

Spring 2023

PSAT™ 10

Student Guide



PSAT 10
information



Test-taking
advice and tips



Directions
and sample
test questions



About College Board

College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, College Board was created to expand access to higher education. Today, the membership association is made up of over 6,000 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success—including the SAT®, the Advanced Placement® Program, and BigFuture®. The organization also serves the education community through research and advocacy on behalf of students, educators, and schools. For further information, visit collegeboard.org.

PSAT 10 Customer Service

You can reach us from 8 a.m.–9 p.m. ET (9 a.m.–7 p.m. mid-June to mid-August).

PHONE: 866-433-7728

INTERNATIONAL: +1-212-713-8105

EMAIL: psathelp@info.collegeboard.org

MAIL: PSAT 10

P.O. Box 6720

Princeton, NJ 08541-6720

© 2022 College Board. College Board, Advanced Placement, AP, BigFuture, CLEP, SAT, and the acorn logo are registered trademarks of College Board. PSAT and Student Search Service are trademarks owned by College Board. All other marks are the property of their respective owners. Visit College Board on the web: collegeboard.org.

Khan Academy is a registered trademark in the United States and other jurisdictions.

Contents

1	Test-Taking Information	33	PSAT 10 Terms and Conditions
1	Using This Guide	33	Introduction
1	How the PSAT 10 Is Organized	33	Section 1. Required and Prohibited Items for Testing
2	How the PSAT 10 Is Scored	34	Section 2. Prohibited Behaviors
2	Create a College Board Account	35	Section 3. Score Cancellation and Disciplinary Measures
3	If You Need Testing Accommodations	36	Section 4. Privacy
3	Student Search Service	36	Section 5. Miscellaneous
4	How to Prepare	37	Section 6. Policies and Requirements
5	Test Day Items	37	Section 7. Intellectual Property Rights
5	What to Do If ...	37	Section 8. ARBITRATION OF DISPUTES AND CLASS ACTIONS WAIVER
5	Testing Guidelines	38	Section 9. Venue and Waiver of Jury Trial
5	Privacy Policies	38	Section 10. LIMITATIONS OF LIABILITY
5	Telemarketing Scams	38	Section 11. Severability
5	Test Fairness Review	39	Section 12. Restricted Registrations
6	Test Question Inquiries	39	Section 13. Accessibility of These Terms and Conditions
6	Additional Information		
7	Evidence-Based Reading and Writing		
7	Reading Test Overview		
8	Sample Reading Test Materials		
9	Reading Test Questions		
15	Writing and Language Test Overview		
16	Sample Writing and Language Test Materials		
17	Writing and Language Test Questions		
23	Math		
23	Math Test Overview		
23	Calculator Use		
24	Answering Student-Produced Response Questions		
24	Tips for the Math Test		
24	Sample Math Test Materials		
25	Math Test – No Calculator Questions		
29	Math Test – Calculator Questions		

Test-Taking Information

Using This Guide

Taking the PSAT™ 10 is a great way to find out how prepared you are for college and career. The test also connects you to College Board programs and services that can propel you to opportunities you've earned.

We've created this guide to help you:

- Become familiar with the test so you're not surprised or confused on test day.
- Learn the test directions. The directions for answering the questions in this guide are the same as those on the actual test.
- Review the sample questions. The more familiar you are with the question formats, the more comfortable you'll feel when you see similar questions on the actual test. In particular, be sure to practice how to answer the student-produced response questions on the Math Test explained later in this guide.
- Be aware of what you need to know about taking this test. **You will be asked to agree to the PSAT 10 Terms and Conditions starting on page 33 on test day.** These Terms and Conditions have information on:
 - ◆ Acceptable photo identification
 - ◆ Required and prohibited items for testing
 - ◆ Acceptable and unacceptable calculators
 - ◆ Test security and fairness policies
 - ◆ Phone and electronic device policies
 - ◆ Privacy policies, including the use of student information

IMPORTANT: *You will be bound by the Terms and Conditions as they exist on test day. Prior to test day, you must review any updates to these Terms and Conditions, which will be clearly communicated to you at cb.org/psat10-terms.*

How the PSAT 10 Is Organized

The PSAT 10 measures the knowledge and skills you have developed in reading, writing and language, and math. This test is not about memorizing words and facts you will never use again. Instead, it focuses on what you have already learned in school and what you will need to succeed in college and career. It measures your reasoning and critical thinking skills, which will be important to you through high school, college, and beyond.

The PSAT 10 has 3 tests: the Reading Test, the Writing and Language Test, and the Math Test. The tests break down like this:

Component	Time Allotted (min.)	Number of Questions
Reading	60	47
Writing and Language	35	44
Math	70	48
Total	165	139

How the PSAT 10 Is Scored

All multiple-choice questions are scored by giving 1 point for each correct answer. No points are subtracted for incorrect answers or answers left blank. Hard questions count the same as easier ones. You won't lose any points for guessing, so try to answer every question. The table shows all the scores you'll receive on the PSAT 10.

PSAT 10 Score Reported	Details	Score Range
Total Score	Sum of the 2 section scores	320–1520
Section Scores (2)	<ul style="list-style-type: none">▪ Evidence-Based Reading and Writing▪ Math	160–760
Test Scores (3)	<ul style="list-style-type: none">▪ Reading▪ Writing and Language▪ Math	8–38
Cross-Test Scores (2)	<ul style="list-style-type: none">▪ Analysis in History/Social Studies▪ Analysis in Science	8–38
Based on selected questions in the Reading Test, Writing and Language Test, and Math Test. These scores show how well you use your skills to analyze texts and solve problems in these subject areas.		
Subscores (7)	<ul style="list-style-type: none">▪ Reading and Writing and Language: Command of Evidence and Words in Context▪ Writing and Language: Expression of Ideas and Standard English Conventions▪ Math: Heart of Algebra, Problem Solving and Data Analysis, and Passport to Advanced Math	1–15

Your score report will include a total score, section scores, and test scores, and may include cross-test scores and subscores as well. You'll be able to see not only how you did overall, but also where your strengths are and where you need to improve. Once your scores are available, visit studentscores.collegeboard.org to learn more.

Your score report includes a message about your potential for success in AP® courses based on your scores. There's also some helpful advice about when to take the SAT.

Scores will become available based on when your school tests. If you haven't received your scores by late June, see your counselor. Your school will be able to print a copy of your score report.

Create a College Board Account

Once you create a free College Board account, you can:

- Access your PSAT 10 scores when they become available.
- Sign up for free, personalized practice through Official SAT Practice on Khan Academy®.

Just visit collegeboard.org and click **Create Account** to get started.

IMPORTANT: BigFuture Career Search—Want to learn more about your future career options based on your interests? Try this engaging, personalized career exploration tool on BigFuture®. Visit bigfuture.org.

If You Need Testing Accommodations

If you have a disability that requires accommodations such as braille, extra breaks, or permission to test blood sugar, be sure to have your school request College Board approval well in advance of the test date you need the accommodations for. Requests for accommodations are handled by the Services for Students with Disabilities (SSD) office.

IMPORTANT: *Supports such as dictionaries, translated test directions, and extended time are available for English learners. The process for English learner (EL) supports differs from requesting accommodations for disabilities. If you need EL support, work with your school to ensure it will be there on test day.*

When considering accommodations, note the following:

- Work with your school's SSD coordinator or counselor for accommodations. Your SSD coordinator or other appropriate school staff can help determine what accommodations are best for you and submit a request online.
- If you move to a new school after you've been approved for accommodations, notify your new school of your approval. Print your SSD eligibility letter from your student account to give to your new school.
- If you are approved for extended time for specific subject areas (math, for example), you'll only get those accommodations on the relevant sections or tests. However, if you're approved for extended time for reading, you'll get extended time for the entire test.
- Talk to your SSD coordinator or other appropriate staff member before test day to confirm what accommodations you are approved for and any additional information you need for testing.
- Bring your SSD eligibility letter with you on test day in case there are any questions.
- For more information, visit collegeboard.org/ssd.

Student Search Service

Student Search Service™ is a free, voluntary program that connects students with information about opportunities from nearly 1,900 eligible colleges, scholarships, and other educational programs. By joining Student Search Service, you can connect with colleges and scholarship programs looking for students like you and discover opportunities you had not previously considered.

Key facts about Student Search Service:

- You can join for free and hear from a diverse group of accredited colleges, universities, scholarships, and other nonprofit educational programs. No other organizations or companies are eligible to participate in Student Search Service.
- When you take a College Board test, you will be asked to provide certain information about yourself on the test answer sheet. Some of the questions are optional; others are required.
- You'll have the opportunity to join as part of your test answer sheet. It's entirely up to you whether to opt in. The service is free to you, but education organizations pay us a licensing fee to use the service. We use those fees to support our nonprofit, mission-driven work, including providing fee waivers so that students from lower income families can take the SAT for free. College Board is a nonprofit organization.
- Being part of Student Search Service is voluntary and you can opt out at any time.
- Being contacted by a college or university doesn't mean you've been admitted. You must submit an application to be considered for admission. Student Search Service is a simple way for colleges and scholarships to reach prospective students to let them know about the opportunities they offer.

How Student Search Service Works

- If you opt in, you may be identified by education organizations as a potential match for their programs and opportunities.
- Education organizations generally look for groups of students based on expected graduation date, where they live, self-reported cumulative grade point average (GPA), test score ranges, intended college major, geography, and other limited parameters. This information comes from your test answer sheet and other information you provide to College Board. It may also include your college list, if you created one, on the College Board college planning website, BigFuture®, at bigfuture.org.

- College Board never shares your actual test scores, grades, disability status, parent information, or telephone numbers. Please note, we do share test score ranges and GPA.
- If you have opted in and match the education organization search criteria, we will provide them with your contact information so they can reach out to you by postal mail and/or email about their programs and opportunities. They have to keep your data secure and may not share your data with any third parties (other than service providers to the education organization).
- Colleges and other education organizations send students information about things like:
 - ♦ Financial aid, scholarships, or other ways to make college or university more affordable
 - ♦ Details on campus life and student services
 - ♦ Overviews of majors, courses, and degree options
 - ♦ Deadline information
- For more information, visit studentsearch.collegeboard.org.

Education organizations include the following scholarship programs that College Board partners with:

- American Indian Graduate Center (aigcs.org)
- American Indian Science and Engineering Society (aises.org)
- American Savings Foundation (asfdn.org)
- Asian & Pacific Islander American Scholars (apiascholars.org)
- Boettcher Foundation (boettcherfoundation.org/colorado-scholarships)
- Children of Fallen Patriots (CFP) (fallenpatriots.org)
- Cobell Scholarship (awarded by Indigenous Education, Inc.) (cobellscholar.org)
- Coca-Cola Scholars Foundation (coca-colascholarsfoundation.org)
- Daniels Fund (danielsfund.org)
- The Ford Family Foundation (tfff.org/scholarship-programs-information)
- The Gates Scholarship (thegatesscholarship.org)
- George Snow Scholarship Fund (scholarship.org)
- Greenhouse Scholars (greenhousescholars.org)
- Hispanic Scholarship Fund (hsf.net)
- Horatio Alger Association (scholars.horatioalger.org)
- Jack Kent Cooke Foundation (jkcf.org)
- The Jackie Robinson Foundation (jackierobinson.org)
- Marine Corps Scholarship Foundation (mcsf.org)
- Ron Brown Scholar Program (ronbrown.org)
- Sachs Foundation (sachsfoundation.org)

- Society of Women Engineers (swe.org/scholarships)
- Southern Scholars Initiative (southernscholarsinitiative.org)
- Sunrise Scholars Foundation (sunrisescholars.org)
- TheDream.US (thedream.us)
- United Negro College Fund (uncf.org)
- Washington State Opportunity Scholarship (waopportunityscholarship.org)

See psat.org/scholarships for more information.

Opting Out

If at any time you change your mind and want to stop participating, please visit my.collegeboard.org/profile/privacy or contact us at SearchCustomerService@collegeboard.org or 866-825-8051. Please note, educational organizations that have already received your name and other data may continue to send you information. You may contact such organizations directly to opt out of further communications from them.

How to Prepare

The same habits and choices that lead to success in school will help you get ready for the PSAT 10. The best way to prepare for the test is to take challenging courses, do your homework, prepare for tests and quizzes, and ask and answer lots of questions. This guide includes the following to help you prepare:

- Advice, sample passages, and sample questions for the Reading Test and the Writing and Language Test
- Advice, sample questions, and calculator information for the Math Test

You can also go online for more help and information:

- Go to collegeboard.org/psatpractice for additional sample questions, practice test answer explanations, and full-length practice tests. Practice tests in pre-recorded audio (MP3 via streaming) and assistive technology-compatible formats are also available on our website. If you are approved for another format, such as braille, a practice test may be sent to your school, or you can call 212-713-8333 to request a practice test in a specific format.
- Go to psat.org/scoring for more information about scoring and free, personalized practice from Khan Academy.

Practice Tests with Scoring Guides and Answer Explanations

Take an official PSAT 10 practice test on paper to simulate test day.

1. Download and print PSAT 10 Practice Test #1 and/or #2 from psat.org/practice. Be sure to follow the instructions, and use the official answer sheet to bubble in your answers.
2. After you've finished the practice test, get instant feedback and question-by-question results by downloading the answer explanations and scoring guide for the test you took.

Test Day Items

Refer to the PSAT 10 Terms and Conditions on page 33 for a list of items you'll need to bring for test day.

Though not required, consider bringing:

- Snacks and drinks (which must be under your desk during testing)
- Extra batteries and backup calculator

What to Do If ...

You know in advance that you cannot take the test on the date your school offers it: Tell your counselor as soon as possible that you have a conflict, such as a religious observance. You may be able to take the test at a nearby school that has selected a different test date. If you test at another school, be sure to take your school code and an acceptable photo ID with you. You'll need to keep your ID with you at all times, especially if you leave the testing room. (See the PSAT 10 Terms and Conditions on page 33 for information about acceptable photo identification.)

You are homeschooled and want to take the PSAT 10: Make arrangements in advance with your local school or another nearby school that is administering the test. Contact the PSAT 10 office (see inside front cover) if you need help finding a school in your area that's giving the test.

You will be studying in another country when the test is given: Contact the PSAT 10 office and provide the name of the city and country and, if known, the name and address of the school you will be attending when the test is given. The PSAT 10 office will send you instructions.

Testing Guidelines

- Plan ahead and bring equipment that's in good working order. Testing staff might not have extra batteries or calculators.
- When marking answers:
 - ♦ Use a No. 2 pencil with a soft eraser on all parts of the answer sheet. Do not use a pen or mechanical pencil.
 - ♦ Make sure you fill in the entire bubble darkly and completely.
 - ♦ Erase any changes you make as completely as possible.
- Store any snacks or drinks you bring out of sight in a paper bag under your desk. You may only eat snacks during breaks. The testing staff will tell you where you can go to have your snack.

Privacy Policies

College Board recognizes the importance of protecting your privacy. Please review our privacy policies at collegeboard.org/privacy-center ("Privacy Policies") and the PSAT 10 Terms and Conditions on page 33 to understand our collection, use, and disclosure of your personally identifiable information.

Telemarketing Scams

We sometimes get reports of phone scams when callers posing as employees of College Board try to sell test preparation products or request sensitive, personally identifying information, such as credit card and Social Security numbers. College Board does not make unsolicited phone calls or send emails to students or families requesting this type of information. This type of activity, known as telemarketing fraud, is a crime and should be reported to local law enforcement.

Test Fairness Review

All new PSAT 10 test questions and complete new editions of the tests are reviewed by independent educators from throughout the United States. These reviews help ensure that the questions are unambiguous and relevant and that the language used is not offensive to, or inappropriate for, any particular group of students based on race/ethnicity or gender. Assessment staff ensure that the test as a whole includes references to men and women as well as to individuals from varied racial, ethnic, and cultural backgrounds. Statistical procedures are used to identify questions that are harder for a group of students to answer correctly than would be expected from their performance on other questions in the test; these questions are excluded from the tests.

Test Question Inquiries

If you find what you consider to be an error or an ambiguity in a test question, tell the test coordinator immediately after the test. You may also email psatquestion@collegeboard.org.

In your inquiry, provide your name and mailing address, the date you took the PSAT 10, the name and address of the school where you took the test, the test section, the test question (as well as you can remember), and an explanation of your concern about the question.

The PSAT 10 Program will send you a written response after your inquiry has been reviewed thoroughly by subject-matter specialists.

IMPORTANT: *We will not respond via email, so be sure to include your full name and mailing address.*

Additional Information

Complete descriptions of the content of the test and information on test preparation and sample questions are provided in the **PSAT 10 Student Guide** (“Guide”) and online at psat.org.

Additional Information on the SAT

A primary purpose of the SAT is to determine how prepared students are to succeed, both in college and in career training programs. Extensive research on the predictive validity of the SAT has established its utility and value as a college entrance exam through studies on the relationship between SAT scores and first-year grade point average (“FYGPA”), retention, domain-specific course grades, grade point average (“GPA”) through each year of college, as well as completion. A 2019 national SAT Validity Study (satsuite.collegeboard.org/media/pdf/national-sat-validity-study.pdf), based on data from more than 223,000 students across 171 four-year colleges and universities, found the following:

- SAT scores are strongly predictive of college performance—students with higher SAT scores are more likely to have higher grades in college.
- SAT scores are predictive of student retention to their second year—students with higher SAT scores are more likely to return for their sophomore year.
- SAT scores and high school grade point average (“HSGPA”) are both related to academic performance in college but tend to measure slightly different aspects of academic preparation. Using SAT scores in conjunction with HSGPA is the most powerful way to predict future academic performance.
 - ♦ On average, SAT scores add 15% more predictive power above grades alone for understanding how students will perform in college.
 - ♦ SAT scores help to further differentiate student performance in college within narrow HSGPA ranges.
- Colleges can use SAT scores to identify students who may be in need of academic support before they start college and throughout their college education by monitoring predicted versus actual performance and help position these students for success.

Visit research.collegeboard.org/reports/sat-suite for more updates on the predictive validity of the SAT.

Evidence-Based Reading and Writing

The Evidence-Based Reading and Writing section is composed of 2 tests that assess different but related skills and knowledge. The Reading Test gives you a chance to show how well you understand what you read. The Writing and Language Test asks you to revise and edit text.

Reading Test Overview

- Total questions: 47 passage-based reading questions with multiple-choice responses.
- Time allotted: 60 minutes.
- Calculators may not be used or be on your desk.
- The questions often include references to direct you to the relevant part(s) of the passage(s).

What the Reading Test Is Like

When you take the Reading Test, you'll read passages and interpret informational graphics. Then you'll use what you've read to answer questions. Some questions ask you to locate a piece of information or an idea stated directly. But you'll also need to understand what the author's words or a graphic's data imply.

What You'll Read

Reading Test passages range in length from about 500 to 750 words and vary in complexity. The Reading Test includes:

- 1 passage from a classic or contemporary work of U.S. or world literature.
- 1 passage or a pair of passages from either a U.S. founding document (such as an essay by James Madison) or a text in the Great Global Conversation (such as a speech by Nelson Mandela).
- 1 passage on a social science topic from a field such as economics, psychology, or sociology.
- 2 science passages (or 1 passage and 1 passage pair) that examine foundational concepts or recent developments in Earth science, biology, chemistry, or physics.
- 2 passages accompanied by 1 or more informational graphics.

What the Reading Test Measures

To succeed in college and career, you'll need to apply reading skills in all sorts of subjects. You'll also need those skills to do well on the Reading Test.

The Reading Test measures skills and knowledge you'll need to apply when reading in college and workforce training programs. The test will ask you to find and interpret information and ideas, analyze how texts are put together and why they're written the way they are, work with data from informational graphics, and make connections between paired passages.

You'll be asked questions that require you to draw on the reading skills and knowledge needed most to succeed in the subjects the passages are drawn from. For instance, you might read about an experiment and then see questions that ask you to examine hypotheses, interpret data, or consider implications.

Answers are based only on the content stated in or implied by the passages and in any supplementary material, such as tables and graphs.

Command of Evidence

Some questions ask you to:

- Find evidence in a passage (or pair of passages) that best supports the answer to a previous question or serves as the basis for a reasonable conclusion.
- Identify how authors use (or fail to use) evidence to support their claims.
- Locate or interpret data in an informational graphic, or understand a relationship between a graphic and the passage it's paired with.

Words in Context

Some questions focus on important, widely used words and phrases that you'll find in texts in many different subjects. The words and phrases are ones that you'll use in college and the workplace long after test day.

These questions focus on your ability to:

- Figure out the meaning of words or phrases in context.
- Decide how an author's word choice shapes meaning, style, and tone.

Analysis in History/Social Studies and in Science

You'll be asked to read and analyze passages about topics in history/social studies and in science.

Tips for the Reading Test

To answer each question, consider what the passage or passages say directly, and use careful reasoning to draw supportable inferences and conclusions from the passage(s). The best answer to each question is derived from what is stated or implied in the passage(s) rather than from prior knowledge of the topics covered. All of the questions are passage based.

- Reading carefully is the key to finding the best answer to each question. The information you need to answer each Reading Test question is always in the passage(s). Don't be misled by an answer that looks correct but isn't supported by the actual text of the passage(s).
- The questions don't increase in difficulty from easy to hard. Instead, they are presented as logically as possible. Questions about central ideas and themes, point of view, and overall text structure generally come early in the sequence. After that come more specific questions about such matters as facts, details, and words in context.
- Stay with a passage until you have answered as many questions as you can before you proceed to the next passage. Don't jump from passage to passage.
- The questions often include references to help direct you to relevant part(s) of the passage(s). You may have to look elsewhere in the passage, however, to find the best answer to the question.
- In your test booklet, mark each question you skip so you can easily go back to it later if you have time.
- Remember that all questions are worth 1 point regardless of the type or difficulty. You don't lose points for guessing wrong, so you should try to answer each question as best you can.

Sample Reading Test Materials

Following are samples of the kinds of passages and questions that may appear on the Reading Test. For each set of sample materials:

- Read the passage(s) and any supplementary material carefully.
- Decide on the best answer to each question.
- Read the explanation for the best answer to each question and for the answer you chose (if they are different).

On the actual test, each passage will be followed by 9 or 10 questions. The directions that follow match the directions on the actual test.

Reading Test Questions

DIRECTIONS

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

Questions 1-4 are based on the following passage.

This passage is adapted from Edith Wharton, *Ethan Frome*, originally published in 1911. Mattie Silver is Ethan's household employee.

Mattie Silver had lived under Ethan's roof for a year, and from early morning till they met at supper he had frequent chances of seeing her; but no moments in her company were comparable to those when,
 5 her arm in his, and her light step flying to keep time with his long stride, they walked back through the night to the farm. He had taken to the girl from the first day, when he had driven over to the Flats to meet her, and she had smiled and waved to him from
 10 the train, crying out, "You must be Ethan!" as she jumped down with her bundles, while he reflected, looking over her slight person: "She don't look much on housework, but she ain't a fretter, anyhow." But it was not only that the coming to his house of a bit
 15 of hopeful young life was like the lighting of a fire on a cold hearth. The girl was more than the bright serviceable creature he had thought her. She had an eye to see and an ear to hear: he could show her things and tell her things, and taste the bliss of feeling
 20 that all he imparted left long reverberations and echoes he could wake at will.

It was during their night walks back to the farm that he felt most intensely the sweetness of this communion. He had always been more sensitive
 25 than the people about him to the appeal of natural beauty. His unfinished studies had given form to this sensibility and even in his unhappiest moments field and sky spoke to him with a deep and powerful persuasion. But hitherto the emotion had remained

30 in him as a silent ache, veiling with sadness the beauty that evoked it. He did not even know whether any one else in the world felt as he did, or whether he was the sole victim of this mournful privilege. Then he learned that one other spirit had trembled
 35 with the same touch of wonder: that at his side, living under his roof and eating his bread, was a creature to whom he could say: "That's Orion down yonder; the big fellow to the right is Aldebaran, and the bunch of little ones—like bees swarming—they're the
 40 Pleiades . . ." or whom he could hold entranced before a ledge of granite thrusting up through the fern while he unrolled the huge panorama of the ice age, and the long dim stretches of succeeding time. The fact that admiration for his learning mingled with
 45 Mattie's wonder at what he taught was not the least part of his pleasure. And there were other sensations, less definable but more exquisite, which drew them together with a shock of silent joy: the cold red of sunset behind winter hills, the flight of cloud-flocks
 50 over slopes of golden stubble, or the intensely blue shadows of hemlocks on sunlit snow. When she said to him once: "It looks just as if it was painted!" it seemed to Ethan that the art of definition could go no farther, and that words had at last been found to utter
 55 his secret soul. . . .

As he stood in the darkness outside the church these memories came back with the poignancy of vanished things. Watching Mattie whirl down the floor from hand to hand he wondered how he could ever have
 60 thought that his dull talk interested her. To him, who was never gay but in her presence, her gaiety seemed plain proof of indifference. The face she lifted to her dancers was the same which, when she saw him, always looked like a window that has
 65 caught the sunset. He even noticed two or three gestures which, in his fatuity, he had thought she kept for him: a way of throwing her head back when she was amused, as if to taste her laugh before she let it out, and a trick of sinking her lids slowly when
 70 anything charmed or moved her.

1

Over the course of the passage, the main focus of the narrative shifts from the

- A) reservations a character has about a person he has just met to a growing appreciation that character has of the person's worth.
- B) ambivalence a character feels about his sensitive nature to the character's recognition of the advantages of having profound emotions.
- C) intensity of feeling a character has for another person to the character's concern that that intensity is not reciprocated.
- D) value a character attaches to the wonders of the natural world to a rejection of that sort of beauty in favor of human artistry.

Estimated Difficulty: Medium	Key: C
-------------------------------------	---------------

Choice C is the best answer. The first paragraph traces the inception of Ethan's feelings for Mattie: Ethan "had taken to the girl from the first day" (lines 7-8) and saw her arrival as "like the lighting of a fire on a cold hearth" (lines 15-16). The second paragraph (lines 22-55) focuses on "their night walks back to the farm" (line 22) and Ethan's elation in perceiving that "one other spirit ... trembled with the same touch of wonder" that characterized his own (lines 34-35). In other words, the main focus of the first two paragraphs is the intensity of feeling one character, Ethan, has for another, Mattie. The last paragraph shifts the focus of the passage to Ethan's change in perception; he sees Mattie in a social setting interacting with other men, wonders "how he could ever have thought that his dull talk interested her" (lines 59-60), interprets her seeming happiness as "plain proof of indifference" toward him (line 62), and sees betrayal in the "two or three gestures which, in his fatuity, he had thought she kept for him" (lines 65-67).

Choice A is incorrect because while Ethan acknowledges that Mattie "don't look much on housework" (lines 12-13), the first paragraph also notes that Ethan "had taken to the girl from the first day" (lines 7-8); therefore, there is no support for the notion that Ethan's "reservations" about Mattie lasted for any length of time or ever constitute the main focus of the narrative.

Choice B is incorrect because while Ethan does exhibit ambivalence about his sensitive nature, seeing it as a "mournful privilege" (line 33), the main focus of the narrative does not shift to his recognition of the advantages of having profound emotions. Indeed, in the last paragraph, Ethan's profound emotions give him only grief, as he sees Mattie seemingly rejecting him.

Choice D is incorrect because while the second paragraph (lines 22-55) does discuss in depth the value Ethan attaches to natural beauty, nothing in the passage signifies that he has rejected natural beauty in favor of human artistry. The closest the passage comes to this is in line 52, in which Mattie is said to have likened a natural scene to a painting, an assertion with which Ethan agrees.

2

In the context of the passage, the author's use of the phrase "her light step flying to keep time with his long stride" (lines 5-6) is primarily meant to convey the idea that

- A) Ethan and Mattie share a powerful enthusiasm.
- B) Mattie strives to match the speed at which Ethan works.
- C) Mattie and Ethan playfully compete with each other.
- D) Ethan walks at a pace that frustrates Mattie.

Estimated Difficulty: Easy	Key: A
-----------------------------------	---------------

Choice A is the best answer. The author uses the phrase mainly to introduce a topic discussed at length in the second paragraph (lines 22-55)—namely, the growing connection Ethan sees himself forming with Mattie over the course of many evening walks during which they share similar feelings for the wonders of the natural world. In the context of the passage, the phrase evokes an image of two people walking eagerly and in harmony.

Choice B is incorrect because while the phrase literally conveys Mattie's attempts to keep up with Ethan's pace, the phrase relates to times of leisure during which Ethan and Mattie walk arm-in-arm (see lines 1-7) rather than times of work. Moreover, the phrase is used primarily in a figurative way to suggest shared enthusiasm (see explanation for choice A).

Choice C is incorrect because while the phrase literally describes Mattie's attempts to keep up with Ethan's pace, the context makes clear that Mattie and Ethan are not in competition with each other; instead, they are enjoying times of leisure during which the two walk arm-in-arm (see lines 1-7). Moreover, the phrase is used primarily in a figurative way to suggest shared enthusiasm (see explanation for choice A).

Choice D is incorrect because while the phrase in isolation could be read as conveying some frustration on the part of Mattie, who had to expend extra effort to keep up with Ethan's pace, the context makes clear that Mattie is not annoyed with Ethan but is instead enjoying times of leisure during which the two walk arm-in-arm (see lines 1-7). The phrase is used primarily to suggest shared enthusiasm (see explanation for choice A).

3

The description in the first paragraph indicates that what Ethan values most about Mattie is her

- A) fitness for farm labor.
- B) vivacious youth.
- C) receptive nature.
- D) freedom from worry.

Estimated Difficulty: Easy

Key: C

Choice C is the best answer. Lines 9-16 mention many of Mattie's traits: she is friendly ("smiled and waved"), eager ("jumped down with her bundles"), easygoing ("she ain't a fretter"), and energetic ("like the lighting of a fire on a cold hearth"). However, the trait that appeals the most to Ethan, as suggested by it being mentioned last in the paragraph, is her openness to the world around her: "She had an eye to see and an ear to hear: he could show her things and tell her things, and taste the bliss of feeling that all he imparted left long reverberations and echoes he could wake at will" (lines 17-21).

Choice A is incorrect because the passage suggests that Ethan does not actually view Mattie as particularly well suited to farm labor. When first seeing Mattie, Ethan thinks to himself, after "looking over her slight person," that "she don't look much on housework" (lines 12-13).

Choice B is incorrect because the passage suggests that Mattie's youth is not what Ethan values most about Mattie. Although the passage does note that "the coming to his house of a bit of hopeful young life was like the lighting of a fire on a cold hearth" (lines 14-16), the narrator goes on to note that "the girl was more than the bright serviceable creature [Ethan] had thought her" (lines 16-17), indicating that Ethan values something more in Mattie than simply her vivacity.

Choice D is incorrect because although Ethan acknowledges that Mattie "ain't a fretter" (line 13), there is no evidence that Mattie's freedom from worry is what Ethan values most about Mattie. The first paragraph lists several positive traits that Mattie has, with the most emphasis being placed on her openness to the world around her (see explanation for choice C).

4

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

- A) Lines 1-7 ("Mattie . . . farm")
- B) Lines 7-13 ("He had . . . anyhow")
- C) Lines 13-16 ("But it . . . hearth")
- D) Lines 17-21 ("She had . . . will")

Estimated Difficulty: Easy

Key: D

Choice D is the best answer. Lines 17-21 explain that Mattie "had an eye to see and an ear to hear: [Ethan] could show her things and tell her things, and taste the bliss of feeling that all he imparted left long reverberations and echoes he could wake at will." In other words, Mattie is open, or receptive, to ideas and experiences, and the placement of this point at the end of the list of traits Ethan admires ("But it was not only . . .") suggests that her openness is most important to him. Therefore, these lines serve as the best evidence for the answer to the previous question.

Choice A is incorrect because lines 1-7 only describe Ethan and Mattie's living situation and indicate that Ethan enjoys walking with her in the evenings. They do not indicate which quality of Mattie's Ethan values the most. Therefore, these lines do not serve as the best evidence for the answer to the previous question.

Choice B is incorrect because lines 7-13 only indicate Ethan's first impression of Mattie. Mattie comes across as generally friendly and enthusiastic in their first encounter, but it is not these qualities that Ethan values the most. Therefore, these lines do not serve as the best evidence for the answer to the previous question.

Choice C is incorrect because lines 13-16 only convey that there was something special about Mattie beyond her friendliness and enthusiasm. They do not indicate what Ethan values the most about Mattie. Therefore, these lines do not serve as the best evidence for the answer to the previous question.

Questions 5-9 are based on the following passage and supplementary material.

This passage is adapted from Ed Yong, "Turtles Use the Earth's Magnetic Field as Global GPS." ©2011 by Kalmbach Publishing Co.

In 1996, a loggerhead turtle called Adelita swam across 9,000 miles from Mexico to Japan, crossing the entire Pacific on her way. Wallace J. Nichols tracked this epic journey with a satellite tag. But Adelita herself had no such technology at her disposal. How did she steer a route across two oceans to find her destination?

Nathan Putman has the answer. By testing hatchling turtles in a special tank, he has found that they can use the Earth's magnetic field as their own Global Positioning System (GPS). By sensing the field, they can work out both their latitude and longitude and head in the right direction.

Putman works in the lab of Ken Lohmann, who has been studying the magnetic abilities of loggerheads for over 20 years. In his lab at the University of North Carolina, Lohmann places hatchlings in a large water tank surrounded by a large grid of electromagnetic coils. In 1991, he found that the babies started swimming in the opposite direction if he used the coils to reverse the direction of the magnetic field around them. They could use the field as a compass to get their bearing.

Later, Lohmann showed that they can also use the magnetic field to work out their position. For them, this is literally a matter of life or death. Hatchlings born off the sea coast of Florida spend their early lives in the North Atlantic gyre, a warm current that circles between North America and Africa. If they're swept towards the cold waters outside the gyre, they die. Their magnetic sense keeps them safe.

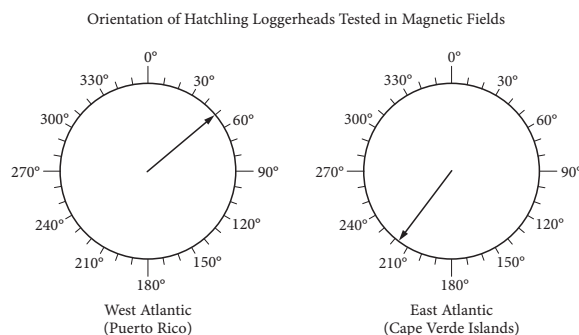
Using his coil-surrounded tank, Lohmann could mimic the magnetic field at different parts of the Earth's surface. If he simulated the field at the northern edge of the gyre, the hatchlings swam southwards. If he simulated the field at the gyre's southern edge, the turtles swam west-northwest. These experiments showed that the turtles can use their magnetic sense to work out their latitude—their position on a north-south axis. Now, Putman has shown that they can also determine their longitude—their position on an east-west axis.

He tweaked his magnetic tanks to simulate the fields in two positions with the same latitude at

opposite ends of the Atlantic. If the field simulated the west Atlantic near Puerto Rico, the turtles swam northeast. If the field matched that on the east Atlantic near the Cape Verde Islands, the turtles swam southwest. In the wild, both headings would keep them within the safe, warm embrace of the North Atlantic gyre.

Before now, we knew that several animal migrants, from loggerheads to reed warblers to sparrows, had some way of working out longitude, but no one knew how. By keeping the turtles in the same conditions, with only the magnetic fields around them changing, Putman clearly showed that they can use these fields to find their way. In the wild, they might well also use other landmarks like the position of the sea, sun and stars.

Putman thinks that the turtles work out their position using two features of the Earth's magnetic field that change over its surface. They can sense the field's inclination, or the angle at which it dips towards the surface. At the poles, this angle is roughly 90 degrees and at the equator, it's roughly zero degrees. They can also sense its intensity, which is strongest near the poles and weakest near the Equator. Different parts of the world have unique combinations of these two variables. Neither corresponds directly to either latitude or longitude, but together, they provide a "magnetic signature" that tells the turtle where it is.



Adapted from Nathan Putman, Courtney Endres, Catherine Lohmann, and Kenneth Lohmann, "Longitude Perception and Bicoordinate Magnetic Maps in Sea Turtles." ©2011 by Elsevier Inc.

Orientation of hatchling loggerheads tested in a magnetic field that simulates a position at the west side of the Atlantic near Puerto Rico (left) and a position at the east side of the Atlantic near the Cape Verde Islands (right). The arrow in each circle indicates the mean direction that the group of hatchlings swam. Data are plotted relative to geographic north (N = 0°).

5

The passage most strongly suggests that Adelita used which of the following to navigate her 9,000-mile journey?

- A) The current of the North Atlantic gyre
- B) Cues from electromagnetic coils designed by Putman and Lohmann
- C) The inclination and intensity of Earth's magnetic field
- D) A simulated "magnetic signature" configured by Lohmann

Estimated Difficulty: Easy	Key: C
----------------------------	--------

Choice C is the best answer. The first paragraph describes the 9,000-mile journey that Adelita made and raises the question, which the rest of the passage tries to answer, of how this loggerhead turtle was able to "steer a route across two oceans to find her destination" (lines 6-7). The answer comes most directly in the last paragraph, which presents Putman's belief that loggerhead turtles "work out their position using two features of the Earth's magnetic field that change over its surface" (lines 61-63): its inclination and its intensity. It is reasonable, therefore, to infer from the passage that this was the method that Adelita used.

Choice A is incorrect because there is no evidence in the passage that Adelita used the current of the North Atlantic gyre to navigate her 9,000-mile journey. The passage does discuss the North Atlantic gyre but only as the place where loggerhead turtle hatchlings "born off the sea coast of Florida spend their early lives" (lines 27-28).

Choice B is incorrect because there is no evidence in the passage that Adelita navigated her 9,000-mile journey with the aid of cues from electromagnetic coils designed by Putman and Lohmann. The passage does say that Putman and Lohmann use electromagnetic coils as part of their research on loggerhead turtles, but the coils are part of tanks used in a laboratory to study loggerhead hatchlings (see lines 16-19).

Choice D is incorrect because there is no evidence in the passage that Adelita navigated her 9,000-mile journey with the aid of a simulated "magnetic signature" configured by Lohmann. The passage does describe how Lohmann and Putman manipulate magnetic fields as part of their research on loggerhead turtle hatchlings (see, for example, lines 16-23), but there is no indication that the two scientists used (or even could use) the kind of equipment necessary for this project outside of laboratory tanks or with Adelita in the wild.

6

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

- A) Lines 1-3 ("In 1996 . . . way")
- B) Lines 32-34 ("Using . . . surface")
- C) Lines 58-60 ("In the wild . . . stars")
- D) Lines 70-73 ("Neither . . . it is")

Estimated Difficulty: Medium	Key: D
------------------------------	--------

Choice D is the best answer because in lines 70-73 the author indicates that "together, [inclination and intensity] provide a 'magnetic signature' that tells the turtle where it is." Therefore, these lines serve as the best evidence for the answer to the previous question.

Choice A is incorrect because in lines 1-3 the author establishes that Adelita made a 9,000-mile journey but does not explain how she navigated it. Therefore, these lines do not serve as the best evidence for the answer to the previous question.

Choice B is incorrect because in lines 32-34 the author indicates that Lohmann is able to "mimic the magnetic field at different parts of the Earth's surface" in his laboratory but does not explain how Adelita navigated her 9,000-mile journey or suggest that Lohmann had any influence over Adelita's trip. Therefore, these lines do not serve as the best evidence for the answer to the previous question.

Choice C is incorrect because in lines 58-60 the author notes that loggerhead turtles "in the wild" may make use of "landmarks like the position of the sea, sun and stars" but does not indicate that Adelita used such landmarks to navigate her 9,000-mile journey. Therefore, these lines do not serve as the best evidence for the answer to the previous question.

7

As used in line 3, "tracked" most nearly means

- A) searched for.
- B) traveled over.
- C) followed.
- D) hunted.

Estimated Difficulty: Easy	Key: C
----------------------------	--------

Choice C is the best answer because the context makes clear that Nichols followed Adelita's "epic journey with a satellite tag" (line 4).

Choice A is incorrect because while "tracked" sometimes means "searched for," it would make little sense in context to say that Nichols searched for Adelita's "epic journey with a satellite tag" (line 4). It is more reasonable to conclude from the passage that Nichols knew about Adelita and her journey and used a satellite tag to help follow it.

Choice B is incorrect because while “tracked” sometimes means “traveled over,” it would make no sense in context to say that Nichols traveled over Adelita’s “epic journey with a satellite tag” (line 4).

Choice D is incorrect because while “tracked” sometimes means “hunted,” it would make no sense in context to say that Nichols hunted Adelita’s “epic journey with a satellite tag” (line 4).

8

The author refers to reed warblers and sparrows (line 53) primarily to

- A) contrast the loggerhead turtle’s migration patterns with those of other species.
- B) provide examples of species that share one of the loggerhead turtle’s abilities.
- C) suggest that most animal species possess some ability to navigate long distances.
- D) illustrate some ways in which the ability to navigate long distances can help a species.

Estimated Difficulty: Easy	Key: B
-----------------------------------	---------------

Choice B is the best answer because the author indicates that reed warblers and sparrows, like loggerhead turtles, had previously been known to have “some way of working out longitude” (line 54).

Choice A is incorrect because although the author notes that loggerhead turtles, reed warblers, and sparrows are all “animal migrants” (line 52), he offers no specifics about the migration patterns of reed warblers and sparrows, and the only connection he draws among the three animals is their recognized ability of somehow “working out longitude” (line 54).

Choice C is incorrect because the author only mentions three “animal migrants” by name (loggerhead turtles, reed warblers, and sparrows) and indicates that “several” such migrants had previously been known to have “some way of working out longitude” (lines 52-54). He makes no claim in the passage that most animal species have some long-distance navigation ability.

Choice D is incorrect because although the author indicates that reed warblers and sparrows, like loggerhead turtles, are “animal migrants” (line 52), he offers no specifics about how the ability to navigate long distances might help reed warblers and sparrows (nor, for that matter, much information about how this ability might help loggerhead turtles).

9

It can reasonably be inferred from the passage and graphic that if scientists adjusted the coils to reverse the magnetic field simulating that in the East Atlantic (Cape Verde Islands), the hatchlings would most likely swim in which direction?

- A) Northwest
- B) Northeast
- C) Southeast
- D) Southwest

Estimated Difficulty: Hard	Key: B
-----------------------------------	---------------

Choice B is the best answer. The passage notes that Lohmann, who studied loggerhead turtle hatchlings “in a large water tank surrounded by a large grid of electromagnetic coils” (lines 17-19) capable of manipulating the magnetic field around the turtles, discovered that the hatchlings would start “swimming in the opposite direction” when he “reverse[d] the direction of the magnetic field around them” (lines 20-22). The graphic (whose caption establishes that geographic north is represented by 0 degrees) indicates that loggerhead hatchlings tested in a magnetic field that simulates a position at the east side of the Atlantic near the Cape Verde Islands would normally travel in a southwesterly direction (around 218 degrees). Given the above information, it is reasonable to infer that if the magnetic field were reversed, the turtles would travel in a northeasterly direction.

Choice A is incorrect because information in the passage and graphic suggests that the loggerhead turtle hatchlings would travel in a northeasterly, and not a northwesterly, direction if scientists reversed the magnetic field simulating a position at the east side of the Atlantic near the Cape Verde Islands.

Choice C is incorrect because information in the passage and graphic suggests that the loggerhead turtle hatchlings would travel in a northeasterly, and not a southeasterly, direction if scientists reversed the magnetic field simulating a position at the east side of the Atlantic near the Cape Verde Islands.

Choice D is incorrect because information in the passage and graphic suggests that the loggerhead turtle hatchlings would travel in a northeasterly, and not a southwesterly, direction if scientists reversed the magnetic field simulating a position at the east side of the Atlantic near the Cape Verde Islands. The graphic indicates that the hatchlings travel southwesterly under the normal (nonreversed) simulated conditions.

Writing and Language Test Overview

The Writing and Language Test asks you to be an editor and improve passages that were written especially for the test—and that include deliberate errors.

- Total questions: 44 passage-based questions with multiple-choice responses.
- Time allotted: 35 minutes.
- Calculators may not be used or be on your desk.

What the Writing and Language Test Is Like

When you take the Writing and Language Test, you'll do things that people do all the time when they edit: read, find mistakes and weaknesses, and fix them.

The good news: You do these things every time you revise your own schoolwork or workshop your writing with a friend.

You'll revise the passages on the test for development, organization, and effective language use as well as edit the passages to ensure they follow the conventions of standard written English grammar, usage, and punctuation.

What You'll Read

Writing and Language passages range in length from about 400 to 450 words and vary in complexity. The passages you'll read will be informative/explanatory texts, nonfiction narratives, or arguments and will cover topics in the areas of careers, history/social studies, the humanities, and science. One or more passages will be accompanied by one or more informational graphics.

What the Writing and Language Test Measures

The Writing and Language Test measures the skills and knowledge you use to spot and fix problems in writing—the same skills and knowledge you've been acquiring in high school and that you'll need for success in college and career. All questions are multiple choice and based on passages and any supplementary material, such as tables and graphs.

Command of Evidence

Questions that test command of evidence ask you to improve the way passages develop information and ideas. For instance, you might choose an answer that sharpens an argumentative claim or adds a relevant supporting detail.

Words in Context

Some questions ask you to improve word choice. You'll need to choose the best words to use based on the text surrounding them. Your goal will be to make a passage more precise or concise or to improve syntax, style, or tone.

Expression of Ideas

Some questions ask about a passage's topic development, organization, and language use. For instance, you may be asked which words or structural changes improve how a point is made or which phrase or sentence provides the most effective transition between ideas.

Standard English Conventions

Some questions relate to aspects of the mechanics of writing: sentence structure, usage, and punctuation. You'll be asked to edit text so that it conforms to the conventions of standard written English.

Analysis in History/Social Studies and in Science

You'll be asked to read and analyze passages about topics in history/social studies and in science and to make decisions that improve the passages (such as revising a paragraph to be more consistent with the data presented in an informational graphic).

Tips for the Writing and Language Test

To answer some questions, you'll need to look closely at a single sentence. Others require thinking about the entire passage or interpreting a graphic. For instance, you might be asked to choose where a sentence should be placed or to correct a misinterpretation of a scientific table or graph.

- To make decisions that improve the passages, read the passages carefully.
- Rote recall of language rules isn't tested, nor are any questions based on short snippets of text taken out of context. The best answer to each question represents how a writer should develop, organize, and use language in a multiparagraph passage. You are demonstrating that you can make context-based improvements to the text.
- The most common format for the questions offers 3 alternatives to an underlined portion of the passage along with the option of not changing the passage's original wording. Remember to answer these questions in the context of the whole passage.
- Stay with a passage until you have answered as many questions as you can before you proceed to the next passage. Don't jump from passage to passage.
- In your test booklet, mark each question you skip so you can easily go back to it later if you have time.
- Remember that all questions are worth 1 point regardless of the type or difficulty. You don't lose points for guessing wrong, so you should try to answer each question as best you can.

Sample Writing and Language Test Materials

Following are samples of the kinds of passages and questions that may appear on the Writing and Language Test. For each set of sample materials:

- Read the passage carefully.
- Decide on the best answer to each question.
- Read the explanation for the best answer to each question and for the answer you chose (if they are different).

On the actual test, the passages and questions will be in side-by-side columns, with each passage (spread over multiple pages) in the left column and associated multiple-choice questions in the right column. The directions that follow match the directions on the actual test.

Writing and Language Test Questions

DIRECTIONS

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

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

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

Questions 1-5 are based on the following passage.

Dong Kingman: Painter of Cities

A 1954 documentary about renowned watercolor painter Dong Kingman shows the artist sitting on a stool on Mott Street in New York City’s Chinatown. A crowd of admiring spectators watches as Kingman squeezes dollops of paint from several tubes into a tin watercolor box. From just a few primary colors, Kingman creates dozens of beautiful hues as he layers the translucent paint onto the paper on his easel. Each stroke of the brush and dab of the sponge transforms thinly sketched outlines into buildings, shop signs, and streetlamps. The street scene Kingman begins composing in this short film is very much in keeping with the urban landscapes for which he is best known.

[1] Kingman was keenly interested in landscape painting from an early age. [2] In Hong Kong, where Kingman completed his schooling, teachers

at that time customarily assigned students a formal “school name.” [3] His interest was so keen, in fact, that he was named after it. [4] The young boy who had been Dong Moy Shu became Dong Kingman. [5] The name Kingman was selected for its two parts: “king” and “man,” Cantonese for “scenery” and “composition.” [6] As Kingman developed as a painter, his works were often compared to 1 paintings by Chinese landscape artists dating back to CE 960, a time when a strong tradition of landscape painting emerged in Chinese art. [7] Kingman, however, 2 vacated from that tradition in a number of ways, most notably in that he chose to focus not on natural landscapes, such as mountains and rivers, but on cities. 3

In his urban landscapes, Kingman captures the vibrancy of crowded cities. His fine brushwork conveys detailed street-level activity: a peanut vendor pushing his cart on the sidewalk, a pigeon pecking for crumbs around a fire 4 hydrant, an old man tending to a baby outside a doorway. His broader brush strokes and sponge-painted shapes create majestic city skylines, with skyscrapers towering in the background, bridges connecting neighborhoods on either side of a river, and enormous ships docking at busy urban ports. To art critics and fans alike, these city scenes represent the innovative spirit of twentieth-century urban Modernism.

During his career, Kingman exhibited his work 5 internationally. He garnered much acclaim. In 1936, a critic described one of Kingman’s solo exhibits as “twenty of the freshest, most satisfying watercolors that have been seen hereabouts in many a day.” Since Kingman’s death in 2000, museums across the United States and in China have continued to ensure that his now-iconic landscapes remain available for the public to enjoy.

1

- A) NO CHANGE
- B) Chinese landscape artists
- C) painters of Chinese landscapes
- D) artists

Estimated Difficulty: Medium

Key: A

Choice A is the best answer because it creates a comparison between like terms: “works” by Kingman and “paintings by Chinese landscape artists.”

Choice B is incorrect because it creates a comparison between unlike terms: “works” by Kingman and “Chinese landscape artists.”

Choice C is incorrect because it creates a comparison between unlike terms: “works” by Kingman and “painters of Chinese landscapes.”

Choice D is incorrect because it creates a comparison between unlike terms: “works” by Kingman and “artists.”

2

- A) NO CHANGE
- B) evacuated
- C) departed
- D) retired

Estimated Difficulty: Hard

Key: C

Choice C is the best answer because “departed” is the most contextually appropriate way to indicate that Kingman had deviated from the tradition of Chinese landscape painting in a number of ways.

Choice A is incorrect because while “vacated” does offer some sense of “leaving,” it would be awkward and unconventional to say that a person was vacating from a tradition in a number of ways.

Choice B is incorrect because while “evacuated” does offer some sense of “leaving,” it would be awkward and unconventional to say that a person was evacuating from a tradition in a number of ways.

Choice D is incorrect because while “retired” does offer some sense of “leaving,” it would be awkward and unconventional to say that a person was retiring from a tradition in a number of ways.

3

To make this paragraph most logical, sentence 3 should be placed

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

Estimated Difficulty: Easy

Key: C

Choice C is the best answer because placing sentence 3 after sentence 1 makes the paragraph most cohesive. Sentence 3 refers to Kingman’s “interest” being “so keen,” a continuation of the idea in sentence 1, which says that “Kingman was keenly interested in landscape painting from an early age.”

Choice A is incorrect because leaving sentence 3 where it is now creates a sequence of sentences that lacks sufficient cohesion. Keeping sentence 3 in its current location disrupts the link between sentence 2 (which describes the concept of “school names” in Hong Kong) and sentence 4 (which reveals that Dong Kingman was the school name of Dong Moy Shu).

Choice B is incorrect because placing sentence 3 before sentence 1 creates a sequence of sentences that lacks sufficient cohesion. Putting sentence 3 at the beginning of the paragraph would offer a poor introduction to the paragraph, in large part because sentence 3 builds directly on a point made in sentence 1.

Choice D is incorrect because placing sentence 3 after sentence 4 creates a sequence of sentences that lacks sufficient cohesion. Putting sentence 3 after sentence 4 would disrupt the link between sentence 4 (which mentions that Dong Moy Shu was given the school name Dong Kingman) and sentence 5 (which explains what the two parts composing the name Kingman mean in Cantonese).

4

- A) NO CHANGE
 B) hydrant—
 C) hydrant:
 D) hydrant

Estimated Difficulty: Easy

Key: A

Choice A is the best answer because a comma after the word “hydrant” separates the phrase “a pigeon pecking for crumbs around a fire hydrant” from the phrase “an old man tending to a baby outside a doorway.” A comma is also consistent with the punctuation choice made to separate the first two phrases in the series following the colon in the sentence.

Choice B is incorrect because a dash is not a conventional choice for punctuating items in a series.

Choice C is incorrect because although a colon can be used to introduce a series, it is not a conventional choice for separating items within a series.

Choice D is incorrect because it fuses together two items in the series. Separating the phrases “a pigeon pecking for crumbs around a fire hydrant” and “an old man tending to a baby outside a doorway” requires punctuation (and could also involve a coordinating conjunction).

5

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

- A) internationally, and Kingman also garnered
 B) internationally; from exhibiting, he garnered
 C) internationally but garnered
 D) internationally, garnering

Estimated Difficulty: Medium

Key: D

Choice D is the best answer because it combines the sentences logically and efficiently, with the original second sentence becoming a participial phrase describing Kingman.

Choice A is incorrect because it creates a wordy and awkward construction and because it fails to link the acclaim Kingman received with the exhibition of his work.

Choice B is incorrect because it creates a repetitive and awkward construction.

Choice C is incorrect because “but” suggests contrast or exception, neither of which makes sense in the context of the sentence.

Questions 6-12 are based on the following passage and supplementary material.

A Life in Traffic

A subway system is expanded to provide service to a growing suburb. A bike-sharing program is adopted to encourage nonmotorized transportation.

6 To alleviate rush hour traffic jams in a congested downtown area, stoplight timing is coordinated. When any one of these changes occurs, it is likely the result of careful analysis conducted by transportation planners.

The work of transportation planners generally includes evaluating current transportation needs, assessing the effectiveness of existing facilities, and improving those facilities or **7** they design new ones. Most transportation planners work in or near cities, but some are employed in rural areas. Say, for example, a large factory is built on the outskirts of a small town. Traffic to and from that location would increase at the beginning and end of work shifts. The transportation

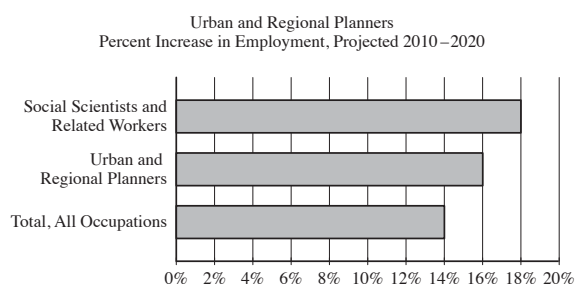
8 planner’s job, might involve conducting a traffic count to determine the daily number of vehicles traveling on the road to the new factory. If analysis of the traffic count indicates that there is more traffic than the current design of the road can efficiently accommodate, the transportation planner might recommend widening the road to add another lane.

Transportation planners work closely with a number of community stakeholders, such as government officials and other interested organizations and individuals. **9** Next, representatives from the local public health department might provide input in designing a network of trails and sidewalks to encourage people to walk more. **10** According to the American Heart Association, walking provides numerous benefits related to health and well-being. Members of the Chamber of Commerce might share suggestions about designing transportation and parking facilities to support local businesses.

11 People who pursue careers in transportation planning have a wide variety of educational backgrounds. A two-year degree in transportation

technology may be sufficient for some entry-level jobs in the field. Most jobs, however, require at least a bachelor's degree; majors of transportation planners are varied, including fields such as urban studies, civil engineering, geography, or transportation and logistics management. For many positions in the field, a master's degree is required.

Transportation planners perform critical work within the broader field of urban and regional planning. As of 2010, there were approximately 40,300 urban and regional planners employed in the United States. The United States Bureau of Labor Statistics forecasts steady job growth in this field, **12** projecting that 16 percent of new jobs in all occupations will be related to urban and regional planning. Population growth and concerns about environmental sustainability are expected to spur the need for transportation planning professionals.



Adapted from United States Bureau of Labor Statistics, Employment Projections program. "All occupations" includes all occupations in the United States economy.

6

Which choice best maintains the sentence pattern already established in the paragraph?

- A) NO CHANGE
- B) Coordinating stoplight timing can help alleviate rush hour traffic jams in a congested downtown area.
- C) Stoplight timing is coordinated to alleviate rush hour traffic jams in a congested downtown area.
- D) In a congested downtown area, stoplight timing is coordinated to alleviate rush hour traffic jams.

Estimated Difficulty: Medium

Key: C

Choice C is the best answer because it most closely maintains the sentence pattern established by the two preceding sentences, which begin with noun and passive verb phrases ("A subway system is expanded," "A bike-sharing program is adopted").

Choice A is incorrect because it does not maintain the sentence pattern established by the two preceding sentences. Rather, it begins the sentence with an infinitive phrase.

Choice B is incorrect because it does not maintain the sentence pattern established by the two preceding sentences. Rather, it begins the sentence with a gerund phrase.

Choice D is incorrect because it does not maintain the sentence pattern established by the two preceding sentences. Rather, it places a prepositional phrase, "in a congested downtown area," at the beginning of the sentence.

7

- A) NO CHANGE
- B) to design
- C) designing
- D) design

Estimated Difficulty: Easy

Key: C

Choice C is the best answer because "designing" maintains parallelism with "evaluating," "assessing," and "improving."

Choice A is incorrect because "they design" does not maintain parallelism with "evaluating," "assessing," and "improving."

Choice B is incorrect because "to design" does not maintain parallelism with "evaluating," "assessing," and "improving."

Choice D is incorrect because "design" does not maintain parallelism with "evaluating," "assessing," and "improving."

8

- A) NO CHANGE
- B) planner's job
- C) planners job,
- D) planners job

Estimated Difficulty: Easy**Key:** B

Choice B is the best answer because it correctly uses an apostrophe to indicate possession and does not introduce any unnecessary punctuation.

Choice A is incorrect because while it correctly indicates the possessive relationship between "transportation planner" and "job," it introduces an unnecessary comma after the word "job."

Choice C is incorrect because it does not indicate the possessive relationship between "transportation planner" and "job" and because it introduces an unnecessary comma after the word "job."

Choice D is incorrect because it does not indicate the possessive relationship between "transportation planner" and "job."

9

- A) NO CHANGE
- B) For instance,
- C) Furthermore,
- D) Similarly,

Estimated Difficulty: Medium**Key:** B

Choice B is the best answer because the transitional phrase "For instance" logically indicates that what follows provides an example related to the previous sentence. "Representatives from the local public health department" is an example of the kinds of people with whom transportation planners work.

Choice A is incorrect because the transitional word "Next" indicates sequence, which is not logical given that what follows provides an example related to the previous sentence.

Choice C is incorrect because the transitional word "Furthermore" indicates addition, which is not logical given that what follows provides an example related to the previous sentence.

Choice D is incorrect because the transitional word "Similarly" indicates comparison or likeness, which is not logical given that what follows provides an example related to the previous sentence.

10

The writer is considering deleting the underlined sentence. Should the sentence be kept or deleted?

- A) Kept, because it provides supporting evidence about the benefits of walking.
- B) Kept, because it provides an additional example of a community stakeholder with whom transportation planners work.
- C) Deleted, because it blurs the paragraph's focus on the community stakeholders with whom transportation planners work.
- D) Deleted, because it doesn't provide specific examples of what the numerous benefits of walking are.

Estimated Difficulty: Medium**Key:** C

Choice C is the best answer because it identifies the best reason the underlined sentence should not be kept. At this point in the passage and the paragraph, a general statement about the benefits of walking only serves to interrupt the discussion of the community stakeholders with whom transportation planners work.

Choice A is incorrect because the underlined sentence should not be kept. Although the sentence theoretically provides supporting evidence about the benefits of walking, the passage has not made a claim that needs to be supported in this way, and including such a statement only serves to interrupt the discussion of the community stakeholders with whom transportation planners work.

Choice B is incorrect because the underlined sentence should not be kept. Although the American Heart Association could theoretically be an example of "other interested organizations" with which transportation planners work, the sentence does not suggest that this is the case. Instead, the association is merely the source for the general statement about the benefits of walking, a statement that only serves to interrupt the discussion of the actual community stakeholders with whom transportation planners work.

Choice D is incorrect because although the underlined sentence should be deleted, it is not because the sentence lacks specific examples of the numerous benefits of walking. Adding such examples would only serve to blur the focus of the paragraph further with general factual information, as the paragraph's main purpose is to discuss the community stakeholders with whom transportation planners work.

11

- A) NO CHANGE
- B) People, who pursue careers in transportation planning,
- C) People who pursue careers, in transportation planning,
- D) People who pursue careers in transportation planning,

Estimated Difficulty: Easy

Key: A

Choice A is the best answer because “who pursue careers in transportation planning” is, in context, a restrictive clause that should not be set off with punctuation. “Who pursue careers in transportation planning” is essential information defining who the “people” are.

Choice B is incorrect because it incorrectly sets off the restrictive clause “who pursue careers in transportation planning” with commas as though the clause were nonrestrictive or not essential to defining who the “people” are.

Choice C is incorrect because it incorrectly sets off the essential sentence element “in transportation planning” with commas as though the phrase were not essential to the meaning of the sentence. “In transportation planning” is essential information defining what the “careers” are.

Choice D is incorrect because it introduces an unnecessary comma after the word “planning,” incorrectly setting off the subject of the sentence (“people who pursue careers in transportation planning”) from the predicate (“have a wide variety of educational backgrounds”).

12

Which choice completes the sentence with accurate data based on the graph?

- A) NO CHANGE
- B) warning, however, that job growth in urban and regional planning will slow to 14 percent by 2020.
- C) predicting that employment of urban and regional planners will increase 16 percent between 2010 and 2020.
- D) indicating that 14 to 18 percent of urban and regional planning positions will remain unfilled.

Estimated Difficulty: Hard

Key: C

Choice C is the best answer because it completes the sentence with an accurate interpretation of data in the graph. The graph displays projections of how much growth in employment there is expected to be between 2010 and 2020 for “social scientists and related workers,” for “urban and regional planners,” and in “all occupations” in the U.S. economy. According to the graph, the employment of urban and regional planners is expected to increase 16 percent between 2010 and 2020.

Choice A is incorrect because the data in the graph do not support the claim that 16 percent of new jobs in all occupations will be related to urban and regional planning.

Choice B is incorrect because the data in the graph do not support the claim that job growth in urban and regional planning will slow to 14 percent by 2020.

Choice D is incorrect because the data in the graph do not support the claim that 14 to 18 percent of urban and regional planning positions will remain unfilled.

Math

The PSAT 10 Math Test covers math practices, emphasizing problem solving, modeling, using tools strategically, and using algebraic structure. The questions test your ability to solve problems and use appropriate approaches and tools strategically.

Math Test Overview

The Math Test includes a portion that allows the use of a calculator and a portion that does not.

- Total questions: 48 (17 questions on the no-calculator portion; 31 questions on the calculator portion).
 - ♦ 40 standard multiple-choice questions.
 - ♦ 8 student-produced response questions.
- Time allotted for Math Test – No Calculator: 25 minutes; time allotted for Math Test – Calculator: 45 minutes.

What the Math Test Is Like

Instead of testing you on every math topic, the PSAT 10 asks you to use the math that you'll rely on most in all sorts of situations. Questions on the Math Test are designed to mirror the problem solving and modeling you'll do in:

- College math, science, and social science courses
- Jobs that you hold
- Your personal life

For instance, to answer some questions you'll need to use several steps because in the real world, a single calculation is rarely enough to get the job done.

- Most math questions will be multiple choice, but some—called student-produced responses—ask you to come up with the answer rather than select the answer.
- Some parts of the test include several questions about a single scenario.

What the Math Test Measures

Fluency

The Math Test is a chance to show that you:

- Carry out procedures flexibly, accurately, efficiently, and strategically.
- Solve problems quickly by identifying and using the most efficient solution approaches.

This might involve solving a problem by inspection, finding a shortcut, or reorganizing the information you've been given.

Conceptual Understanding

You'll demonstrate your grasp of math concepts, operations, and relations. For instance, you might be asked to make connections between properties of linear equations, their graphs, and the contexts they represent.

Applications

Some real-world problems ask you to analyze a situation, determine the essential elements required to solve the problem, represent the problem mathematically, and carry out a solution.

Calculator Use

Calculators are important tools, and to succeed after high school, you'll need to know how—and when—to use them. In the Math Test – Calculator portion of the test, you'll be able to focus on complex modeling and reasoning because your calculator can save you time.

However, using a calculator, like any tool, isn't always the best way to solve a problem. The Math Test includes some questions that it's better not to use a calculator for, even though you're allowed to. With these questions, you'll probably find that the structure of the problem or your reasoning skills will lead you to the answers more efficiently.

Calculator Smarts

- Bring your own calculator. You can't share one.
- Don't bring a calculator you've never used before. Bring one you know. Practice for the test using the same calculator you'll use on test day.
- It may help to do scratch work in the test book. Get your thoughts down before using your calculator.
- Make sure your calculator is in good working order with fresh batteries. The testing staff might not have batteries or extra calculators. If your calculator fails during testing and you have no backup, you can complete the test without it. All questions can be answered without a calculator.

Answering Student-Produced Response Questions

You'll see directions in the test book for answering student-produced response questions. (See page 28 for an example.) Take the time to be comfortable with the format before test day. Carefully read the directions for answering these questions. The directions explain what you can and can't do when entering your answers on the answer sheet.

Tips for the Math Test

- Familiarize yourself with the directions ahead of time.
- You don't have to memorize formulas. Commonly used formulas are provided with the test directions at the beginning of each Math Test portion. Other formulas that are needed are provided with the test questions themselves. It's up to you to decide which formula is appropriate to a question.
- Read the problem carefully. Look for key words that tell you what the problem is asking. Before you solve each problem, ask yourself these questions: What is the question asking? What do I know?
- With some problems, it may be useful to draw a sketch or diagram of the given information.
- Use the test booklet for scratch work. You're not expected to do all the reasoning and figuring in your head. You won't receive credit for anything written in the booklet, but you'll be able to check your work easily later.
- In the portion of the test that allows calculator use, be strategic when choosing to use your calculator.
- If you don't know the correct answer to a multiple-choice question, eliminate some of the choices. It's sometimes easier to find the wrong answers than the correct one. On some questions, you may even be able to eliminate all the incorrect choices. Remember that you won't lose points for incorrect answers, so plan to make your best guess if you don't know the answer.
- Check your answer to make sure it's a reasonable reply to the question asked. This is especially true for student-produced response questions, where no answer choices are given.

Sample Math Test Materials

The sample math questions that follow show the kinds of questions that may appear on both portions of the Math Test. For these sample materials:

- Review the notes at the beginning of each portion. They match the notes on the actual test.
- Decide on the correct answer to each multiple-choice question, then read the explanation for the correct answer to each question and for the answer you chose (if they are different).
- Follow the directions for the student-produced response questions shown later in this guide. The directions match the directions on the actual test.

Math Test – No Calculator Questions

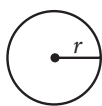
DIRECTIONS

For questions 1-4, solve each problem, choose the best answer from the choices provided, and fill in the corresponding bubble on your answer sheet. **For questions 5-6**, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 5 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

NOTES

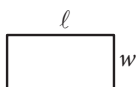
1. The use of a calculator **is not permitted**.
2. All variables and expressions used represent real numbers unless otherwise indicated.
3. Figures provided in this test are drawn to scale unless otherwise indicated.
4. All figures lie in a plane unless otherwise indicated.
5. Unless otherwise indicated,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

REFERENCE

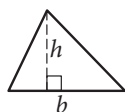


$$A = \pi r^2$$

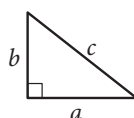
$$C = 2\pi r$$



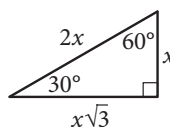
$$A = \ell w$$



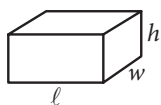
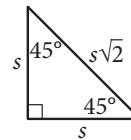
$$A = \frac{1}{2}bh$$



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



Special Right Triangles



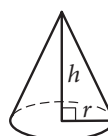
$$V = \ell wh$$



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



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



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



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

The number of degrees of arc in a circle is 360.

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

The sum of the measures in degrees of the angles of a triangle is 180.

1

$$\frac{5(k+2)-7}{6} = \frac{13-(4-k)}{9}$$

In the equation above, what is the value of k ?

- A) $\frac{9}{17}$
 B) $\frac{9}{13}$
 C) $\frac{33}{17}$
 D) $\frac{33}{13}$

Estimated Difficulty: Medium	Key: B
------------------------------	--------

Choice B is correct. Simplifying the numerators

yields $\frac{5k+3}{6} = \frac{9+k}{9}$, and cross-multiplication gives

$$45k + 27 = 54 + 6k. \text{ Solving for } k \text{ yields } k = \frac{9}{13}.$$

Choice A is incorrect. This value may result from not correctly applying the distributive property on the right-hand side, resulting in the expression $13 - 4 - k$ in the numerator. Correctly applying the distributive property yields $13 - (4 - k) = 13 - 4 + k$ in the numerator.

Choice C is incorrect. This value may result from not correctly applying the distributive property on the left-hand side, resulting in the expression $5k + 2 - 7$. Correctly applying the distributive property yields $5(k + 2) - 7 = 5k + 3$ in the numerator.

Choice D is incorrect. This value may result from not using the appropriate order of operations when simplifying either numerator.

2

$$4x - y = 3y + 7$$

$$x + 8y = 4$$

Based on the system of equations above, what is the value of the product xy ?

- A) $-\frac{3}{2}$
 B) $\frac{1}{4}$
 C) $\frac{1}{2}$
 D) $\frac{11}{9}$

Estimated Difficulty: Medium	Key: C
------------------------------	--------

Choice C is correct. There are several solution methods possible, but all involve persevering in solving for the two variables and calculating the product. For example, combining like terms in the first equation yields $4x - 4y = 7$ and then multiplying that by 2 gives $8x - 8y = 14$. When this transformed equation is added to the second given equation, the y -terms are eliminated, leaving an equation in just one variable: $9x = 18$, or $x = 2$. Substituting 2 for x in the second equation (one could use either to solve) yields $2 + 8y = 4$, which gives $y = \frac{1}{4}$. Finally, the product xy is $2 \times \frac{1}{4} = \frac{1}{2}$.

Choice A is incorrect. Students who select this option have most likely made a calculation error in transforming the second equation (using $-4x - 8y = -16$ instead of $-4x - 32y = -16$) and used it to eliminate the x -terms.

Choice B is incorrect. This is the value of y for the solution of the system, but it has not been put back into the system to solve for x to determine the product xy .

Choice D is incorrect. Not understanding how to eliminate a variable when solving a system, a student may have added the equations $4x - 4y = 7$ and $x + 8y = 4$ to yield $5x + 4y = 11$. From here, a student may mistakenly simplify the left-hand side of this resulting equation to yield $9xy = 11$ and then proceed to use division by 9 on both sides in order to solve for xy .

3

$$\frac{1}{x} + \frac{2}{x} = \frac{1}{5}$$

Anise needs to complete a printing job using both of the printers in her office. One of the printers is twice as fast as the other, and together the printers can complete the job in 5 hours. The equation above represents the situation described. Which of the following describes what the expression $\frac{1}{x}$ represents in this equation?

- A) The time, in hours, that it takes the slower printer to complete the printing job alone
- B) The portion of the job that the slower printer would complete in one hour
- C) The portion of the job that the faster printer would complete in two hours
- D) The time, in hours, that it takes the slower printer to complete $\frac{1}{5}$ of the printing job

Estimated Difficulty: Hard**Key:** B

Choice B is correct. From the description given, $\frac{1}{5}$ is the portion of the job that the two printers, working together, can complete in one hour, and each term in the sum on the left side is the part of this $\frac{1}{5}$ of the job that one of the printers contributes. Since one of the printers is twice as fast as the other, $\frac{2}{x}$ describes the portion of the job that the faster printer is able to complete in one hour and $\frac{1}{x}$ describes the portion of the job that the slower printer is able to complete in one hour.

Choice A is incorrect. The student may have not seen that in this context, the rates (that is, the work completed in a fixed time) of the printers can be added to get the combined rate, but the times it takes each printer to complete the job cannot be added to get the time for both printers working together, since the time for printers working together is less than, not greater than, the times for each printer alone. Hence the terms in the sum cannot refer to hours worked. In fact, the time it would take the slower printer to complete the whole job is x hours.

Choice C is incorrect. The student may have seen that $\frac{1}{x}$ is the smaller term in the sum, wrongly concluded that the smaller term must apply to the faster printer, and then assumed the 2 in the numerator of the second term implies the equation describes work completed in 2 hours. In fact, the

portion of the job that the faster printer could

complete in 2 hours is $(2)\left(\frac{2}{x}\right) = \frac{4}{x}$.

Choice D is incorrect. The student may have correctly seen that the value $\frac{1}{5}$ on the right side refers to the portion of the job completed, but not seen that in this context, the rates (that is, the work completed in a fixed time) of the printers can be added to get the combined rate, but the times it takes each printer to complete the job cannot be added to get the time for both printers working together. Hence the terms in the sum cannot refer to hours worked. In fact, the time it takes the slower printer to complete $\frac{1}{5}$ of the job is $\frac{x}{5}$ hours.

4

The graph of $y = (2x - 4)(x - 4)$ is a parabola in the xy -plane. In which of the following equivalent equations do the x - and y -coordinates of the vertex of the parabola appear as constants or coefficients?

- A) $y = 2x^2 - 12x + 16$
- B) $y = 2x(x - 6) + 16$
- C) $y = 2(x - 3)^2 + (-2)$
- D) $y = (x - 2)(2x - 8)$

Estimated Difficulty: Medium**Key:** C

Choice C is correct. The equation $y = (2x - 4)(x - 4)$ can be written in vertex form, $y = a(x - h)^2 + k$, to display the vertex, (h, k) , of the parabola. To put the equation in vertex form, first multiply: $(2x - 4)(x - 4) = 2x^2 - 8x - 4x + 16$. Then, add like terms, $2x^2 - 8x - 4x + 16 = 2x^2 - 12x + 16$. The next step is completing the square.

$$y = 2x^2 - 12x + 16$$

$$y = 2(x^2 - 6x) + 16$$

Isolate the x^2 term by factoring.

$$y = 2(x^2 - 6x + 9 - 9) + 16$$

Make a perfect square in the parentheses.

$$y = 2(x^2 - 6x + 9) - 18 + 16$$

Move the extra term out of the parentheses.

$$y = 2(x - 3)^2 - 18 + 16$$

Factor inside the parentheses.

$$y = 2(x - 3)^2 - 2$$

Simplify the remaining terms.

Therefore, the coordinates of the vertex, $(3, -2)$, are both revealed only in choice C. Since you are told that all of the equations are equivalent, simply knowing the form that displays the coordinates of the vertex will save all of these steps—this is known as “seeing structure in the expression or equation.”


Choice A is incorrect; it is in standard form, displaying the y -value of the y -intercept of the graph (0, 16) as a constant.

Choice B is incorrect; it displays the y -value of the y -intercept of the graph (0, 16) as a constant.

Choice D is incorrect; it displays the x -value of one of the x -intercepts of the graph (2, 0) as a constant.

Student-Produced Response Math Questions

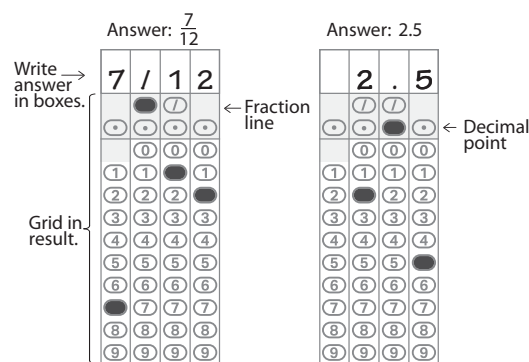
For some questions in the Math Test, you will be asked to solve the problem and enter your answer in the grid, as described below, on the answer sheet.

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

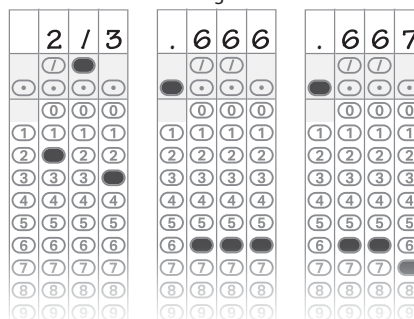
Answer: $\frac{7}{12}$ Answer: 2.5

Write answer in boxes. ← Fraction line ← Decimal point

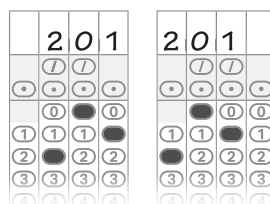
Grid in result.



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



Answer: 201 – either position is correct



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

5

If $\frac{1}{2}x + \frac{1}{3}y = 4$, what is the value of $3x + 2y$?

Estimated Difficulty: Medium

Key: 24

Using the structure of the equation allows you to quickly solve the problem if you see that multiplying both sides of the equation by 6 clears the fractions and yields $3x + 2y = 24$.

6

$$x^2 + y^2 - 6x + 8y = 144$$

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

Estimated Difficulty: Hard

Key: 26

Completing the square yields the equation $(x - 3)^2 + (y + 4)^2 = 169$, the standard form of an equation of the circle. Understanding this form results in the equation $r^2 = 169$, which when solved for r gives the value of the radius as 13. The diameter is twice the value of the radius; therefore, the diameter is 26.

Math Test – Calculator Questions

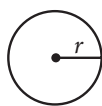
DIRECTIONS

For questions 1-5, solve each problem, choose the best answer from the choices provided, and fill in the corresponding bubble on your answer sheet. **For question 6**, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 5 on page 28 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

NOTES

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

REFERENCE

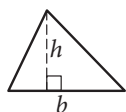


$$A = \pi r^2$$

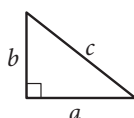
$$C = 2\pi r$$



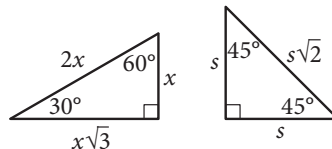
$$A = \ell w$$



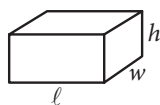
$$A = \frac{1}{2}bh$$



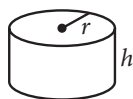
$$c^2 = a^2 + b^2$$



Special Right Triangles



$$V = \ell wh$$



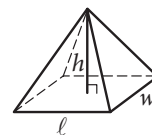
$$V = \pi r^2 h$$



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



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



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

The number of degrees of arc in a circle is 360.

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

The sum of the measures in degrees of the angles of a triangle is 180.

1

Aaron is staying at a hotel that charges \$99.95 per night plus tax for a room. A tax of 8% is applied to the room rate, and an additional onetime untaxed fee of \$5.00 is charged by the hotel. Which of the following represents Aaron's total charge, in dollars, for staying x nights?

- A) $(99.95 + 0.08x) + 5$
 B) $1.08(99.95x) + 5$
 C) $1.08(99.95x + 5)$
 D) $1.08(99.95 + 5)x$

Estimated Difficulty: Easy

Key: B

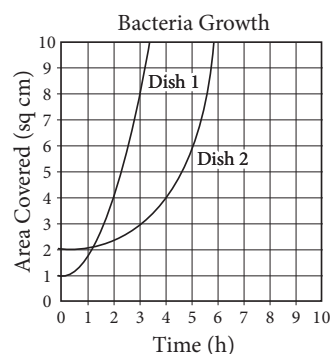
Choice B is correct. The total charge that Aaron will pay is the room rate, the 8% tax on the room rate, and a fixed fee. If Aaron stayed x nights, then the total charge is $(99.95x + 0.08 \times 99.95x) + 5$, which can be rewritten as $1.08(99.95x) + 5$.

Choice A is incorrect. The expression includes only one night's stay in the room and does not accurately account for tax on the room.

Choice C is incorrect. The expression includes tax on the fee, and the hotel does not charge tax on the \$5.00 fee.

Choice D is incorrect. The expression includes tax on the fee and a fee charge for each night.

2



A researcher places two colonies of bacteria into two petri dishes that each have an area of 10 square centimeters. After the initial placement of the bacteria ($t = 0$), the researcher measures and records the area covered by the bacteria in each dish every ten minutes. The data for each dish were fit by a smooth curve, as shown in the graph, where each curve represents the area of a dish covered by bacteria as a function of time, in hours. Which of the following is a correct statement about the data above?

- A) At time $t = 0$, both dishes are 100% covered by bacteria.
 B) At time $t = 0$, bacteria covers 10% of Dish 1 and 20% of Dish 2.
 C) At time $t = 0$, Dish 2 is covered with 50% more bacteria than Dish 1.
 D) For the first hour, the area covered in Dish 2 is increasing at a higher average rate than the area covered in Dish 1.

Estimated Difficulty: Medium

Key: B

Choice B is the correct answer. Each petri dish has area 10 square centimeters, and so at time

$t = 0$, Dish 1 is 10% covered $\left(\frac{1}{10}\right)$ and Dish 2 is 20% covered $\left(\frac{2}{10}\right)$. Thus the statement in B is true.

Choice A is incorrect. At the end of the observations, both dishes are 100% covered with bacteria, but at time $t = 0$, neither dish is 100% covered.

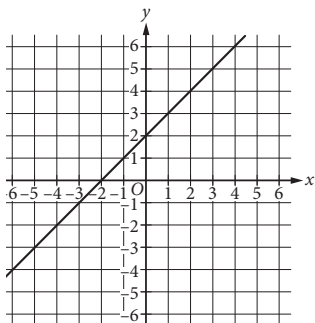
Choice C is incorrect. At time $t = 0$, Dish 1 is covered with 50% less bacteria than is Dish 2, but Dish 2 is covered with 100% more, not 50% more, bacteria than is Dish 1.

Choice D is incorrect. After the first hour, it is still true that more of Dish 2 is covered by bacteria than is Dish 1, but for the first hour the area of Dish 1 that is covered has been increasing at a higher average rate (about 0.8 sq cm/hour) than the area of Dish 2 (about 0.1 sq cm/hour).

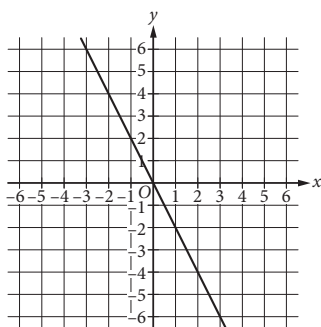
3

If k is a positive constant different from 1, which of the following could be the graph of $y - x = k(x + y)$ in the xy -plane?

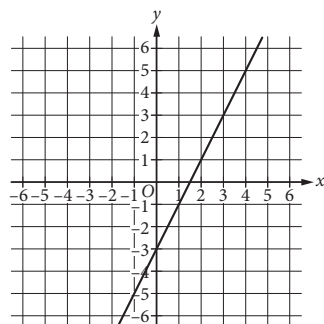
A)



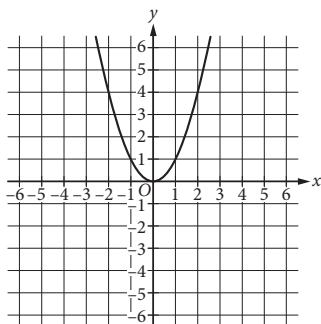
B)



C)



D)

**Estimated Difficulty:** Hard**Key:** B

Choice B is correct. Manipulating the equation to solve for y gives $y = \left(\frac{1+k}{1-k}\right)x$, revealing that

the graph of the equation must be a line that passes through the origin. Of the choices given, only the graph shown in choice B satisfies these conditions.

Choice A is incorrect. If you selected this answer, you may have seen that the term $k(x + y)$ is a multiple of $x + y$ and wrongly concluded that this is the equation of a line with slope 1.

Choice C is incorrect. If you selected this answer, you may have made incorrect steps when simplifying the equation or may have not seen the advantage that putting the equation in slope-intercept form would give in determining the graph, and thus wrongly concluded the graph has a nonzero y -intercept.

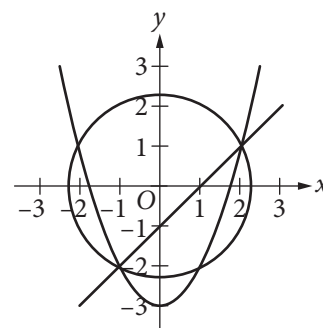
Choice D is incorrect. If you selected this answer, you may not have seen that term $k(x + y)$ can be multiplied out and the variables x and y isolated, and wrongly concluded that the graph of the equation cannot be a line.

4

$$x^2 + y^2 = 5$$

$$y = x^2 - 3$$

$$x - y = 1$$



A system of three equations and their graphs in the xy -plane are shown above. How many solutions does the system have?

A) One

B) Two

C) Three

D) Four

Estimated Difficulty: Easy**Key:** B

Choice B is correct. The solutions to the system of equations are the points where the circle, parabola, and line all intersect. These points are $(-1, -2)$ and $(2, 1)$, and these are the only solutions to the system.

Choice A is incorrect. This answer may reflect the misconception that a system of equations can have only one solution.

Choice C is incorrect. This answer may reflect the misconception that a system of equations has as many solutions as the number of equations in the system.

Choice D is incorrect. This answer may reflect the misconception that the solutions of the system are represented by the points where any two of the curves intersect, rather than the correct concept that the solutions are represented only by the points where all three curves intersect.

5

If the expression $\frac{4x^2}{2x-1}$ is written in the equivalent form $\frac{1}{2x-1} + A$, what is A in terms of x ?

- A) $2x + 1$
- B) $2x - 1$
- C) $4x^2$
- D) $4x^2 - 1$

Estimated Difficulty: Hard

Key: A

Choice A is correct. The form of the equation suggests performing long division on $\frac{4x^2}{2x-1}$:

$$\begin{array}{r} 2x+1 \\ 2x-1 \overline{) 4x^2} \\ \underline{4x^2 - 2x} \\ 2x \\ \underline{2x-1} \\ 1 \end{array}$$

Since the remainder 1 matches the numerator in $\frac{1}{2x-1}$, it is clear that $A = 2x + 1$.

A short way to find the answer is to use the structure to rewrite the numerator of the expression as $(4x^2 - 1) + 1$, recognizing the term in parentheses as a difference of squares, making the expression equal to

$$\frac{(2x-1)(2x+1)+1}{2x-1} = 2x+1 + \frac{1}{2x-1}. \text{ From this,}$$

the answer $2x + 1$ is apparent. Another way to find the answer is to isolate A in the form

$$A = \frac{4x^2}{2x-1} - \frac{1}{2x-1} \text{ and simplify. As with the first}$$

approach, this approach also requires you to recognize $4x^2 - 1$ as a difference of squares that factors.

Choice B is incorrect. If you selected this answer, you may have made a sign error while subtracting partial quotients in the long division.

Choice C is incorrect. If you selected this answer, you may have misunderstood how to work with fractions and may have tried the incorrect calculation

$$\frac{4x^2}{2x-1} = \frac{(1)(4x^2)}{2x-1} = \frac{1}{2x-1} + 4x^2.$$

Choice D is incorrect. If you selected this answer, you may have misunderstood how to work with fractions and may have tried the incorrect calculation

$$\frac{4x^2}{2x-1} = \frac{1+4x^2-1}{2x-1} = \frac{1}{2x-1} + 4x^2 - 1.$$

Student-Produced Response Math Question

For question 6, solve the problem and enter your answer in the grid, as described on page 28 of this guide.

6

The table shown classifies 103 elements as metal, metalloid, or nonmetal and as solid, liquid, or gas at standard temperature and pressure.

	Solids	Liquids	Gases	Total
Metals	77	1	0	78
Metalloids	7	0	0	7
Nonmetals	6	1	11	18
Total	90	2	11	103

What fraction of solids and liquids in the table are metalloids?

Estimated Difficulty: Easy

Key: .076, $\frac{7}{92}$

There are 7 metalloids that are solid or liquid, and there are 92 total solids and liquids. Therefore, the fraction of solids and liquids that are metalloids is $\frac{7}{92}$, or .076.

IMPORTANT NOTE REGARDING TERMS AND CONDITIONS

You will be asked to agree to the PSAT 10 Terms and Conditions on your answer sheet on test day. Please review these carefully. Prior to test day, you must review any updates to these Terms and Conditions, which will be clearly communicated to you at cb.org/psat10-terms.

PSAT 10 Terms and Conditions

Introduction

These Terms and Conditions (“**Terms and Conditions**” or “**Agreement**”) are a legal contract between you and College Board (“**College Board**” or “**we**”). They set forth important rules and policies you must follow related to taking the PSAT 10. Please read these carefully.

Additional COVID-19 related requirements may be communicated to you prior to or on test day. You agree to abide by such requirements.

All disputes between you and College Board will be resolved through binding arbitration in accordance with Section 8 of this Agreement. You understand that by agreeing to arbitration, you are waiving your right to resolve disputes in a court of law by a judge or jury except as otherwise set forth in this Agreement.

CONTENTS:

Section 1. Required and Prohibited Items for Testing

Section 2. Prohibited Behaviors

Section 3. Score Cancellation and Disciplinary Measures

Section 4. Privacy

Section 5. Miscellaneous

Section 6. Policies and Requirements

Section 7. Intellectual Property Rights

Section 8. ARBITRATION OF DISPUTES AND CLASS ACTIONS WAIVER

Section 9. Venue and Waiver of Jury Trial

Section 10. LIMITATIONS OF LIABILITY

Section 11. Severability

Section 12. Restricted Registrations

Section 13. Accessibility of These Terms and Conditions

Section 1. Required and Prohibited Items for Testing

- a. You **must bring** the following items to the PSAT 10 in accordance with satsuite.collegeboard.org/psat-10/taking-the-test/what-to-bring-leave:
 - Valid school or government issued photo ID (for students not testing at their own school)
 - Two No. 2 pencils that have erasers
 - Acceptable calculator (as set forth later in this section) for math sections where they are allowed
 - Earphones, only if you're approved for assistive technology-compatible or pre-recorded audio accommodations
 - Epinephrine auto-injector (e.g., EpiPen) in a clear plastic bag if you need one
- b. You **may not bring** prohibited items to the test. Prohibited items include but aren't limited to:
 - Mobile phones, smartwatches, fitness trackers, or other wearable technology (simple digital non-smartwatches or analog watches are acceptable)
 - Audio players or recorders, tablets, laptops, notebooks, Bluetooth devices (e.g., wireless earbuds/headphones), or any other personal computing devices
 - Separate timers of any type
 - Cameras or any other photographic equipment
 - Pens, highlighters, or mechanical or colored pencils
 - Books or references of any kind except as approved as an English language learner support for in-school administrations
 - Compasses, rulers, protractors, or cutting devices
 - Papers of any kind, including scratch paper
 - Earplugs
 - Unacceptable calculators that have computer-style (QWERTY) keyboards, use paper tape, make noise, or use a power cord
 - Weapons or firearms

NOTE: Some exceptions to the above may apply if a test taker has received a College Board-approved accommodation.

- c. Acceptable Calculators.** A battery-operated, handheld calculator can be used for testing on the PSAT 10 Math with Calculator section only. No power cords are allowed. If you have a calculator with characters that are 1 inch or higher, or if your calculator has a raised display that might be visible to other test takers, you will be seated at the discretion of the testing staff. All scientific calculators, which can perform complex mathematical functions but don't have a graphing feature, are acceptable as long as they don't have any prohibited features. For a list of acceptable graphing calculators, see satsuite.collegeboard.org/psat-10/taking-the-test/what-to-bring-leave/calculator-policy. No other calculators are permitted.
- d.** If you do not bring the required items, or if you bring prohibited items, you may be denied admission to or be dismissed from the testing site; in addition, we may decline to score your test, or cancel your score.

Section 2. Prohibited Behaviors

You **may not engage** in the prohibited behaviors set forth below:

- Attempt to cheat or otherwise obtain an unfair advantage on the PSAT 10
- Remove or attempt to remove any test questions or responses or any notes from the testing room, including through memorization, give them to anyone else, or discuss them with anyone else through any means, including, but not limited to, email, text messages, or the internet
- At any time, improperly access the test site area, the test (or any part of the test), an answer key, or any information about the test
- Refer to, look through, or work on a test section in the test book or answer sheet, other than during the testing period for that test section
- Refer to, or look through, any test section while leaving the answer sheet blank
- Attempt to give or receive assistance, including by copying or through the use of an answer key
- Discuss or share information about the test including questions, answers, identifying information about the version or form of a test, or any other information that might compromise the security of the test at any time (including before the test, during the test, during breaks, or after the test)
- Communicate with other test takers or other individuals in any form while testing is in session
- Allow anyone to see the test questions or your answers or attempt to see or copy others' test questions or answers
- Consult notes, other people, electronic devices, textbooks, or any other resources during the test or during breaks
- Have subject-related information on your clothing, shoes, or body
- Use or access any prohibited items including devices or aids such as, but not limited to, mobile phones, smartwatches, fitness trackers, other oral or written communication devices or wearable technology, cameras, notes and reference books, etc., during or in connection with the test, including during breaks
- Fail to turn in or store away a mobile phone in accordance with the testing staff's collection process
- Share a calculator with another person
- Use a calculator on any test section other than the Math with Calculator section unless approved by College Board as an accommodation
- Use a prohibited calculator
- Leave the testing room without permission and prior to the conclusion of all sections of the test
- Go to a locker or leave the building at any time during the test administration, including during breaks
- Deliberately attempt to and/or take the test for someone else or attempt to have someone else impersonate you to take the test
- Deliberately create fake or multiple College Board student accounts
- Provide false information to College Board
- Disturb others
- Consume food or drink in unauthorized areas
- Exhibit or engage in confrontational, threatening, or unruly behavior, conduct, or communication toward or concerning any test taker, test administrator, proctor, employee of College Board or College Board contractor
- Allow an alarm or a personal item to sound in the testing room
- Fail to follow any of the test administration rules set forth in these Terms and Conditions or directions given by the testing staff

Section 3. Score Cancellation and Disciplinary Measures

- a. Score Cancellation and Disciplinary Measures.** In the event that College Board and/or its contractors determine that your scores are invalid under Section 3(b) below, or you have engaged in Misconduct under Section 3(c) below, we may, in our sole discretion, take 1 or more of the following measures (“**Measures**”): deny you entry to a test administration, dismiss you from the test, decline to score your test, cancel your scores, ban you from taking future College Board assessments (including without limitation the SAT®, Advanced Placement® (AP®) and CLEP® Exams), and/or share information with others as set forth in Section 3(f) below.
- b. Invalid Scores.** We may cancel your scores and/or take any of the other Measures described above, if after following the procedures set forth in this section, we determine, in our sole discretion, that there is substantial evidence that your scores are invalid (“**Invalid Scores**”). Examples of evidence of Invalid Scores include, without limitation, discrepant handwriting, unusual answer patterns, or other evidence that indicates these Terms and Conditions have been violated. Before canceling your scores under this Invalid Scores section, we will notify you in writing (via email if an email address is available) and offer you 3 options: voluntary score cancellation, a free retest under closely monitored conditions (during the following 2 administrations after such review), or an opportunity to submit additional information and request a further review by a College Board panel. If you opt for a further review by a College Board panel, and it confirms, in its sole discretion, that your scores are invalid, we will offer you 3 options: voluntary score cancellation, a free retest under closely monitored conditions (during the following 2 administrations after such review), or arbitration. This process is referred to as the “**Score Validity Process**.” Additional information about security measures and consequences of violating security policies is set forth in sat.org/test-security. The arbitration option is available only for tests administered in the United States and U.S. territories.
- c. Misconduct.** Notwithstanding Section 3(b) above, if we determine, in our sole discretion, that there is overwhelming evidence that you violated these Terms and Conditions (“**Misconduct**”), the Score Validity Process will not apply, and we may cancel your scores and/or take any of the Measures described above. Examples of Misconduct might include overwhelming evidence that you used or attempted to use an answer key or mobile phone. Misconduct may be established in various ways including, without limitation, through observations during an administration or by evidence discovered afterward. If your scores are canceled due to Misconduct, you will forfeit test and registration fees.
- d. Testing Irregularities.** We may cancel your scores if we determine, in our sole discretion, that any testing irregularity occurred (collectively “**Testing Irregularities**”). Examples of Testing Irregularities include, without limitation, problems, irregular circumstances, or events associated with the administration of a test that may affect 1 test taker or groups of test takers. Such problems include, without limitation, administrative errors (e.g., improper timing, improper seating, improper admission to a testing site, providing accommodations not approved by College Board, defective materials, and defective equipment), evidence of possible preknowledge of secure test content, and disruptions of test administrations caused by events such as natural disasters, epidemics or pandemics, wars, riots, civil disturbances, or other emergencies. When Testing Irregularities occur, we may cancel an entire administration or individual registrations, decline to score all or part of the test, or cancel scores. We may do this regardless of whether or not you caused the Testing Irregularities, benefited from them, or violated these Terms and Conditions. We may, in our sole discretion, give you the opportunity to take the test again within a reasonable time frame, and without charge. This is the sole remedy that may be available to you as a result of Testing Irregularities. You may not review scores from an affected administration before choosing the option of taking a makeup test.
- e. Test Taker Reporting Violations or Suspicious Behavior.** You may confidentially report any suspected violation of the PSAT 10 Terms and Conditions, or any suspicion concerning the security of PSAT 10 test administration, by immediately reporting this information to College Board by emailing us at collegeboardtestsecurity@collegeboard.org.
- f. College Board Sharing Information with Third Parties.** We may share the results of test security investigations (including without limitation those relating to Misconduct and Invalid Scores described above and other disciplinary-related information), with third parties, including with your school, any score recipient, college, higher education institution or agency, scholarship organization, potential score recipient, government agency in the United States or abroad, parents, legal guardians, or law enforcement. College Board may also share such information with third parties that have a legitimate reason for knowing the information or who may be able to assist College Board in its investigation or who may be conducting their own investigation. College Board may respond to inquiries from any institution to which you submitted a score. If you publicize any review, investigation, or decision of College Board, College Board may make any and all details of such matter public.

Section 4. Privacy

- a. **Privacy Policies.** College Board recognizes the importance of protecting your privacy. Our privacy policies located at collegeboard.org/privacy-center (“**Privacy Policies**”) are part of these Terms and Conditions. You consent to collection, use, and disclosure by College Board of your personally identifiable information as described in the Privacy Policies and in these Terms and Conditions. College Board may update its Privacy Policies from time to time, and they are subject to change up to 1 week prior to your test date and any subsequent test dates. You are required to review the Privacy Policies located at collegeboard.org/privacy-center prior to each test administration.
- b. **Voluntary Student Search Service™.** If you decide to opt in to our voluntary Student Search Service (“**Student Search Service**”), then:
 - We will share information about you that you provide to College Board (including without limitation your personally identifiable information, score ranges, questionnaire responses, and information you provide on the college planning website of College Board) with participating accredited colleges, universities, nonprofit scholarship programs, and nonprofit educational organizations (“**Education Organizations**”). If you opt in to Student Search Service, we may share information you provided prior to and after opting in to Student Search Service, but we will not share any information until you opt in.
 - Education Organizations may use this information to send you, or your parent, email and postal mail with information about educational, financial aid, and scholarship opportunities. Being contacted by Education Organizations doesn’t mean you have been admitted. You must submit an application to be considered for admission.
 - Education Organizations pay a license fee to College Board to license (use) your information. College Board uses these license fees to help support its mission-driven work. Students do not pay a fee for Student Search Service.
 - Education Organizations may only use your information for the purpose of sending you information about the opportunities they provide. They (i) may not share your information with others except to their contractors such as direct mail service providers, and (ii) may only keep your information for a limited time period.
 - **Opt-out:** You can opt out of Student Search Service at any time at my.collegeboard.org/profile/privacy or by contacting us at SearchCustomerService@collegeboard.org or 866-825-8051.
 - More information on Student Search Service is available at studentsearch.collegeboard.org.

- c. **Educational Reporting.** We send your scores, data derived from your scores, and other information you provide during testing to your school and district. In addition, your scores may be sent to your state for educational, diagnostic, and/or reporting purposes. (Homeschooled students’ scores won’t be shared with the school that administers the test.)

Section 5. Miscellaneous

- a. In the event of a test security related concern, public health threat including without limitation an epidemic or pandemic, natural disaster, terrorist act, civil unrest, or other unexpected events or circumstances, College Board may cancel testing for all or a specific group of test takers. When this occurs your school or testing location will work with College Board to request an alternate test date or provide other options for testing if feasible.
- b. To ensure the integrity of the PSAT 10, for security reasons, or for other reasons in our sole discretion, College Board reserves the right to bar any individual or group of individuals from registering for and/or taking any College Board assessment.
- c. If College Board becomes aware that you or someone else may be in imminent danger, we reserve the right to contact the appropriate individuals or agencies, including your parents, guardians, high school, or law enforcement agencies.
- d. College Board or its designee may use methods to capture images, video, or audio at any or all testing sites to help ensure test security. The resulting images or recordings, which may permit College Board to identify specific individuals, may be collected, stored, reviewed, and used for the purposes of (i) identifying, collecting evidence of, and/or investigating possible PSAT 10 test security incidents; and (ii) enhancing PSAT 10 test security. These images and/or recordings are maintained following the test administration for as long as reasonably necessary for the purposes specified. Thereafter, the images and recordings are securely destroyed. College Board will not use or disclose such information except as described earlier in this section, as requested by law enforcement, and/or as reasonably necessary to protect the rights and property of College Board or third parties.
- e. College Board occasionally pretests new questions to determine if they should be included in a future PSAT 10. These questions may appear in any of the test sections, and testing time will be appropriately extended so you have time to answer them. They will not be included in computing your scores. Scored test items (questions) and entire test forms may be used in more than 1 test administration.
- f. After the PSAT 10, we may send you an email invitation requesting you to participate in a test experience survey or to answer sample test questions. If you provide us with an email address, you may receive an invitation via email. Participation is optional and will not affect your scores.

- g.** College Board takes steps to ensure that answer sheets are properly handled and scored. In the unlikely event of a problem with shipping or processing answer sheets, or score reports, or with scoring the test, or score reporting, College Board will correct the error, if possible, and may schedule a makeup test for impacted test takers. This is your sole remedy in relation to such issues. College Board has sole discretion in determining whether to score lost answer sheets that are eventually recovered.
- h.** All personal property brought into the testing site, such as purses, bags, backpacks, mobile phones, and calculators and other electronic devices, may be subject to search at the discretion of College Board and testing staff. College Board and testing staff may confiscate and retain for a reasonable period of time any personal property suspected of having been used, or capable of being used, in violation of our test security and fairness policies, for further investigation.
- i.** College Board and the testing site will not be responsible for personal property, including prohibited items, brought to the testing site on test day that becomes lost, stolen, or damaged.
- j.** Each College Board contractor is a third-party beneficiary and is entitled to the rights and benefits under this Agreement and may enforce the provisions of this Agreement as if it were a party to this Agreement.

Section 6. Policies and Requirements

- a.** All College Board policies and requirements (i) referenced in these Terms and Conditions and (ii) relating to taking the PSAT 10 located at satsuite.collegeboard.org/psat-10/taking-the-test, what to bring and what to leave at home on test day located at satsuite.collegeboard.org/psat-10/taking-the-test/what-to-bring-leave and scores located at satsuite.collegeboard.org/psat-10/scores.
- b.** College Board may update its policies and requirements from time to time, and they are subject to change up to 1 week prior to your test date. You are required to review these prior to each test administration.

Section 7. Intellectual Property Rights

- a.** All College Board tests, test-related documents and materials, and test preparation materials are copyrighted works owned by College Board and protected by the laws of the United States and other countries.
- b.** College Board owns all answers and answer documents you submit, and these may be used by College Board for any purpose, subject to College Board Privacy Policies located at collegeboard.org/privacy-center and these Terms and Conditions.

Section 8. ARBITRATION OF DISPUTES AND CLASS ACTIONS WAIVER

- a.** General Arbitration Rules (“*General Arbitration Rules*”)
 - Any dispute regarding the enforceability of these arbitration provisions, or whether a dispute is subject to these arbitration provisions, shall be resolved by the arbitrator.
 - All disputes between you and College Board and/or any or all of its contractors that relate in any way to registering for, participating in, or taking the PSAT 10, including but not limited to requesting or receiving test accommodations, score reporting, the use of your data, test security issues, or the Score Validity Process, but excluding all claims that a party violated the intellectual property rights of the other party, shall exclusively be resolved by a single arbitrator through binding, individual arbitration administered by the American Arbitration Association (“AAA”) under the AAA Consumer Arbitration Rules in effect at the time a request for arbitration is filed with the AAA. Copies of the AAA Consumer Arbitration Rules are located at adr.org.
 - Disputes relating to the Score Validity Process (defined in the “Invalid Scores” section herein) are subject to both these General Arbitration Rules and the Supplemental Arbitration Rules defined below. If there is a conflict between the General Arbitration Rules and the Supplemental Arbitration Rules, the Supplemental Arbitration Rules will control.
 - This arbitration will be conducted as a documents-only arbitration (i.e., there will be no in-person or telephone hearing) unless otherwise agreed by the parties or required by the arbitrator. Should the parties agree to or the arbitrator require proceedings, such proceedings should be conducted at a location which is reasonably convenient to both parties with due consideration of their ability to travel and other pertinent circumstances. If the parties are unable to agree on a location, the parties agree that the proceedings will be conducted via a video or telephonic call or, in the event that face-to-face proceedings are agreed to by the parties or required by the arbitrator, at a location that is reasonably convenient to both parties in accordance with the AAA Consumer Arbitration Rules.
 - The parties agree that the Federal Arbitration Act (“*FAA*”) 9 U.S.C. § 1 *et seq.* governs this provision, and it is the intent of the parties that the FAA shall preempt all State laws to the fullest extent permitted by law.

- No arbitration may be maintained as a class or collective action, and the arbitrator shall not have the authority to combine or aggregate the disputes of more than 1 individual, conduct any class or collective proceeding, make any class or collective award, or make an award to any person or entity not a party to the arbitration, without the express written consent of College Board.
 - By agreeing to arbitration in accordance with this section, you are waiving your right to have your dispute heard by a judge or jury except as set forth below.
 - To commence arbitration, you must pay the AAA filing fee (unless AAA agrees to waive the fee for you) and follow the AAA Consumer Arbitration Rules. The filing fee will be reimbursed by College Board if you prevail in arbitration. Each party will be responsible for its own attorney's fees and expenses. College Board generally pays the arbitrator's compensation but the arbitrator may require you to pay those fees if the arbitrator determines that your claim was filed for purposes of harassment or is patently frivolous, as per the AAA Consumer Arbitration Rules.
- b. Supplemental Arbitration Rules for the Score Validity Process (“*Supplemental Arbitration Rules*”)**
- If you receive a notice from us that your scores are subject to the Score Validity Process, you may be provided with the option to choose arbitration. In addition to the General Arbitration Rules, the below rules will apply.
 - The sole issue for the arbitrator to decide is whether College Board acted in good faith and followed the Score Validity Process.
 - This arbitration will be based only on (i) the documents you submitted to College Board pursuant to the Score Validity Process and (ii) College Board documents unless otherwise agreed by the parties or required by the arbitrator.
 - If the arbitrator finds that College Board did not act in good faith in deciding to cancel your scores, your scores will not be canceled (or they will be reinstated, if applicable).
 - All other disputes with College Board will be resolved solely by the General Arbitration Rules in Section 8(a) above.
- c. Notwithstanding the foregoing arbitration provisions in Sections 8(a) and 8(b) above, either party may take a claim to small claims court instead of arbitration if the party's claim is within the jurisdiction of the small claims court, as permitted in the AAA Consumer Arbitration Rules. If either party institutes an action in small claims court, you and College Board agree to accept the findings of the small claims court as a final resolution of the parties' dispute and not to appeal the small claims court's decision or pursue any other claim (including a claim asserted in arbitration) relating to that dispute.**

Section 9. Venue and Waiver of Jury Trial

All disputes arising from or related to these Terms and Conditions that are not subject to arbitration under Section 8 shall be resolved exclusively in the state and federal courts located in New York County, New York State, and each party to these Terms and Conditions irrevocably consents to the jurisdiction of such courts. Each party expressly waives any right to a jury trial in any lawsuit arising from or related to these Terms and Conditions.

Section 10. LIMITATIONS OF LIABILITY

EXCEPT TO THE EXTENT FINALLY DETERMINED TO BE PROHIBITED BY LAW, THE TOTAL LIABILITY OF COLLEGE BOARD AND ITS AGENTS AND CONTRACTORS' TOTAL LIABILITY TO YOU OR ANYONE CLAIMING BY OR THROUGH YOU OR ON YOUR BEHALF, FOR ANY CLAIMS, LOSSES, COSTS, OR DAMAGES ARISING OUT OF OR RESULTING FROM OR IN ANY WAY RELATED TO COLLEGE BOARD, OR ANY TEST ADMINISTRATION BY COLLEGE BOARD, FROM ANY CAUSE, SHALL NOT EXCEED THE TEST REGISTRATION FEES YOU PAID TO COLLEGE BOARD (IF APPLICABLE) OR \$100.00, WHICHEVER IS GREATER. IN ADDITION, COLLEGE BOARD WILL NOT BE LIABLE IN ANY EVENT FOR ANY CONSEQUENTIAL, INDIRECT, PUNITIVE, EXEMPLARY, OR SPECIAL DAMAGES.

Section 11. Severability

If any provision or part of this Agreement is held to be invalid, illegal, or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way, and, to the extent possible, the invalid, illegal, or unenforceable provision shall be modified so that it is valid, legal, and enforceable and, to the fullest extent, reflects the intention of the parties.

Section 12. Restricted Registrations

College Board, along with our service providers overseas, is subject to U.S. economic sanctions, laws, and regulations and is prohibited from providing testing services to, or accepting registrations from, persons residing in certain areas or designated by the U.S. government as Specially Designated Nationals and Blocked Persons (collectively, “**Sanctioned Persons**”), unless specifically licensed or otherwise authorized by the U.S. government. If a Sanctioned Person attempts to register despite U.S. sanctions that prohibit College Board from doing business with such Sanctioned Person, College Board or a U.S. financial institution may block the registration or payments submitted by or for such Sanctioned Persons. If payment is not blocked, College Board is required to cancel the registration and may not be able to refund the payment. Please contact PSAT 10 Customer Service at 866-433-7728 (+1-212-713-8105 internationally) or the website of the U.S. Treasury Department’s Office of Foreign Assets Control (OFAC) to obtain the current list of sanctioned programs and Sanctioned Persons.

Section 13. Accessibility of These Terms and Conditions

If you have difficulty accessing these Terms and Conditions, including our policies and requirements, please contact College Board Customer Service at 866-433-7728 (+1-212-713-8105 internationally) or satsuite.collegeboard.org/contact-us in advance of registering or taking the PSAT 10. We will be happy to provide these Terms and Conditions in an alternative format or assist you in some other manner as reasonably necessary to enable you to access these Terms and Conditions.

