
- D) Dietitians may offer specialized advice to some clients, but also agree on some broad rules; for instance, most people should avoid sugary soda.

36

- A) NO CHANGE
- B) the disorder of celiac disease
- C) celiac disease
- D) celiac disease, which limits dietary choices,

37

- A) NO CHANGE
- B) one
- C) us
- D) you

CONTINUE

Other dietitians work outside of health care settings. Community dietitians work to encourage public health. They may visit schools to educate children on good nutrition or teach classes for adults living in **38** communities, with poor access to healthy groceries and fresh food. Sports dietitians collaborate with clients to help **39** him eat right to achieve their athletic goals. Research dietitians work at universities, where they study the effects of nutrients and diets on the body.

Aspiring dietitians usually earn a bachelor's degree in a field like biology, anatomy, or nutrition. **40** Regardless, many dietitians go on to earn master's degrees in a subfield. This education helps them **41** learn a lot of stuff about biology and chemistry to better understand the effects that nutrients can have on overall health. Dietitians must also **42** compliment this knowledge with good communication skills, since many interact one-on-one with patients or speak publicly to large groups.

38

- A) NO CHANGE
- B) communities; with poor access
- C) communities with poor access
- D) communities. With poor access

39

- A) NO CHANGE
- B) them
- C) her
- D) us

40

- A) NO CHANGE
- B) In addition,
- C) For example,
- D) Certainly,

41

Which of the following choices is most consistent with the style of the passage as a whole?

- A) NO CHANGE
- B) get really knowledgeable about
- C) develop a strong knowledge of
- D) read up on

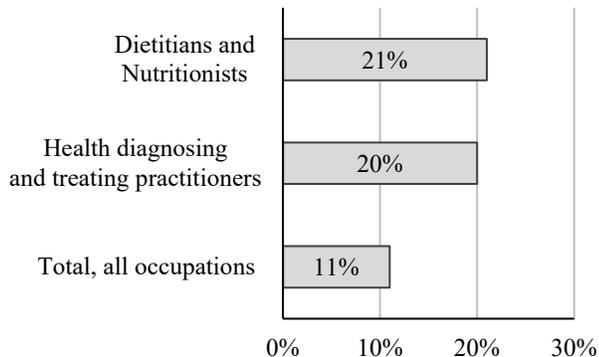
42

- A) NO CHANGE
- B) complement
- C) condescend
- D) complicate


 CONTINUE

[1] There will probably be a high demand for dietitians in the coming years. [2] As the “baby boomer” generation of the United States ages, dietitians will play an important role in ensuring the health of the growing number of elderly Americans. [3] In addition, as the U.S. works to address its obesity epidemic, dietitians will be vital in treating and preventing obesity by helping Americans develop healthier diets. [4] By promoting proper nutrition, dietitians can help the “boomers” avoid some of the health problems linked with aging. [5] For these and other reasons, the U.S. Bureau of Labor Statistics predicts **43** a 20% increase in the number of dietitians and nutritionists by 2022. **40**

Dietitians and Nutritionists
Percent change in employment, projected
2012-2022



43

- A) NO CHANGE
- B) an 11% increase in the number of dietitians and nutritionists
- C) that 21% of all workers will be dietitians or nutritionists
- D) a 21% increase in the number of dietitians and nutritionists

44

For the sake of the cohesion of this paragraph, sentence 4 should be placed

- A) where it is now.
- B) after sentence 1.
- C) after sentence 2.
- D) after sentence 5.

STOP

If you complete this section before the end of your allotted time, you may check your work on this section only. Do NOT use the time to work on another section.

Section 3



Math Test – No Calculator

25 MINUTES, 20 QUESTIONS

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

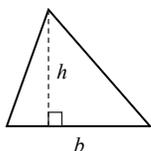
DIRECTIONS

Questions **1-15** ask you to solve a problem, select the best answer among four choices, and fill in the corresponding circle on your answer sheet. Questions **16-20** ask you to solve a problem and enter your answer in a grid provided on your answer sheet. There are detailed instructions on entering answers into the grid before question 16. You may use your test booklet for scratch work.

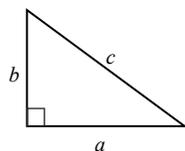
NOTES

1. You **may not** use a calculator.
2. Variables and expressions represent real numbers unless stated otherwise.
3. Figures are drawn to scale unless stated otherwise.
4. Figures lie in a plane unless stated otherwise.
5. The domain of a function f is defined as the set of all real numbers x for which $f(x)$ is also a real number, unless stated otherwise.

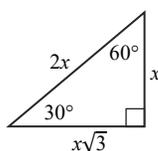
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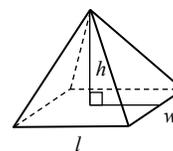
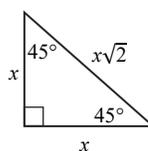
$$A = \frac{1}{2}bh$$



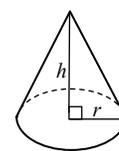
$$a^2 + b^2 = c^2$$



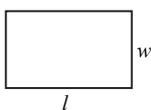
Special Triangles



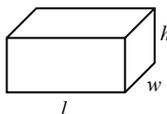
$$V = \frac{1}{3}lwh$$



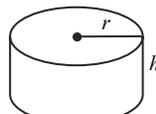
$$V = \frac{1}{3}\pi r^2 h$$



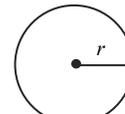
$$A = lw$$



$$V = lwh$$

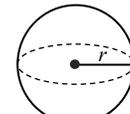


$$V = \pi r^2 h$$



$$A = \pi r^2$$

$$C = 2\pi r$$



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

There are 360° in a circle.

The sum of the angles in a triangle is 180° .

The number of radians of arc in a circle is 2π .

CONTINUE



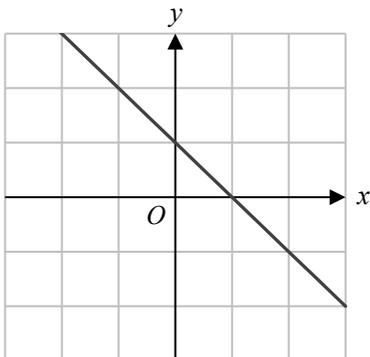
1

$$20 + 0.1t$$

The expression above represents the amount, in dollars, that a phone company charges per month for their texting service, where t represents the number of text messages the customer sends. What is the meaning of the number 20 in this expression?

- A) Every text message that the customer sends costs 20 cents.
- B) The customer can send 20 text messages at no cost, after which text messages cost 10 cents each.
- C) The customer must pay 20 dollars per month in addition to a charge for each text message sent.
- D) The customer will pay exactly 20 dollars each month.

2



Which of the following equations could describe the function shown above?

- A) $y = x + 2$
- B) $y = x - 2$
- C) $y = -x + 2$
- D) $y = -x - 2$

3

$$(3x + 2)(5x + 1) = ax^2 + bx + 2$$

Given the equation above, what is the value of $a - b$?

- A) 2
- B) 8
- C) 22
- D) 28

4

Leo is manufacturing rulers that should be 1 meter in length. If a ruler differs from the expected length by more than 1 millimeter, he needs to throw it away. If x represents the length of a ruler in meters, what absolute value inequality is true for the rulers that Leo does NOT throw away?

- A) $|x - 1| \leq 0.01$
- B) $|x - 1| \leq 0.001$
- C) $|x - 1| \geq 0.01$
- D) $|x - 1| \geq 0.001$



5

In the Ostwald Process, 4 molecules of ammonia and 5 molecules of oxygen react to produce 4 molecules of nitric oxide and 6 molecules of water. Which of the following equations correctly models the relationship between the number of molecules of nitric oxide, n , and the number of molecules of water, w , produced by the reaction?

- A) $2n = 3w$
- B) $3n = 2w$
- C) $5n = 4w$
- D) $4n = 5w$

6

$$4n(n + 8) = 36$$

What is the product of the two solutions to the above equation?

- A) -12
- B) -9
- C) 0
- D) 9

7

$$\sqrt{x+1} = 6$$

What value of x satisfies the equation above?

- A) 5
- B) 6
- C) 35
- D) 36

8

$$2x + 1 \geq 9$$

Which of the following number lines represents the solution set to the above inequality?

- A) 
- B) 
- C) 
- D) 



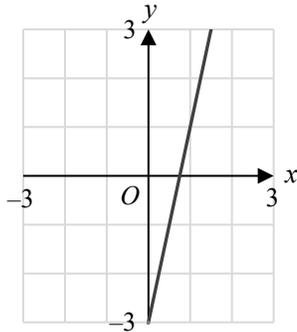
9

$$f(x) = 2x - 1$$

The function $g(x)$ is represented by a line that is perpendicular to the line $f(x)$, which is defined above. If $(0, 4)$ lies on the line $g(x)$, at what point do $f(x)$ and $g(x)$ intersect?

- A) $(0, -1)$
- B) $(1, 1)$
- C) $(2, 3)$
- D) $(3, 2)$

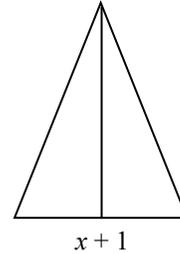
10



The above graph represents the function $f(x) = 4x - 3$. If $f(a + 4) = 5$, what is the value of a ?

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

11



The triangle above has an area of $x^2 - x - 2$ and a base length of $x + 1$. What is the height of the triangle in terms of x ?

- A) $\frac{1}{2}(x - 2)$
- B) $x - 2$
- C) $2(x - 2)$
- D) $(x - 2)(x + 1)^2$

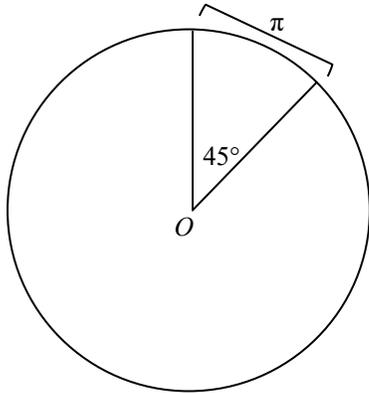
12

Which of the following is equivalent to $3^{x-6} \times 9^2 + 3^6$?

- A) 3^{x+2}
- B) 3^{x+4}
- C) $3^{x-2} + 3^6$
- D) $3^x + 3^6$



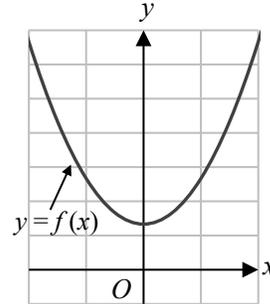
13



Graham cuts a slice of pie for himself, as shown in the figure above. If Graham's slice has π inches of exterior crust and O is the center of the circle, as indicated, what is the radius of the pie in inches?

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

14



Which of the following equations could define the function $f(x)$, as shown in the graph above?

- A) $f(x) = x^2 + 4$
- B) $f(x) = x^2 - 4$
- C) $f(x) = (x - 4)^2$
- D) $f(x) = (x + 4)^2$

15

$$\frac{15x^2 - 27x - 6}{x - 2}$$

Which of the following is equivalent to the expression above?

- A) $(5x + 1)$
- B) $3(5x + 1)$
- C) $15x^2 - 28x - 4$
- D) $15x - 35$


DIRECTIONS

Questions **16-20** ask you to solve a problem and enter your answer in the grid provided on your answer sheet. When completing grid-in questions:

- You are required to bubble in the circles for your answers. It is recommended, but not required, that you also write your answer in the boxes above the columns of circles. Points will be awarded based only on whether the circles are filled in correctly.
- Fill in only one circle in a column.
- You can start your answer in any column as long as you can fit in the whole answer.
- For questions 16-20, no answers will be negative numbers.
- Mixed numbers**, such as $4\frac{2}{5}$, must be gridded as decimals or improper fractions, such as 4.4 or as $\frac{22}{5}$. "42/5" will be read as "forty-two over five," not as "four and two-fifths."
- If your answer is a **decimal** with more digits than will fit on the grid, you may round it or cut it off, but you must fill the entire grid.
- If there are **multiple correct solutions** to a problem, all of them will be considered correct. Enter only **one** on the grid.

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.	4	2	2		.	3	2	6	.	1	2	5
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CONTINUE



16

What is one value of y that satisfies the inequality $|y - 5| \leq 1$?

19

$$\frac{n^2 + 1}{-2n + 8} = -13$$

What is the greater of the two values of n that satisfy the equation above?

17

$$15x - 6 = 3(x + 6)$$

What value of x satisfies the equation above?

20

A complex number $a + bi$ can be multiplied by i to get 1. What is the value of $a - b$? (Note: $i^2 = -1$.)

18

A psychological research study at a local university pays participants \$15 if they are students and \$10 if they are not students. If the study pays 10 participants a total of \$120, how many of the participants were students?

STOP

If you complete this section before the end of your allotted time, you may check your work on this section only. Do NOT use the time to work on another section.

Section 4



Math Test – Calculator

55 MINUTES, 38 QUESTIONS

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

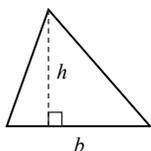
DIRECTIONS

Questions **1-30** ask you to solve a problem, select the best answer among four choices, and fill in the corresponding circle on your answer sheet. Questions **31-38** ask you to solve a problem and enter your answer in a grid provided on your answer sheet. There are detailed instructions on entering answers into the grid before question 31. You may use your test booklet for scratch work.

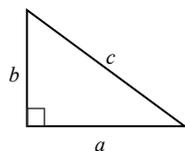
NOTES

1. You **may** use a calculator.
2. Variables and expressions represent real numbers unless stated otherwise.
3. Figures are drawn to scale unless stated otherwise.
4. Figures lie in a plane unless stated otherwise.
5. The domain of a function f is defined as the set of all real numbers x for which $f(x)$ is also a real number, unless stated otherwise.

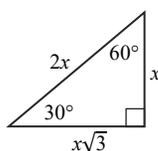
REFERENCE



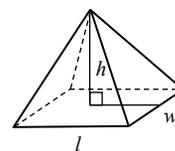
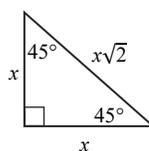
$$A = \frac{1}{2}bh$$



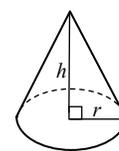
$$a^2 + b^2 = c^2$$



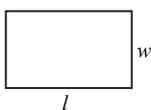
Special Triangles



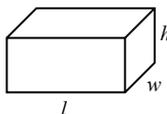
$$V = \frac{1}{3}lwh$$



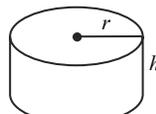
$$V = \frac{1}{3}\pi r^2 h$$



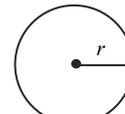
$$A = lw$$



$$V = lwh$$

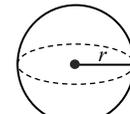


$$V = \pi r^2 h$$



$$A = \pi r^2$$

$$C = 2\pi r$$



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

There are 360° in a circle.

The sum of the angles in a triangle is 180° .

The number of radians of arc in a circle is 2π .

CONTINUE



1

$$f(x) = 2x + 1$$

$$g(x) = 4x - 4$$

Given the functions f and g above, what is $f(0) \times g(0)$?

- A) -5
- B) -4
- C) 0
- D) 4

2

The ratio of novels written by James Joyce to novels written by Virginia Woolf is 1:3. The ratio of novels written by Virginia Woolf to novels written by Ernest Hemingway is 1:2. If Ernest Hemingway wrote 18 novels, how many novels did James Joyce write?

- A) 12
- B) 9
- C) 6
- D) 3

3

A random sample of 100 people from the city of Omaha are surveyed about the number of books they read each month. If 25 of these people say they read 3 or more books per month, and Omaha has a population of 420,000, how many people in Omaha read 3 or more books per month?

- A) 84,000
- B) 105,000
- C) 189,000
- D) 218,000

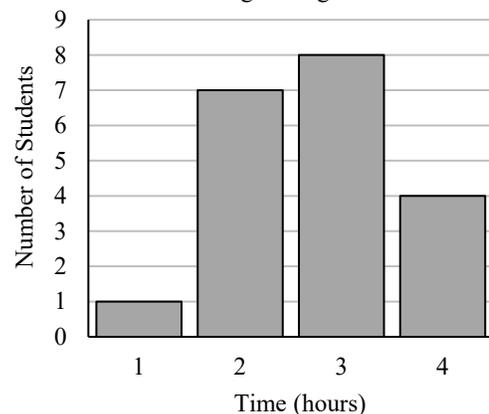
4

A printer can print at a rate of 5 pages per minute. How many hours will it take to print 300 pages?

- A) 0.5
- B) 1
- C) 1.5
- D) 3

5

Internet Usage at
Washington High School

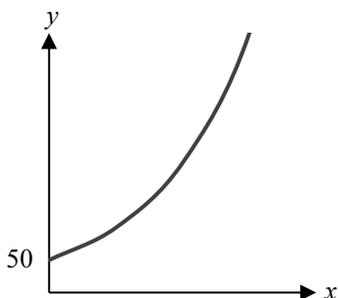


Administrators at Washington High School randomly surveyed 20 students about their internet use during class. The above histogram represents the number of hours students spent on the internet per day. Which of the following statements is FALSE?

- A) The mode of this data set is 3 hours.
- B) The mean of this data set is 2.75 hours.
- C) Exactly 60% of the students surveyed use the internet 3 or 4 hours per day.
- D) The median is smaller than the mean for this data set.



6



Every year, the population of Dwarf Lop rabbits doubles in a certain country, as shown in the graph above. If there were 50 Dwarf Lop rabbits at the start of 2017, how many Dwarf Lop rabbits will there be at the start of 2021?

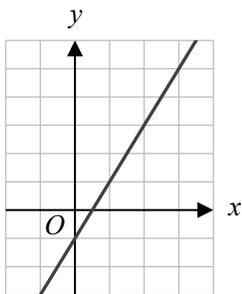
- A) 200
- B) 400
- C) 800
- D) 1600

8

A bird collects pieces of string in order to build a nest. If it starts with 2 pieces of string and collects 3 additional pieces of string each day, which of the following is a possible number of pieces of string that the bird could have at the end of a day?

- A) 12
- B) 13
- C) 14
- D) 15

7



Which of the following equations could represent the line shown above?

- A) $y = -2x - 1$
- B) $y = -2x + 1$
- C) $y = 2x - 1$
- D) $y = 2x + 1$



Questions 9-10 refer to the following information.

A group of scientists is studying the effects of green tea tannin on electrolyte loss in rats. They separate the rats into two groups and give each group a certain dose of green tea tannin per kilogram of body weight. After one day, the scientists record their results in the table below for the volume of urine and the concentration of electrolytes lost by the rats.

	Dose (milligram/kilogram body weight/24 h)	Urine Volume (milliliters/24 hour period)	Sodium (millimoles/liter/24 hour period)	Potassium (millimoles/liter/24 hour period)
Control group	0	41	1.6	0.3
Group 1	2	38	1.8	0.7
Group 2	4	35	2.0	1.1

9

If the volume of urine produced by a rat decreases linearly for each increase in dosage of green tea tannin, how much urine per day, in milliliters, will be produced by a rat that is administered 11 milligrams of green tea tannin per kilogram of the rat's weight?

- A) 21.5
- B) 23
- C) 24.5
- D) 26

10

If the amount of sodium and the amount of potassium excreted by the rats increases linearly for each increase in dosage of green tea tannin, what dosage of tannin, in milligrams, will make the concentration of sodium in a rat's urine equal to the concentration of potassium?

- A) 24
- B) 22
- C) 13
- D) 11

**CONTINUE**



11

Two random samples of students from different universities were surveyed about their sleep habits. Both groups had the same average number of hours of sleep, but those from University A had a higher standard deviation in hours than those from University B. Which of the following statements is supported by the results of the survey?

- A) The hours of sleep per night varies more among students at University A than students at University B.
- B) The hours of sleep per night varies more among students at University B than students at University A.
- C) More students attend University A than University B.
- D) More students attend University B than University A.

12

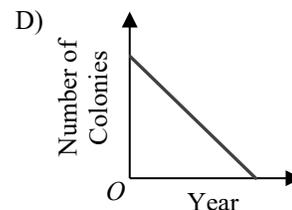
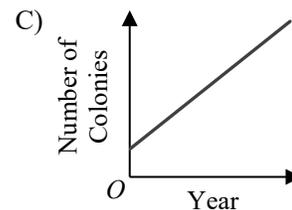
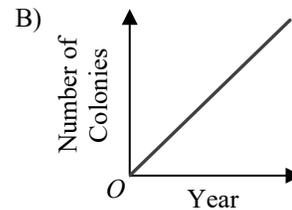
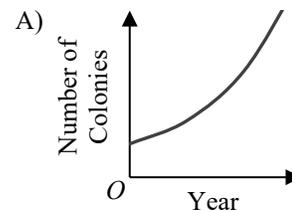
Logan bought 36 pieces of bubble gum, which was 40% of the store's stock. How many pieces of bubble gum are still in the store?

- A) 54
- B) 72
- C) 80
- D) 90

13

Fire Ant Colonies in Greenville	
Year	Number of colonies
1992	41,402
1993	43,783
1994	46,164
1995	48,545

The table above shows the number of fire ant colonies found in Greenville from 1992 to 1995. Which of the following graphs best represents the number of fire ant colonies in Greenville during the time period represented in the table?





14

A dietitian makes sure that she always consumes twice as many grams of protein as grams of fat per day. If she needs to eat more than 135 grams of both fat and protein combined to maintain her current muscle mass, which of the following is NOT a possible value for her daily protein count?

- A) 90 grams
- B) 91 grams
- C) 92 grams
- D) 93 grams

15

Lola is 9 years older than Maggie, and in 1 year Maggie's age will have the same two digits as Lola's age, but in reverse order. How old is Lola now?

- A) 19
- B) 23
- C) 27
- D) 31

16

$$x^2 + ax + b = (x - 9)(x + 9)$$

Given the equation above, what is the value of ab ?

- A) -81
- B) 0
- C) 81
- D) 1458

17

$$\frac{2}{x} + \frac{3}{y} + \frac{5}{xy}$$

Which of the following is equivalent to the above expression?

- A) $\frac{2x + 3y + 5xy}{xy}$
- B) $\frac{2y + 3x + 5}{xy}$
- C) $\frac{2x + 2y + 5}{xy}$
- D) $\frac{10}{xy}$

CONTINUE



18

Perceived Pedestrian Safety in New York City, U.S.			
Preferred method of transportation	Safe	Unsafe	Number surveyed
Walking	10%	90%	589
Bicycling	40%	60%	372
Driving	70%	30%	539

The Department of Transportation surveyed 1,500 people selected at random from New York City and asked them the question, “Do you think the streets are safe for pedestrians?” Based on the results of the survey shown above, which of the following statements are likely to be true?

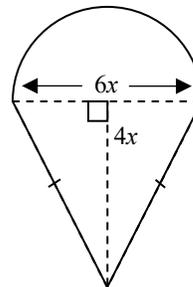
- I. Of all the people surveyed, approximately 39% think the streets are safe for pedestrians.
 - II. Of all the people in New York City, a greater proportion prefer to walk than bike.
 - III. Of all people who prefer driving in the U.S., 70% think the streets are safe for pedestrians.
- A) None
 B) II only
 C) I and II only
 D) I, II, and III

19

If the linear function f passes through the point $(-6, -13)$ in the xy -plane, and $f(2) = 3$, what is the y -intercept of f ?

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

20



Several cross-sectional slices of an unknown carnivore’s tooth were made to better measure the size of its incisors. What is the perimeter of this slice of tooth, in terms of x ?

- A) $5x + 3\pi x$
 B) $5x + 6\pi x$
 C) $10x + 3\pi x$
 D) $10x + 6\pi x$

21

If $5^{x+4} = 25^{x+3}$, what is the value of x ?

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



22

Daphnia are a type of water flea commonly found in lakes. Females can reproduce asexually, and they will either produce a male or a female embryo depending on the stress level of their environment. If, in a stressful environment, a female has a 75% chance to reproduce asexually, and the odds of a male being born are 2:1, what is the probability that a female in this environment will asexually produce a male?

- A) 0.5
- B) 0.6
- C) 0.7
- D) 1.0

24

If $(x + 2)^2 = 4$, which of the following is a solution for x ?

- A) -4
- B) -2
- C) 2
- D) 8

23

Drink Sales for July		
Drink Flavor	16 oz.	24 oz.
Vanilla	1525	3200
Mocha	m	175
Espresso	s	4500
Total	3000	7875

A beverage company offers 3 different flavors of energy drinks, and each flavor is offered in 2 different sizes. The table above shows the number of drinks sold in each category during the month of July. If 16 oz. cans represented 20% of the total number of espresso cans sold, how many 16 oz. cans of mocha, m , did the company sell?

- A) 1125
- B) 575
- C) 465
- D) 350



Questions 25-27 refer to the following information.

Career Statistics for Retired Quarterbacks		
Quarterback	Passer rating	TD:INT ratio
Brett Favre	86.0	1.53
Dan Marino	86.4	1.67
Donovan McNabb	85.6	2.00
Joe Montana	92.3	1.96
Kurt Warner	93.7	1.63
Peyton Manning	96.5	2.13
Roger Staubach	83.4	1.40
Steve McNair	82.8	1.46
Steve Young	96.8	2.17
Troy Aikman	81.6	1.17

One measure of a quarterback's ability is "passer rating," which is calculated using a formula that accounts for percentage of completions per attempt, average yards gained per attempt, percentage of touchdown passes per attempt, and percentage of interceptions per attempt. The highest possible rating a quarterback can achieve is 158.3. Another measure of a quarterback's ability is "TD:INT ratio," which is the number of touchdowns divided by the number of interceptions thrown by the quarterback. The table above gives the career passer rating and TD:INT ratio for 10 retired quarterbacks.

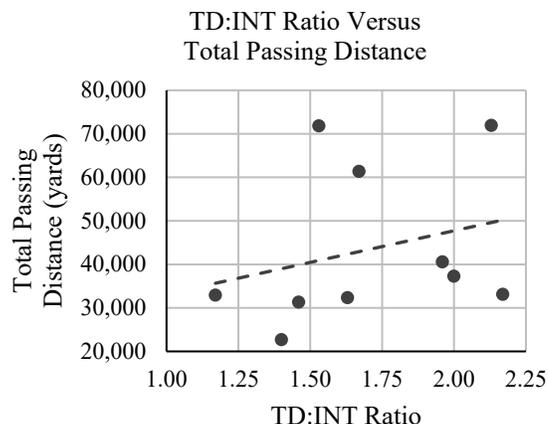
25

Over their careers, Brett Favre threw 508 touchdowns and Peyton Manning threw 539 touchdowns.

According to the information in the table, approximately how many more interceptions did Brett Favre throw than Peyton Manning?

- A) 392
- B) 79
- C) 31
- D) 1

26



The scatterplot above shows the TD:INT ratio plotted against the total passing distance, in yards, of the 10 retired quarterbacks in the table. Approximately how many yards did Joe Montana pass over his career?

- A) 32,000
- B) 37,500
- C) 40,500
- D) 72,000

27

What is the approximate difference, in yards, between Dan Marino's actual total passing distance and his total passing distance predicted by the line of best fit based on his TD:INT ratio?

- A) 61,000
- B) 42,000
- C) 19,000
- D) 11,000

CONTINUE



28

Hours of Exercise Per Week		
Hours per week	Number of Students	
	Class A	Class B
0	0	3
1	4	0
2	2	5
3	4	1

The table above shows the number of hours spent exercising per week by students in Class A and Class B. Which statement best describes the relationship between the median and mean of the hours of weekly exercise between the two classes?

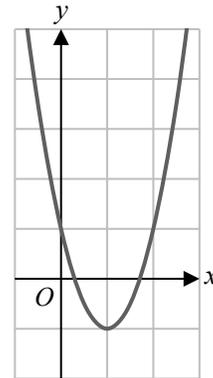
- A) Class A has a higher median than Class B, and Class B has a higher mean than Class A.
- B) Class B has a higher median than Class A, and Class B has a higher mean than Class A.
- C) Class A and B have the same median, and Class B has a lower mean than Class A.
- D) Class A and B have the same median, and Class A has a lower mean than Class B.

29

Nathan is birdwatching from the bow of his rowboat and sees a turkey vulture flying above a beach 3 miles to the east. If he tilts his binoculars up 30° to see the vulture, how high is it flying above the beach, in miles?

- A) 1
- B) $\sqrt{3}$
- C) 2
- D) 4

30



If the function $f(x) = ax^2 + bx + c$ is graphed above, which of the following expressions must be positive?

- A) ab
- B) $b - a$
- C) $-c$
- D) ac


DIRECTIONS

Questions **31-38** ask you to solve a problem and enter your answer in the grid provided on your answer sheet. When completing grid-in questions:

- You are required to bubble in the circles for your answers. It is recommended, but not required, that you also write your answer in the boxes above the columns of circles. Points will be awarded based only on whether the circles are filled in correctly.
- Fill in only one circle in a column.
- You can start your answer in any column as long as you can fit in the whole answer.
- For questions 31-38, no answers will be negative numbers.
- Mixed numbers**, such as $4\frac{2}{5}$, must be gridded as decimals or improper fractions, such as 4.4 or as $\frac{22}{5}$. "42/5" will be read as "forty-two over five," not as "four and two-fifths."
- If your answer is a **decimal** with more digits than will fit on the grid, you may round it or cut it off, but you must fill the entire grid.
- If there are **multiple correct solutions** to a problem, all of them will be considered correct. Enter only **one** on the grid.

5	/	1	1		8	.	4		3	/	7			
/	●	○			/	○	○		/	○	●			
.	○	○	○	○	.	○	○	●	○	.	○	○	○	○
0	○	○	○	○	0	○	○	○	○	0	○	○	○	○
1	○	○	●	●	1	○	○	○	○	1	○	○	○	○
2	○	○	○	○	2	○	○	○	○	2	○	○	○	○
3	○	○	○	○	3	○	○	○	○	3	○	●	○	○
4	○	○	○	○	4	○	○	○	●	4	○	○	○	○
5	●	○	○	○	5	○	○	○	○	5	○	○	○	○
6	○	○	○	○	6	○	○	○	○	6	○	○	○	○
7	○	○	○	○	7	○	○	○	○	7	○	○	○	●
8	○	○	○	○	8	○	●	○	○	8	○	○	○	○
9	○	○	○	○	9	○	○	○	○	9	○	○	○	○

.	4	2	2		.	3	2	6		.	1	2	5	
/	○	○			/	○	○		/	○	○			
.	●	○	○	○	.	●	○	○	○	.	●	○	○	○
0	○	○	○	○	0	○	○	○	○	0	○	○	○	○
1	○	○	○	○	1	○	○	○	○	1	○	●	○	○
2	○	○	●	●	2	○	○	●	○	2	○	○	●	○
3	○	○	○	○	3	○	●	○	○	3	○	○	○	○
4	○	●	○	○	4	○	○	○	○	4	○	○	○	○
5	○	○	○	○	5	○	○	○	○	5	○	○	○	●
6	○	○	○	○	6	○	○	○	●	6	○	○	○	○
7	○	○	○	○	7	○	○	○	○	7	○	○	○	○
8	○	○	○	○	8	○	○	○	○	8	○	○	○	○
9	○	○	○	○	9	○	○	○	○	9	○	○	○	○

CONTINUE



31

Linda works 6 hours a day on Monday and Wednesday, 8 hours a day on Thursday and Friday, and 5 hours on Sunday. If she is paid \$495 at the end of the week, what is Linda's hourly wage? (Note: Ignore the dollar sign when gridding your answer.)

32

A molecule of nitrogen trifluoride, NF_3 , contains 1 atom of nitrogen and 3 atoms of fluorine. How many nitrogen trifluoride molecules can be formed with 2,016 atoms of fluorine and unlimited nitrogen?

33

$$A + B = 3$$

$$A + C = x$$

$$C + D = 12$$

$$B + D = 4x$$

Given the set of equations above, what is the value of x ?

34

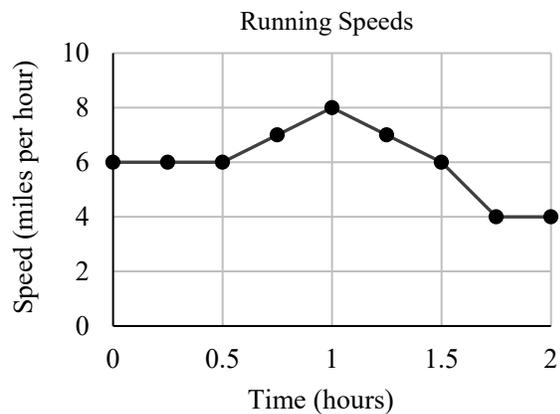
$$\frac{5}{x^2 + 6x + 8} = \frac{A}{x + 2} + \frac{B}{x + 4}$$

In the above equation, what is the value of $A + B$ if A is equal to 2.5?

CONTINUE 



35



The graph above shows Rebecca's running speeds during a 2-hour run. What is the total distance, in miles, that Rebecca ran during the first hour of her run?

36

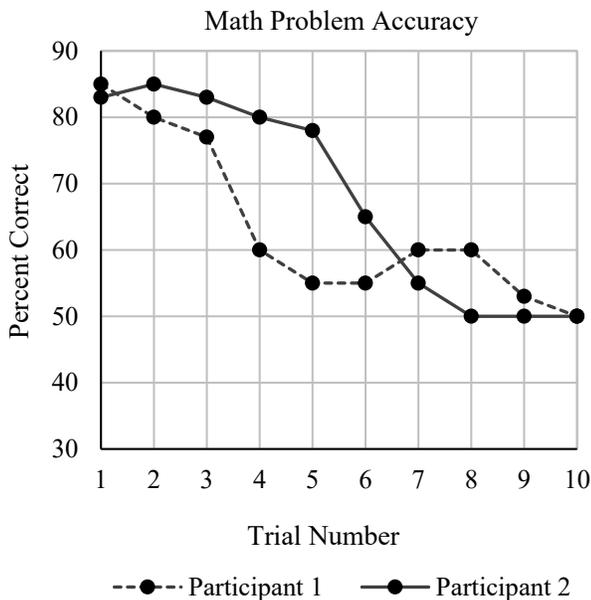
If a sector of a circle with a central angle of 60° has an area of 24π , what is the radius of the circle?

CONTINUE



Questions 37 and 38 refer to the following information.

In a psychology experiment, participants are asked to solve simple math problems presented on a computer screen. The data is analyzed by calculating what percentage of the problems the participant answers correctly during one trial. The trials are presented back to back with no breaks in between. The results are shown below.



37

The experiment consists of 10 trials, each of which lasts 5 minutes. If a new math problem is presented every 6 seconds, how many problems are presented during one trial?

38

In the eighth trial, how many more problems did Participant 1 answer correctly than Participant 2, as a percentage of the number of problems Participant 2 answered correctly? (Ignore the % symbol when gridding your answer.)

STOP

If you complete this section before the end of your allotted time, you may check your work on this section only. Do NOT use the time to work on another section.

Essay

Essay (Optional)

50 MINUTES

Turn to the lined pages of your answer sheet to write your essay.

DIRECTIONS

This essay is optional. It is a chance for you to demonstrate how well you can understand and analyze a written passage. Your essay should show that you have carefully read the passage and should be a concisely written analysis that is both logical and clear.

You must write your entire essay on the lines in your answer booklet. No additional paper will be provided aside from the Planning Page inside your answer booklet. You will be able to write your entire essay in the space provided if you make use of every line, keep tight margins, and write at a suitable size. Don't forget to keep your handwriting legible for the readers evaluating your essay.

You will have 50 minutes to read the passage in this booklet and to write an essay in response to the prompt provided at the end of the passage.

REMINDERS

- What you write in this booklet will not be evaluated. Write your essay in the answer booklet only.
 - Essays that are off-topic will not be evaluated.
-

As you read the passage below, consider how Alan Levinovitz uses

- evidence, like examples or facts, to support his arguments.
- logical reasoning to develop his ideas and to connect his claims to his evidence.
- stylistic or persuasive techniques, such as the choice of particular words or appeals to his readers' emotions, to give power to the ideas put forth.

Adapted from Alan Levinovitz, "Blame Sugar? We've been doing that for over 100 years." © 2015 The Conversation.

- 1 After a successful soda tax was passed last year in Berkeley, California, copycat laws are being proposed across the US, often with the support of nutritionists, medical professionals and a majority of the voting public. On May 28, the Illinois chapter of the American Academy of Pediatrics endorsed an act that would use a tax on sugary drinks.
- 2 Research has implicated sugar in the rising obesity rate and in health conditions like Type 2 Diabetes. Some researchers, including Robert Lustig, a pediatric endocrinologist from the University of California San Francisco, have described sugar as toxic. Lustig's criticisms can verge on apocalyptic. Sugar is "evil," "toxic" and "poisonous." Journalists, policymakers, and food activists have become devoted followers, and they support his call to regulate sugar "like alcohol and tobacco."
- 3 But this furor over sugar isn't anything new. Crusaders have been warning about the evil effects of sugar for hundreds of years, with no positive effect on our health. And isn't that the goal of this kind of rhetoric? Without attending to this history of bias and failed rhetoric, we may be doomed to continue repeating it.
- 4 Social history reveals a consistent pattern of irrational beliefs about sugar. In 1974, pediatrician William Crook wrote a letter to a medical journal in which he named cane sugar "a leading cause of hyperactivity" (what we now call ADHD). Researchers debated Crook's claim for decades. The scientific consensus now? According to the National Institute of Mental Health, "more research discounts this idea than supports it."
- 5 Going back further in time, the demonization of sugar gets increasingly absurd. In 1968, holistic lifestyle crusader Jerome Irving Rodale wrote *Natural Health, Sugar, and the Criminal Mind*, the thesis of which is evident from the title.
- 6 The scapegoating of sugar dates to at least to the 18th century, when people lived in mortal fear of sexuality. British author Jonas Hanway blamed sugar for creating "fantastic desires and bad habits in which nature has no part." Children, he warned, were particularly susceptible to sugar's detrimental effects, which also included "scurvy [and] weak nerves."
- 7 Anti-sugar advocates like Lustig have adopted a fire-and-brimstone approach: demonize a macronutrient. Tell people they should consider removing sugar and sugary foods from their pantries, that it is toxic, and that we need to regulate it like cigarettes, alcohol, and other drugs of abuse.
- 8 But before we ransack our kitchens, it's worth pausing to heed a warning from Stanford epidemiologist John PA Ioannidis. In his seminal 2007 article, "Why Most Published Research Findings Are False," Ioannidis helps explain the endless flip-flopping on nutritional guidelines. "For many current scientific

fields,” he writes, “claimed research findings may often be simply accurate measures of the prevailing bias.”

- 9 Real science, as Ioannidis reminds us, is slow and humble. Only time will tell if the current level of sugar alarmism is warranted, or if many years from now the comparison of sugar to cocaine will look a bit ridiculous. The research on sugar might be right—but our history of bias shows that we have a tendency to jump the gun on sugar due to moral furor.
- 10 That doesn’t mean that excessive sugar consumption is safe, nor that we should accept sugar’s role in our national diet. So how do we address these problems?
- 11 Perhaps extremism, not sugar, is the real enemy. If that’s the case, the best approach to fixing our culinary culture doesn’t involve demonization or government regulation. These strategies promote dichotomous thinking—clean or unclean, toxic or safe—which experts warn may contribute to eating disorders while having marginal positive effects on overall public health.
- 12 There are other strategies available. We could recognize that a healthy attitude toward food needn’t involve worrying about which foods are healthy. We could focus on making convenience food fresher, more diverse, and more affordable, because not everyone has a local farmers’ market, or money to shop there, or time to cook, or a backyard garden in which to grow heirloom vegetables.
- 13 We could also strive to make home cooking more feasible by funding community cooking classes and reintroducing home economics. Culinary students—children and adults alike—could learn to prepare and appreciate delicious meals without feeling coerced, guilty or frightened. And they would do so in kitchens equipped, as all good kitchens are, with sugar.

Write an essay in which you explain how Alan Levinovitz builds an argument to persuade his audience that the dangers of sugar consumption may be overstated and that there is a need to reconsider the best way to deal with the issue of sugar consumption in the U.S. In your essay, analyze how Levinovitz 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 Levinovitz’s claims, but rather explain how he builds an argument to persuade his audience.

Answers and Scoring

Practice Test Answers

Part 1



For answer explanations, please visit ivyglobal.com/study.

Reading

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

Writing

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

Math – No Calculator

- | | | | | |
|------|------|-------|-----------------------|--------|
| 1. C | 5. B | 9. C | 13. C | 17. 2 |
| 2. C | 6. B | 10. A | 14. A | 18. 4 |
| 3. A | 7. C | 11. C | 15. B | 19. 21 |
| 4. B | 8. A | 12. C | 16. $4 \leq y \leq 6$ | 20. 1 |

Math – Calculator

- | | | | | |
|------|-------|-------|---------|---------|
| 1. B | 9. C | 17. B | 25. B | 33. 3 |
| 2. D | 10. C | 18. C | 26. C | 34. 0 |
| 3. B | 11. A | 19. A | 27. C | 35. 6.5 |
| 4. B | 12. A | 20. C | 28. C | 36. 12 |
| 5. D | 13. C | 21. A | 29. B | 37. 50 |
| 6. C | 14. A | 22. A | 30. D | 38. 20 |
| 7. C | 15. D | 23. D | 31. 15 | |
| 8. C | 16. B | 24. A | 32. 672 | |



For live scoring and scaling, please visit cloud.ivyglobal.com.

The Scoring System

Part 2

The SAT has three test scores on a scale from 10 to 40. There is one test score for each test: the Reading Test, the Writing and Language Test, and the Math Test. The Reading Test score and the Writing and Language Test score are added together and converted to a single area score in Evidence-Based Reading and Writing; there is also an area score in Math based on the Math Test Score.

The area scores are on a scale from 200 to 800. Added together, they form the composite score for the whole test, on a scale from 400 to 1600. The Essay is scored separately and does not affect your scores in other areas.

SAT Scoring	
Test Scores (10 to 40)	<ul style="list-style-type: none">• Reading Test• Writing and Language Test• Math Test
Area Scores (200 to 800)	<ul style="list-style-type: none">• Evidence-Based Reading and Writing• Math
Composite Score (400 to 1600)	<ul style="list-style-type: none">• Math (Area Score) + Evidence-Based Reading and Writing (Area Score)
Essay Scores (1 to 4)	<ul style="list-style-type: none">• Reading• Analysis• Writing

Cross-test scores for **Analysis in Science** and **Analysis in History/Social Studies** are based on performance on specific questions across different tests relating to specific types of content. For example, your cross-test score in Analysis in Science is based on your performance on questions relating to science passages on the Reading Test as well as questions using scientific data on the Math Test. These scores are on a scale from 10 to 40.

There are also seven **subscores** based on particular question types within each test section. Subscores are reported on a scale from 1 to 15. Four are related to particular questions in the Reading and Writing and Language Test: Words in Context, Command of Evidence, Expression of Ideas, and Standard English Conventions. The other three relate to specific types of questions on the Math Test: Heart of Algebra, Problem Solving and Data Analysis, and Passport to Advanced Math.

Cross-Test Scores and Subscores

You will receive **cross-test scores** for Analysis in Science and Analysis in History/Social Studies. The scores are based on your performance on questions in their respective subject domains across all sections of the exam. These scores are reported on a scale of 10-40.

You will also receive **subscores** based on your performance on certain question types within each test section. Subscores are reported on a scale of 1-15. There are seven subscores, for the following areas:

- **Words in Context:** this subscore is based on your performance on questions related to determining the meanings of words in the context of a passage in the Reading and Writing and Language tests.
- **Command of Evidence:** this subscore is based on your performance on questions that ask you to identify the best evidence in the Reading and Writing and Language tests.
- **Expression of Ideas:** this subscore is based on your performance on questions that ask you to identify clear, stylistically appropriate choices in Writing passages.
- **Standard English Conventions:** this subscore is based on your performance on questions that ask you to identify and correct errors of grammar, punctuation, usage, and syntax in Writing passages.
- **Heart of Algebra:** this subscore is based on your performance on Math questions testing key concepts in Algebra.
- **Problem Solving and Data Analysis:** this subscore is based on your performance on Math questions testing your ability to analyze sets of data, the meanings of units and quantities, and the properties of different objects and operations.
- **Passport to Advanced Math:** this subscore is based on your performance on Math questions that test the skills you'll build on as you continue to learn more advanced math including rewriting expressions, solving quadratic equations, working with polynomials and radicals, and solving systems of equations.

You can calculate these scores online using our free scoring tools.

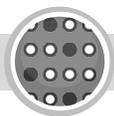


For live scoring and scaling, please visit cloud.ivyglobal.com.

Scoring Your Tests

Part 3

You can score your tests online using our free scoring tools, or you can use the tables below to help you calculate your scores.



For live scoring and scaling, please visit cloud.ivyglobal.com.

To score your tests manually, first use the answer key to mark each of your responses right or wrong. Then, calculate your **raw score** for each section by counting up the number of correct responses.

Raw Score (# of Questions Correct)	
Section	Score
1. Reading	_____
2. Writing and Language	_____
3. Math: No-Calculator	_____
4. Math: Calculator	_____
Raw Score for Reading (Section 1)	_____
Raw Score for Writing and Language (Section 2)	_____
Raw Score for Math (Section 3 + 4)	_____

Scaled Scores

Once you have found your raw score for each section, convert it into an approximate **scaled test score** using the following chart. To find a scaled test score for each section, find the row in the Raw Score column which corresponds to your raw score for that section, then check the column for the section you are scoring in the same row. For example, if you had a raw score of 48 for Reading, then your scaled Reading test score would be 39. Keep in mind that these scaled scores are estimates only. Your actual SAT score will be scaled against the scores of all other high school students taking the test on your test date.

Raw Score	Math Scaled Score	Reading Scaled Score	Writing Scaled Score	Raw Score	Math Scaled Score	Reading Scaled Score	Writing Scaled Score
58	40			28	23	26	25
57	40			27	22	25	24
56	40			26	22	25	24
55	39			25	21	24	23
54	38			24	21	24	23
53	37			23	20	23	22
52	36	40		22	20	22	21
51	35	40		21	19	22	21
50	34	40		20	19	21	20
49	34	39		19	18	20	20
48	33	39		18	18	20	19
47	33	38		17	17	19	19
46	32	37		16	16	19	18
45	32	36		15	15	18	18
44	31	35	40	14	14	17	17
43	30	34	39	13	13	16	16
42	30	34	38	12	12	16	15
41	29	33	37	11	11	14	14
40	29	33	35	10	10	13	13
39	28	32	34	9	10	12	12
38	28	31	33	8	10	11	11
37	27	31	32	7	10	10	10
36	27	30	31	6	10	10	10
35	26	30	30	5	10	10	10
34	26	29	29	4	10	10	10
33	25	29	28	3	10	10	10
32	25	28	27	2	10	10	10
31	24	28	27	1	10	10	10
30	24	27	26	0	10	10	10
29	23	26	26				

Use the table below to record your scaled scores:

Scaled Scores	
Section	Score
Reading (Out of 40)	_____
Writing and Language (Out of 40)	_____
Math (Out of 40)	_____

Essay Score

Estimate your essay score by assigning your essay a score out of 1-4 in each scoring area listed below. Have a trusted reader check your work. For more information on essay scoring criteria, see Chapter 4 of Ivy Global’s New SAT Guide.

Essay Score						
Scoring Area	Reading		Analysis		Writing	
	Reader 1	Reader 2	Reader 1	Reader 2	Reader 1	Reader 2
Test 1	_____	_____	_____	_____	_____	_____

Area Score Conversion

You can look up your area score out of 800 below. To find your overall score, combine your area score for Reading + Writing with your area score for Math to get your total score out of 1600.

Reading + Writing

Scaled Score	Area Score	Scaled Score	Area Score	Scaled Score	Area Score
80	760-800	59	550-630	39	350-430
79	750-800	58	540-620	38	340-420
78	740-800	57	530-610	37	330-410
77	730-800	56	520-600	36	320-400
76	720-800	55	510-590	35	310-390
75	710-790	54	500-580	34	300-380
74	700-780	53	490-570	33	290-370
73	690-770	52	480-560	32	280-360
72	680-760	51	470-550	31	270-350
71	670-750	50	460-540	30	260-340
70	660-740	49	450-530	29	250-330
69	650-730	48	440-520	28	240-320
68	640-720	47	430-510	27	230-310
67	630-710	46	420-500	26	220-300
66	620-700	45	410-490	25	210-290
65	610-690	44	400-480	24	200-280
64	600-680	43	390-470	23	200-270
63	590-670	42	380-460	22	200-260
62	580-660	41	370-450	21	200-250
61	570-650	40	360-440	20	200-240
60	560-640				

Math

Total Points	Area Score	Total Points	Area Score
40	760-800	24	440-520
39	740-800	23	420-500
38	720-800	22	400-480
37	700-780	21	380-460
36	680-760	20	360-440
35	660-740	19	340-420
34	640-720	18	320-400
33	620-700	17	300-380
32	600-680	16	280-360
31	580-660	15	260-340
30	560-640	14	240-320
29	540-620	13	220-300
28	520-600	12	200-280
27	500-580	11	200-260
26	480-560	10	200-240
25	460-540		

Use the table below to record your area scores and to calculate your overall score:

	Reading + Writing Area Score		Math Area Score		Overall Score (400-1600)
Test Score	_____	+	_____	=	_____