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CollegeBoard SAT

2022-23

The SAT®

Student Guide

- Important information about the SAT
- Test-taking advice and tips
- Practice questions

Learn all about the SAT at **sat.org**.

Connect your College Board results, and get personalized practice at **satpractice.org**.

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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**.

SAT Customer Service

You can reach us Monday to Friday, 8 a.m.–9 p.m. ET
(9 a.m.–7 p.m. after the June test through mid-August).

PHONE: 866-756-7346

INTERNATIONAL: +1-212-713-7789

EMAIL: **sat.org/inquiry**

MAIL: College Board SAT Program
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Miami, FL 33102

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Test-Taking Information

How the SAT Can Serve You

Taking the SAT® is a great way to find out how prepared you are for college and career. Many students find that their test scores confirm their high school grades or can even show their strengths beyond what their grades show. When surveyed, more than 80% of students say they want the option to submit test scores to colleges and universities.

Using This Guide

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 SAT Terms and Conditions (starting on page 37) 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* **sat.org/terms**.

How the SAT Is Organized

The SAT 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 college and beyond.

The SAT 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/Tasks
Reading	65	52
Writing and Language	35	44
Math	80	58
Total	180	154

As part of scoring, every test goes through an equating process. Equating is a statistical process we use to ensure that scores mean the same thing no matter which version of the test you take or when you take it. In order to assist with future testing, College Board may conduct research studies in connection with the testing of a subset of students.

Also, the test occasionally includes test questions for research purposes. These questions may appear in any of the test sections, and testing time will be extended by 20 minutes so students have time to answer them. These questions will not be included in computing your scores. Students must complete all sections of the test. If you leave before dismissal, your scores will be canceled. Scored test items and entire test forms may be used in more than 1 test administration.

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How the SAT 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 questions. 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 SAT.

SAT Score Reported	Details	Score Range
Total Score	Sum of the 2 section scores	400–1600
Section Scores (2)	▪ Evidence-Based Reading and Writing ▪ Math	200–800
Test Scores (3)	▪ Reading ▪ Writing and Language ▪ Math	10–40
Cross-Test Scores (2) Based on select 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.	▪ Analysis in History/Social Studies ▪ Analysis in Science	10–40
Subscores (7)	▪ 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

If You Need Testing Accommodations

If you have a disability that requires testing accommodations such as braille, extra breaks, or permission to test blood sugar, you must apply for College Board approval in advance of the test date you need the accommodations for. All accommodations must be approved by the Services for Students with Disabilities (SSD) office. See **collegeboard.org/ssd** for information on how to apply for and use accommodations.

When considering accommodations, note the following:

- Work with your school's SSD coordinator or counselor to request accommodations. Your SSD coordinator can help determine what accommodations are best for you and submit a request online.
- If you want to request accommodations on your own, download the Student Eligibility form from **collegeboard.org/ssd** and print it.
- Once approved for accommodations, with some exceptions, you remain approved and do not have to apply again when taking another College Board test.
- 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.
- Bring your SSD eligibility letter with you on test day to provide documentation if needed.

Register for your chosen test date and include your SSD number (listed on your eligibility letter).

- If your accommodations haven't been approved yet, register for standard testing. As long as your accommodations are approved in time,

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your registration should be updated automatically. Be sure to print an updated admission ticket showing your accommodations.

- If your accommodations aren't approved in time for your test date, you can:
  - Transfer to a later date.
  - If approved by your test date, bring a copy of your SSD eligibility letter, along with your photo ID and admission ticket, to the test center. If there are enough materials and space, you may be able to test with your approved accommodations.

The SAT Questionnaire

When you register for the SAT, you'll have the opportunity to answer questions about yourself, your educational experience, and your plans for after you graduate high school. While you don't have to answer these questions, we strongly recommend that you do.

Your responses give your school counselors and college admission officers information they can use to help you plan your future. The more information you provide, the more they can help you.

Your answers to some questions (the questionnaire identifies which ones) won't appear on your score report but will be used by College Board for research and planning.

Your responses, when combined with those of all other students taking the SAT, contribute to an understanding of the academic preparation, extra- and cocurricular involvement, and post-high-school plans of your graduating class, which can help colleges and universities deliver programs and opportunities to serve you and your classmates.

Sending Scores

You'll also have the opportunity when you register for the SAT to choose up to 4 colleges, universities, or scholarship programs to receive your scores for free. For score sends requested as part of your registration, only your scores from the test date on the registration will be sent, unless you specifically ask to send all your existing SAT scores. (Sending scores to additional colleges, universities, or scholarship programs can be requested for a fee online.)

The report you receive and the reports received by colleges and your high school contain total and section scores. Section scores are converted to a scale from 200 to 800, these are added together to create a total score between 400 and 1600. (See How the SAT Is Scored on page 2 for more information.) Additional score sends include all your available scores unless you choose otherwise, as explained later in this section.

Score Reports

The online score report gives you the meaning behind your numbers by providing a summary of how you did on each section. You can access your online score report through your College Board account. (If you can't access your online score report, your school can print a copy for you.) The SAT online score report contains:

- Percentiles that let you see how your results compare with those of other students like you.
- A search tool for careers and college majors, with suggestions based on information you provide in your profile.

Score Choice

If you take the SAT more than once, you can have the option of Score Choice™. With Score Choice, you can choose which scores you send to colleges. Choose by test date for the SAT—but keep in mind that some colleges and scholarship programs require you to send all your scores.

This online service is optional. If you don't use Score Choice, we'll send all your SAT scores from your most recent 6 administrations. However, if you want only your highest scores to be seen, select Score Choice. Each school or program has its own deadlines and policies for how scores are used. Information is listed on the score-sending site for each participating institution, but check with the individual school or scholarship program to make sure you're following its guidelines. We're not responsible for the accuracy of the information or the consequences of your decisions.

Connect to Opportunities in Higher Education

Each year millions of students take the SAT, and thousands of high school counselors and postsecondary admission officers worldwide use their scores to guide decisions in the college application process. The test that you'll take on test day is a challenging and fair assessment of what you know and can do. The questions you'll tackle focus on the knowledge and skills that the best available evidence indicates are essential for college and career readiness and success.

We're committed to providing opportunities to help you reach your goals for college and career. Students who are the first in their families to consider attending college, who come from low-income families, or whose ethnicities are underrepresented in colleges may feel that college isn't for them. College Board's Access to Opportunity™ (A2O™) efforts are designed to identify and break down barriers that prevent students from applying to and enrolling in colleges that are their

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best academic, social, and financial fit. Our mission is to help all students recognize and make the most of the opportunities they've earned. See Useful Resources on page 6 for more information about ways to achieve your dreams.

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 during registration or 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 registration 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 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 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**.

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.

Fee Waiver Benefits for Income-Eligible Students

Students who face financial barriers to taking the SAT can be given College Board fee waivers through schools and authorized community-based organizations to cover the cost of testing. College Board offers fee waivers to qualified, income-eligible students who want to take the SAT. They cover 100% of the registration fees for a single test date and unlimited score sends to colleges, universities, and scholarship programs. Each qualifying student can use up to 2 waivers for SAT administrations. SAT fee waivers also give first-time, domestic applicants CSS Profile® fee waivers. Learn more about this at **profileonline.collegeboard.org**.

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Also, seniors who use a fee waiver to take the SAT will automatically receive waived application fees at participating colleges and universities. You can learn about eligibility and the other benefits offered to help you in the college application process at **sat.org/feewaivers**.

Practice for the SAT

College Board has partnered with Khan Academy® to give you free, personalized practice you can access anytime, anywhere.

Don't miss out on these practice tools:

- Personalized recommendations for practice on the skills you need to attend to most.
- Thousands of questions, reviewed and approved by the people who develop the SAT.
- Video lessons that explain problems step by step.
- Full-length practice tests.
- Practice tests in assistive technology–compatible (ATC) and pre-recorded audio formats for students who need them.

Make practice part of your routine—anyplace, anytime.

We offer other free and affordable resources to help you do your best. See **sat.org/practice**.

Practice Tests with Scoring Guides and Answer Explanations

Take an official SAT practice test on paper to simulate test day.

1. Download and print one of the SAT practice tests at **sat.org/practice**. (Your counseling office may also have Official SAT Practice Tests available in booklet form.) Be sure to follow the instructions, and use the provided 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 SAT Terms and Conditions on page 37 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

Who Can Take the SAT

You may take the SAT on any weekend administration if you're taking the test for its intended purposes, including:

- Applying to a college or university undergraduate program.
- Applying for scholarships, financial aid, or other programs that require a college admission test as part of their application process.

If we have reason to believe you're not taking the SAT for its intended purposes, your registration will be canceled, and you'll need to reregister for an administration where the SAT form is disclosed after the test. In addition, College Board reserves the right to investigate and cancel the SAT registration and/or scores of anyone suspected of attempting to steal and/or share test content.

Testing Guidelines

- Plan ahead and bring equipment that's in good working order. Testing staff will 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.
- Keep your photo ID and admission ticket with you at all times, especially if you leave the testing room. You may be asked to show your ID or admission ticket at any time while in the test center. Do not write on the admission ticket.
- Don't leave the room before testing ends; if you do, your scores will be canceled.

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 SAT Terms and Conditions to understand our collection, use, and disclosure of your personally identifiable information.

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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.

Test Fairness Review

All new SAT 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 **satquestion@collegeboard.org**.

In your inquiry, provide your name and mailing address, the date you took the SAT, 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 SAT 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.*

Makeup Testing

During bad weather, natural disasters, power outages, or other unusual conditions, test centers may be closed. Check **sat.org/test-center-closings** for test center closings on Friday night and Saturday morning before you go to the test center. Information about makeup testing is posted as it's available. If a makeup date has been confirmed, that information is included.

The following policies apply to makeup testing:

- The availability of makeup testing and the conditions that make test takers eligible to take a makeup test are at the sole discretion of College Board.
- Waitlist registrants are not eligible to take a makeup test.
- Access to scores from makeup administrations may be delayed by several weeks.
- The Question-and-Answer Service (QAS) isn't offered for makeup tests, even if QAS was available for the original test date. (QAS is a Student Answer Service.)

Useful Resources

We offer resources to help you find the best college and career for you, including:

BigFuture—Discover your path for life after high school. Explore colleges and careers based on your interests and learn how to pay for college—all while earning chances to win BigFuture Scholarships. Visit **bigfuture.org**.

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**.

IMPORTANT: *Don't forget the Free Application for Federal Student Aid (FAFSA®)—the form you'll need to qualify for most financial aid opportunities—can be filed beginning October 1. You should complete your FAFSA as early as possible.*

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Verifying Your Scores

Answer services that tell you more about the test you took and your responses are explained at **sat.org/verify-scores**. You can request a more comprehensive multiple-choice hand score verification, up to 5 months after the test date, by printing and completing a Request for SAT Score Verification form, available at **sat.org/verify-scores**. Read the information on the form carefully before deciding to request this service. There is a fee for this service. If you used a fee waiver to pay SAT registration fees, the score verification fee will be reduced.

Score Reporting

Score reports will be automatically sent to your high school and to the institutions you choose when you register.

- Each time you take the SAT, the scores are added to your College Board record. All of your scores are reported to your high school.
- You can order additional score reports. They'll be sent to your designated colleges and scholarship programs a few weeks after the request is received.
- If you want to change where your scores are sent, you have until 9 days after the test date to alter your 4 free score reports at no charge. After that, you'll be charged the additional score report request fee for any added or changed report requests.
- Score Choice lets you choose which scores are sent.

Sending Scores to College and University Systems

The reports received by you, your high school, and colleges contain section scores that have been converted to a scale from 200 to 800. The SAT includes additional scores that offer insights into your skill levels. College Board doesn't use either your raw score or your reported scaled score by itself or in combination with any other information to predict your individual future academic performance at specific postsecondary institutions. However, College Board does help individual colleges and universities use and interpret SAT scores. Test scores are the property of College Board.

In certain college and university systems, once you submit your score to 1 school, other schools within that system will also have access to your score. Please note, however, that if you are applying to more than 1 school within a college or university system, it is still important for you to send your SAT scores to each individual school. If you are not sure whether the specific school you are applying to is part of such a system, contact the school's admission office.

Additionally, if you have decided to participate in Student Search Service, colleges and universities may identify you to provide you with materials about college admission and financial aid. See Student Search Service on page 4 for more information.

Keeping Scores on File

Your test scores, your responses to the SAT Questionnaire, and related personal information that you provide to College Board become part of your student record and are kept indefinitely, unless you tested before entering the ninth grade. For requests to have a permanent College Board student record removed, individuals must call College Board Customer Service or write to College Board, Attention Customer Service. See the inside front cover of this guide for contact information.

Required Information for Students Testing in California or New York State

The California Education Code and the New York State Standardized Testing Law require that certain information about the SAT be given to test takers.

Complete descriptions of the content of the test, information on test preparation and sample questions, and information on how to request reports about the test you took and your responses are provided in the **SAT Student Guide** ("Guide") and online at **sat.org/verify-scores**. In addition, students who have taken the SAT in California in December 2022 can review the test questions under secure conditions at the ETS Western Field Office in Sacramento, California, by calling 916-403-2402.

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Predicting College Grades

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, 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.

SAT scores provide meaningful information about a student's likelihood of success in college, but the SAT should not be used as the sole source of information for high-stakes decisions. Find out more at **sat.org**.

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

Procedures to Ensure Fairness and Equity

All SAT test questions and editions of the tests are reviewed by independent educators throughout the United States. See Test Fairness Review on page 6 for how we make sure that test materials are both relevant to the work students do in high school and measure their college and career readiness. Fairness reviewers ensure that test materials are accessible to all students, have no offensive or insensitive content, and aren't made easier or harder by factors outside the subject being measured.

Relationship of SAT Scores to Family Income

College Board no longer collects information regarding family income from test takers. Past data indicate that students from every income level obtain a full range of SAT scores.

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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: 52 passage-based reading questions with multiple-choice responses.
- Time allotted: 65 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.

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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 10 or 11 questions. The directions that follow match the directions on the actual test.

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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 1-3 are based on the following passages.

Passage 1 is adapted from Susan Milius, "A Different Kind of Smart." ©2013 by Science News. Passage 2 is adapted from Bernd Heinrich, *Mind of the Raven: Investigations and Adventures with Wolf-Birds*. ©2007 by Bernd Heinrich.

Passage 1

In 1894, British psychologist C. Lloyd Morgan published what's called Morgan's canon, the principle that suggestions of humanlike mental processes behind an animal's behavior should be rejected if a simpler explanation will do.

Still, people seem to maintain certain expectations, especially when it comes to birds and mammals. "We somehow want to prove they are as 'smart' as people," zoologist Sara Shettleworth says. We want a bird that masters a vexing problem to be employing human-style insight.

New Caledonian crows face the high end of these expectations, as possibly the second-best toolmakers on the planet. Their tools are hooked sticks or strips made from spike-edged leaves, and they use them in the wild to winkle grubs out of crevices. Researcher Russell Gray first saw the process on a cold morning in a mountain forest in New Caledonia, an island chain east of Australia. Over the course of days, he and crow researcher Gavin Hunt had gotten wild crows used to finding meat tidbits in holes in a log. Once the birds were checking the log reliably, the researchers placed a spiky tropical pandanus plant beside the log and hid behind a blind.

A crow arrived. It hopped onto the pandanus plant, grabbed the spiked edge of one of the long straplike leaves and began a series of ripping motions. Instead of just tearing away one long strip, the bird ripped and nipped in a sequence to create a slanting stair-step edge on a leaf segment with a narrow point and a wide base. The process took only seconds. Then the bird dipped the narrow end of its leaf strip into a hole in the log, fished up the meat with the leaf-edge spikes, swallowed its prize and flew off.

"That was my 'oh wow' moment," Gray says. After the crow had vanished, he picked up the tool the bird had left behind. "I had a go, and I couldn't do it," he recalls. Fishing the meat out was tricky. It turned out that Gray was moving the leaf shard too forcefully instead of gently stroking the spines against the treat.

The crow's deft physical manipulation was what inspired Gray and Auckland colleague Alex Taylor to test other wild crows to see if they employed the seemingly insightful string-pulling solutions that some ravens, kea parrots and other brainiac birds are known to employ. Three of four crows passed that test on the first try.

Passage 2

For one month after they left the nest, I led my four young ravens at least once and sometimes several times a day on thirty-minute walks. During these walks, I wrote down everything in their environment they pecked at. In the first sessions, I tried to be teacher. I touched specific objects—sticks, moss, rocks—and nothing that I touched remained untouched by them. They came to investigate what I had investigated, leading me to assume that young birds are aided in learning to identify food from the parents' example. They also, however, contacted almost everything else that lay directly in their own paths. They soon became more independent by taking their own routes near mine. Even while walking along on their own, they pulled at leaves, grass stems, flowers, bark, pine needles, seeds, cones, clods of earth, and other objects they encountered. I wrote all this down, converting it to numbers. After they were thoroughly familiar with the background objects in these woods and started to ignore them, I seeded the path we would later walk together with objects they had never before encountered. Some of these were conspicuous food items: raspberries, dead meal worm beetles, and cooked corn kernels. Others were conspicuous and inedible: pebbles, glass chips, red winterberries. Still others were such highly cryptic foods as encased caddisfly larvae and moth cocoons. The results were dramatic.

The four young birds on our daily walks contacted all new objects preferentially. They picked them out at a rate of up to tens of thousands of times greater than background or previously contacted objects. The main initial criterion for pecking or picking anything up was its novelty. In subsequent trials, when the previously novel items were edible, they became preferred and the inedible objects became "background" items, just like the leaves, grass, and pebbles, even if they were highly conspicuous. These experiments showed that ravens' curiosity ensures exposure to all or almost all items in the environment.

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1

Within Passage 1, the main purpose of the first two paragraphs (lines 1-11) is to

A) offer historical background in order to question the uniqueness of two researchers' findings.

B) offer interpretive context in order to frame the discussion of an experiment and its results.

C) introduce a scientific principle in order to show how an experiment's outcomes validated that principle.

D) present seemingly contradictory stances in order to show how they can be reconciled empirically.

Estimated Difficulty: Hard	**Key:** B

Choice B is the best answer. Passage 1 opens with an explanation of Morgan's canon and continues with a discussion of people's expectations regarding animal intelligence. Taken together, the first two paragraphs indicate that despite cautions to the contrary, people still tend to look for humanlike levels of intelligence in many animals, including birds. These two paragraphs provide a framework in which to assess the work of Gray and Hunt, presented in the rest of the passage. The passage's characterization of the experiment Gray and Hunt conduct, in which they observe a crow's tool-making ability and to which Gray responds by trying and failing to mimic the bird's behavior ("I had a go, and I couldn't do it," line 37), suggests that Shettleworth, quoted in the second paragraph, is at least partially correct in her assessment that "we somehow want to prove [birds] are as 'smart' as people" (lines 8-9).

Choice A is incorrect because while the reference to Morgan's canon in the first paragraph offers a sort of historical background (given that the canon was published in 1894), the second paragraph describes people's continuing expectations regarding animal intelligence. Furthermore, the fact that Gray and Hunt may share with other people the tendency to look for humanlike intelligence in many animals does not by itself establish that the main purpose of the first two paragraphs is to question the uniqueness of Gray and Hunt's findings.

Choice C is incorrect because while the reference to Morgan's canon in the first paragraph does introduce a scientific principle, the discussion in the second paragraph of people's expectations regarding animal intelligence, as well as the passage's characterization of Gray and Hunt's experiment and how the researchers interpret the results, primarily suggest that people tend to violate the canon by attributing humanlike levels of intelligence to many animals.

Choice D is incorrect because although the first two paragraphs do present different perspectives, they are not seemingly or genuinely contradictory. The second paragraph, particularly the quotation from Shettleworth, serves mainly to qualify (not contradict) the position staked out in the first paragraph by suggesting that while Morgan's canon is probably a sound principle, people still tend to project humanlike levels of intelligence onto many animals. Moreover, the experiment depicted in the rest of the passage primarily bears out Shettleworth's claim that "we somehow want to prove [birds] are as 'smart' as people" (lines 8-9) and thus does not reconcile the perspectives found in the opening paragraphs.

2

According to the experiment described in Passage 2, whether the author's ravens continued to show interest in a formerly new object was dictated primarily by whether that object was

A) edible.

B) plentiful.

C) conspicuous.

D) natural.

Estimated Difficulty: Easy	**Key:** A

Choice A is the best answer. The last paragraph of Passage 2 presents the results of an experiment in which the author scattered unfamiliar objects in the path of some ravens. According to the passage, the birds initially "contacted all new objects preferentially" but in "subsequent trials" only preferred those "previously novel items" that "were edible" (lines 75-81).

Choice B is incorrect because the ravens studied by the author only preferred those "previously novel items" that "were edible," whereas "the inedible objects became 'background' items, just like the leaves, grass, and pebbles" (lines 80-83). In other words, plentiful items did not continue to interest the ravens unless the items were edible.

Choice C is incorrect because the ravens studied by the author only preferred those "previously novel items" that "were edible," whereas "the inedible objects became 'background' items, just like the leaves, grass, and pebbles, even if they were highly conspicuous" (lines 80-84). In other words, conspicuous items did not continue to interest the ravens unless the items were edible.

Choice D is incorrect because the ravens studied by the author only preferred those "previously novel items" that "were edible," whereas "the inedible objects

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became 'background' items, just like the leaves, grass, and pebbles" (lines 80-83). In other words, natural items did not continue to interest the ravens unless the items were edible.

3

The crows in Passage 1 and the ravens in Passage 2 shared which trait?

A) They modified their behavior in response to changes in their environment.

B) They formed a strong bond with the humans who were observing them.

C) They manufactured useful tools for finding and accessing food.

D) They mimicked the actions they saw performed around them.

Estimated Difficulty: Medium	**Key:** A

Choice A is the best answer. Both bird species studied modified their behavior in response to changes in their environment. The researchers described in Passage 1 "had gotten wild crows used to finding meat tidbits in holes in a log" (lines 20-21). In other words, the researchers had repeatedly placed meat in the log—that is, changed the crows' environment—and the birds had responded by modifying their behavior, a point reinforced in line 22, which noted that the birds began "checking the log reliably." The ravens in Passage 2 act in analogous fashion, responding to the introduction of new objects in their environment by "pick[ing] them out at a rate of up to tens of thousands of times greater than background or previously contacted objects" (lines 76-78).

Choice B is incorrect because while there is some evidence that the ravens described in Passage 2 formed a bond with the author, going on walks with him and possibly viewing him as their "teacher," there is no evidence that a similar bond formed between the researchers described in Passage 1 and the crows they studied. Indeed, these researchers "hid behind a blind" (line 24) in an effort to avoid contact with their subjects.

Choice C is incorrect because while crows' tool-making ability is the central focus of the experiment described in Passage 1, there is no evidence that the ravens in Passage 2 did anything similar. Passage 1 does mention that "some ravens" use "seemingly insightful string-pulling solutions" (lines 44-45), but nothing in Passage 2 suggests that the ravens in that particular study had or displayed tool-making abilities.

Choice D is incorrect because while there is some evidence that the ravens described in Passage 2 mimicked human behavior, going on walks with the author and possibly viewing him as their "teacher," there is no evidence that the crows in Passage 1 did any mimicking. Passage 1, in fact, suggests that the ability of the crow to produce the meat-fishing tool was innate rather than a skill it had acquired from either humans or other birds.

Questions 4-6 are based on the following passage and supplementary material.

This passage is adapted from Richard Florida, *The Great Reset*. ©2010 by Richard Florida.

In today's idea-driven economy, the cost of time is what really matters. With the constant pressure to innovate, it makes little sense to waste countless collective hours commuting. So, the most efficient and productive regions are those in which people are thinking and working—not sitting in traffic.

The auto-dependent transportation system has reached its limit in most major cities and megaregions. Commuting by car is among the least efficient of all our activities—not to mention among the least enjoyable, according to detailed research by the Nobel Prize–winning economist Daniel Kahneman and his colleagues. Though one might think that the economic crisis beginning in 2007 would have reduced traffic (high unemployment means fewer workers traveling to and from work), the opposite has been true. Average commutes have lengthened, and congestion has gotten worse, if anything. The average commute rose in 2008 to 25.5 minutes, "erasing years of decreases to stand at the level of 2000, as people had to leave home earlier in the morning to pick up friends for their ride to work or to catch a bus or subway train," according to the U.S. Census Bureau, which collects the figures. And those are average figures. Commutes are far longer in the big West Coast cities of Los Angeles and San Francisco and the East Coast cities of New York, Philadelphia, Baltimore, and Washington, D.C. In many of these cities, gridlock has become the norm, not just at rush hour but all day, every day.

The costs are astounding. In Los Angeles, congestion eats up more than 485 million working hours a year; that's seventy hours, or nearly two weeks, of full-time work per commuter. In D.C., the time cost of congestion is sixty-two hours per worker per year. In New York it's forty-four hours. Average it out, and the time cost across America's thirteen biggest city-regions is fifty-one hours per worker per year. Across the country, commuting wastes 4.2 billion hours of work time annually—nearly a full workweek for every commuter. The overall cost to the U.S. economy is nearly $90 billion when lost productivity and wasted fuel are taken into account. At the Martin Prosperity Institute, we calculate that

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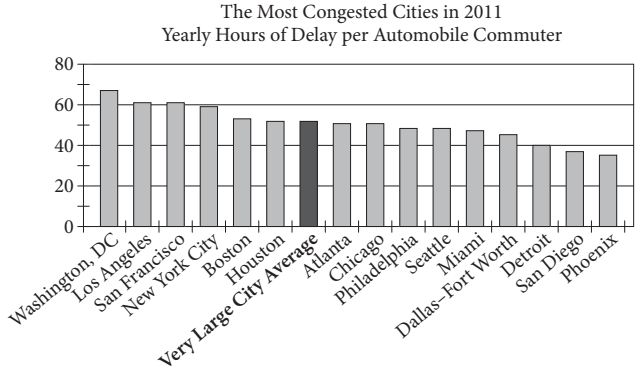
every minute shaved off America's commuting time is worth $19.5 billion in value added to the economy. The numbers add up fast: five minutes is worth $97.7 billion; ten minutes, $195 billion; fifteen minutes, $292 billion.

It's ironic that so many people still believe the main remedy for traffic congestion is to build more roads and highways, which of course only makes the problem worse. New roads generate higher levels of "induced traffic," that is, new roads just invite drivers to drive more and lure people who take mass transit back to their cars. Eventually, we end up with more clogged roads rather than a long-term improvement in traffic flow.

The coming decades will likely see more intense clustering of jobs, innovation, and productivity in a smaller number of bigger cities and city-regions. Some regions could end up bloated beyond the capacity of their infrastructure, while others struggle, their promise stymied by inadequate human or other resources.



Adapted from Adam Werbach, "The American Commuter Spends 38 Hours a Year Stuck in Traffic." ©2013 by The Atlantic.

4

The passage most strongly suggests that researchers at the Martin Prosperity Institute share which assumption?

A) Employees who work from home are more valuable to their employers than employees who commute.

B) Employees whose commutes are shortened will use the time saved to do additional productive work for their employers.

C) Employees can conduct business activities, such as composing memos or joining conference calls, while commuting.

D) Employees who have lengthy commutes tend to make more money than employees who have shorter commutes.

Estimated Difficulty: Medium	**Key:** B

Choice B is the best answer because details in the third paragraph (lines 30-46) strongly suggest that researchers ("we") at the Martin Prosperity Institute assume that shorter commutes will lead to more productive time for workers. The author notes that "across the country, commuting wastes 4.2 billion hours of work time annually" and that "the overall cost to the U.S. economy is nearly $90 billion when lost productivity and wasted fuel are taken into account" (lines 37-41). Given also that those at the institute "calculate that every minute shaved off America's commuting time is worth $19.5 billion in value added to the economy" (lines 42-44), it can reasonably be concluded that some of that added value is from heightened worker productivity.

Choice A is incorrect because there is no evidence in the passage that researchers at the Martin Prosperity Institute assume that employees who work from home are more valuable to their employers than employees who commute. Although the passage does criticize long commutes, it does not propose working from home as a solution.

Choice C is incorrect because there is no evidence in the passage that researchers at the Martin Prosperity Institute assume that employees can conduct business activities, such as composing memos or joining conference calls, while commuting. The passage does discuss commuting in some detail, but it does not mention activities that commuters can or should be undertaking while commuting, and it generally portrays commuting time as lost or wasted time.

Choice D is incorrect because there is no evidence in the passage that researchers at the Martin Prosperity Institute assume that employees who have lengthy commutes tend to make more money than employees who have shorter commutes. The passage does not draw any clear links between the amount of money employees make and the commutes they have.

5

As used in line 55, "intense" most nearly means

A) emotional.

B) concentrated.

C) brilliant.

D) determined.

Estimated Difficulty: Easy	**Key:** B

Choice B is the best answer because the context makes clear that the clustering of jobs, innovation, and productivity will be more concentrated in, or more densely packed into, "a smaller number of bigger cities and city-regions" (lines 56-57).

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Choice A is incorrect because although "intense" sometimes means "emotional," it would make no sense in context to say that the clustering of jobs, innovation, and productivity will be more emotional in "a smaller number of bigger cities and city-regions" (lines 56-57).

Choice C is incorrect because although "intense" sometimes means "brilliant," it would make no sense in context to say that the clustering of jobs, innovation, and productivity will be more brilliant in "a smaller number of bigger cities and city-regions" (lines 56-57).

Choice D is incorrect because although "intense" sometimes means "determined," it would make no sense in context to say that the clustering of jobs, innovation, and productivity will be more determined in "a smaller number of bigger cities and city-regions" (lines 56-57).

6

Which claim about traffic congestion is supported by the graph?

A) New York City commuters spend less time annually delayed by traffic congestion than the average for very large cities.

B) Los Angeles commuters are delayed more hours annually by traffic congestion than are commuters in Washington, D.C.

C) Commuters in Washington, D.C., face greater delays annually due to traffic congestion than do commuters in New York City.

D) Commuters in Detroit spend more time delayed annually by traffic congestion than do commuters in Houston, Atlanta, and Chicago.

Estimated Difficulty: Easy	**Key:** C

Choice C is the best answer. Higher bars on the graph represent longer annual commute delays than do lower bars; moreover, the number of hours of annual commute delay generally decreases as one moves from left to right on the graph. The bar for Washington, D.C., is higher than and to the left of that for New York City, meaning that D.C. automobile commuters experience greater amounts of delay each year.

Choice A is incorrect because the graph's bar for New York City is higher than and to the left of that for the average for very large cities, meaning that New York City automobile commuters experience greater, not lesser, amounts of delay each year.

Choice B is incorrect because the graph's bar for Los Angeles is lower than and to the right of that for Washington, D.C., meaning that Los Angeles automobile commuters experience lesser, not greater, amounts of delay each year.

Choice D is incorrect because the graph's bar for Detroit is lower than and to the right of those for Houston, Atlanta, and Chicago, meaning that Detroit automobile commuters experience lesser, not greater, amounts of delay each year.

Questions 7-9 are based on the following passage.

This passage is adapted from a speech delivered by Congresswoman Barbara Jordan of Texas on July 25, 1974, as a member of the Judiciary Committee of the United States House of Representatives. In the passage, Jordan discusses how and when a United States president may be impeached, or charged with serious offenses, while in office. Jordan's speech was delivered in the context of impeachment hearings against then president Richard M. Nixon.

Today, I am an inquisitor. An hyperbole would not be fictional and would not overstate the solemnness that I feel right now. My faith in the Constitution is whole; it is complete; it is total. And I am not going to sit here and be an idle spectator to the diminution, the subversion, the destruction, of the Constitution.

"Who can so properly be the inquisitors for the nation as the representatives of the nation themselves?" "The subjects of its jurisdiction are those offenses which proceed from the misconduct of public men."* And that's what we're talking about. In other words, [the jurisdiction comes] from the abuse or violation of some public trust.

It is wrong, I suggest, it is a misreading of the Constitution for any member here to assert that for a member to vote for an article of impeachment means that that member must be convinced that the President should be removed from office. The Constitution doesn't say that. The powers relating to impeachment are an essential check in the hands of the body of the legislature against and upon the encroachments of the executive. The division between the two branches of the legislature, the House and the Senate, assigning to the one the right to accuse and to the other the right to judge—the framers of this Constitution were very astute. They did not make the accusers and the judges . . . the same person.

We know the nature of impeachment. We've been talking about it a while now. It is chiefly designed for the President and his high ministers to somehow be called into account. It is designed to "bridle" the executive if he engages in excesses. "It is designed as a method of national inquest into the conduct of public men."* The framers confided in the Congress the power, if need be, to remove the President in order to strike a delicate balance between a President swollen with power and grown tyrannical, and preservation of the independence of the executive.

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The nature of impeachment: a narrowly channeled exception to the separation of powers maxim. The Federal Convention of 1787 said that. It limited impeachment to high crimes and misdemeanors, and discounted and opposed the term "maladministration." "It is to be used only for great misdemeanors," so it was said in the North Carolina ratification convention. And in the Virginia ratification convention: "We do not trust our liberty to a particular branch. We need one branch to check the other."

… The North Carolina ratification convention: "No one need be afraid that officers who commit oppression will pass with immunity." "Prosecutions of impeachments will seldom fail to agitate the passions of the whole community," said Hamilton in the *Federalist* Papers, number 65. "We divide into parties more or less friendly or inimical to the accused."* I do not mean political parties in that sense.

The drawing of political lines goes to the motivation behind impeachment; but impeachment must proceed within the confines of the constitutional term "high crime[s] and misdemeanors." Of the impeachment process, it was Woodrow Wilson who said that "Nothing short of the grossest offenses against the plain law of the land will suffice to give them speed and effectiveness. Indignation so great as to overgrow party interest may secure a conviction; but nothing else can."

Common sense would be revolted if we engaged upon this process for petty reasons. Congress has a lot to do: appropriations, tax reform, health insurance, campaign finance reform, housing, environmental protection, energy sufficiency, mass transportation. Pettiness cannot be allowed to stand in the face of such overwhelming problems. So today we're not being petty. We're trying to be big, because the task we have before us is a big one.

*Jordan quotes from *Federalist* No. 65, an essay by Alexander Hamilton, published in 1788, on the powers of the United States Senate, including the power to decide cases of impeachment against a president of the United States.

7

The stance Jordan takes in the passage is best described as that of

A) an idealist setting forth principles.

B) an advocate seeking a compromise position.

C) an observer striving for neutrality.

D) a scholar researching a historical controversy.

Estimated Difficulty: Hard	**Key:** A

Choice A is the best answer. Jordan helps establish her idealism by declaring that she is an "inquisitor" (line 1) and that her "faith in the Constitution is whole; it is complete; it is total" (lines 3-4). At numerous points in the passage, Jordan sets forth principles (e.g., "The powers relating to impeachment are an essential check in the hands of the body of the legislature against and upon the encroachments of the executive," in lines 18-20) and makes reference to important documents that do the same, including the U.S. Constitution and *Federalist* No. 65.

Choice B is incorrect because although Jordan is advocating a position, there is no evidence in the passage that she is seeking a compromise position. Indeed, she notes that she is "not going to sit here and be an idle spectator to the diminution, the subversion, the destruction, of the Constitution" (lines 4-6), indicating that she is not seeking compromise.

Choice C is incorrect because Jordan is a participant ("an inquisitor," line 1) in the proceedings, not a mere observer. Indeed, she notes that she is "not going to sit here and be an idle spectator to the diminution, the subversion, the destruction, of the Constitution" (lines 4-6).

Choice D is incorrect because Jordan is identified as a congresswoman and an "inquisitor" (line 1), not a scholar, and because she is primarily discussing events happening at the moment, not researching an unidentified historical controversy. Although she refers to historical documents and individuals, her main emphasis is on the (then) present impeachment hearings.

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8

In lines 49-54 ("Prosecutions . . . sense"), what is the most likely reason Jordan draws a distinction between two types of "parties"?

A) To counter the suggestion that impeachment is or should be about partisan politics

B) To disagree with Hamilton's claim that impeachment proceedings excite passions

C) To contend that Hamilton was too timid in his support for the concept of impeachment

D) To argue that impeachment cases are decided more on the basis of politics than on justice

Estimated Difficulty: Medium	**Key:** A

Choice A is the best answer. Jordan is making a distinction between two types of "parties": the informal associations to which Alexander Hamilton refers and formal, organized political parties such as the modern-day Republican and Democratic parties. Jordan anticipates that listeners to her speech might misinterpret her use of Hamilton's quotation as suggesting that she thinks impeachment is essentially a tool of organized political parties to achieve partisan ends, with one party attacking and another defending the president. Throughout the passage, and notably in the seventh paragraph (lines 55-63), Jordan makes clear that she thinks impeachment should be reserved only for the most serious of offenses—ones that should rankle people of any political affiliation.

Choice B is incorrect because Jordan offers no objection to Hamilton's notion that impeachment proceedings excite passions. Indeed, she quotes Hamilton extensively in a way that indicates that she fundamentally agrees with his view on impeachment. Moreover, she acknowledges that her own speech is impassioned—that she feels a "solemnness" (line 2) and a willingness to indulge in "hyperbole" (line 1).

Choice C is incorrect because Jordan offers no objection to Hamilton's level of support for the concept of impeachment. Indeed, she quotes Hamilton extensively in a way that indicates that she fundamentally agrees with his view on impeachment.

Choice D is incorrect because Jordan suggests that she and her fellow members of Congress are "trying to be big" (line 71), or high-minded, rather than decide the present case on the basis of politics. Indeed, throughout the last four paragraphs of the passage (lines 37-72), she elaborates on the principled, just basis on which impeachment should proceed. Moreover, throughout the passage, Jordan is focused on the present impeachment hearings, not on the justice or injustice of impeachments generally.

9

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

A) Lines 13-17 ("It . . . office")

B) Lines 20-24 ("The division . . . astute")

C) Lines 55-58 ("The drawing . . . misdemeanors'")

D) Lines 65-68 ("Congress . . . transportation")

Estimated Difficulty: Hard	**Key:** C

Choice C is the best answer because in lines 55-58, Jordan draws a contrast between political motivations and "high crime[s] and misdemeanors" as the basis for impeachment and argues that impeachment "must proceed within the confines" of the latter concept. These lines thus serve as the best evidence for the answer to the previous question.

Choice A is incorrect because lines 13-17 only address a misconception that Jordan contends some people have about what a vote for impeachment means. Therefore, these lines do not serve as the best evidence for the answer to the previous question.

Choice B is incorrect because lines 20-24 only speak to a division of responsibility between the two houses of the U.S. Congress. Therefore, these lines do not serve as the best evidence for the answer to the previous question.

Choice D is incorrect because lines 65-68 serve mainly to indicate that the U.S. Congress has an extensive and important agenda. Therefore, these lines do not serve as the best evidence for the answer to the previous question.

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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.

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).

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.

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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.

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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 1 watched as Kingman squeezes dollops of paint from several tubes into a tin watercolor 2 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.

Kingman was keenly interested in landscape painting from an early age. His interest was so keen, in fact, that he was named after it. In Hong Kong, where Kingman completed his schooling, teachers at that time customarily assigned students a formal "school name." The young boy who had been Dong Moy Shu became Dong Kingman. The name Kingman was selected for its two 3 parts, "king" and "man"; Cantonese for "scenery" and "composition." As Kingman developed as a painter, his works were often compared to paintings by Chinese landscape artists dating back to CE 960, a time when a strong tradition of landscape painting emerged in Chinese art. Kingman, however, departed 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.

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 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 4 delicately painted creatures, such as a tiny, barely visible cat prowling in the bushes of a park. 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 internationally, garnering 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." 5

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1

A) NO CHANGE
B) had watched
C) would watch
D) watches

Estimated Difficulty: Easy	**Key:** D

Choice D is the best answer because the simple present tense verb "watches" is consistent with the tense of the verbs in the rest of the sentence and paragraph.

Choice A is incorrect because "watched" creates an inappropriate shift to the past tense.

Choice B is incorrect because "had watched" creates an inappropriate shift to the past perfect tense.

Choice C is incorrect because "would watch" creates an inappropriate shift that suggests a habitual or hypothetical aspect when other verbs in the sentence and paragraph indicate that a specific, actual instance is being narrated.

2

A) NO CHANGE
B) box. From just a few primary colors,
C) box from just a few primary colors,
D) box, from just a few primary colors

Estimated Difficulty: Medium	**Key:** B

Choice B is the best answer because it provides punctuation that creates two grammatically complete and standard sentences.

Choice A is incorrect because it results in a comma splice as well as some confusion about what the prepositional phrase "from just a few primary colors" modifies.

Choice C is incorrect because it results in a run-on sentence as well as some confusion about what the prepositional phrase "from just a few primary colors" modifies.

Choice D is incorrect because it results in a comma splice.

3

A) NO CHANGE
B) parts: "king" and "man,"
C) parts "king" and "man";
D) parts; "king" and "man"

Estimated Difficulty: Hard	**Key:** B

Choice B is the best answer because the colon after "parts" effectively signals that what follows in the sentence further defines what the "two parts" of Kingman's name are and because the comma after "man" properly indicates that "'king' and 'man'" and "Cantonese for 'scenery' and 'composition'" are nonrestrictive appositives.

Choice A is incorrect because the semicolon after "man" incorrectly joins an independent clause and a phrase. Moreover, the comma after "parts" is arguably a weak form of punctuation to be signaling the strong break in the sentence indicated here.

Choice C is incorrect because the semicolon after "man" incorrectly joins an independent clause and a phrase and because the absence of appropriate punctuation after "parts" fails to indicate that "two parts" and "'king' and 'man'" are nonrestrictive appositives.

Choice D is incorrect because the semicolon after "parts" incorrectly joins an independent clause and two phrases and because the absence of appropriate punctuation after "man" fails to indicate that "'king' and 'man'" and "Cantonese for 'scenery' and 'composition'" are nonrestrictive appositives.

4

The writer wants to complete the sentence with a third example of a detail Kingman uses to create his majestic city skylines. Which choice best accomplishes this goal?

A) NO CHANGE
B) exquisitely lettered street and storefront signs.
C) other details that help define Kingman's urban landscapes.
D) enormous ships docking at busy urban ports.

Estimated Difficulty: Hard	**Key:** D

Choice D is the best answer because the phrase "enormous ships docking at busy urban ports" effectively continues the sentence's series of details ("skyscrapers towering in the background" and "bridges connecting neighborhoods") conveying the majesty of city skylines as depicted by Kingman.

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Choice A is incorrect because the phrase "delicately painted creatures, such as a tiny, barely visible cat prowling in the bushes of a park" does not convey a sense of the majesty of city skylines as depicted by Kingman and thus does not effectively continue the sentence's series of details ("skyscrapers towering in the background" and "bridges connecting neighborhoods").

Choice B is incorrect because the phrase "exquisitely lettered street and storefront signs" does not convey a sense of the majesty of city skylines as depicted by Kingman and thus does not effectively continue the sentence's series of details ("skyscrapers towering in the background" and "bridges connecting neighborhoods").

Choice C is incorrect because the phrase "other details that help define Kingman's urban landscapes" is too vague and general to constitute a third example that conveys a sense of the majesty of city skylines as depicted by Kingman and thus does not effectively continue the sentence's series of details ("skyscrapers towering in the background" and "bridges connecting neighborhoods").

5

The writer wants to conclude the passage with a sentence that emphasizes an enduring legacy of Kingman's work. Which choice would best accomplish this goal?

A) Although Kingman's work might not be as famous as that of some other watercolor painters, such as Georgia O'Keeffe and Edward Hopper, it is well regarded by many people.

B) 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.

C) The urban landscapes depicted in Kingman's body of work are a testament to the aptness of the name chosen for Kingman when he was just a boy.

D) Kingman's work was but one example of a long-lasting tradition refreshed by an innovative artist with a new perspective.

Estimated Difficulty: Hard	**Key:** B

Choice B is the best answer because it concludes the passage with a sentence that emphasizes the enduring legacy of Kingman's work by indicating that museums continue to make Kingman's iconic paintings accessible to the public.

Choice A is incorrect because it concludes the passage with a sentence that acknowledges that the works of other painters are more famous than Kingman's (which downplays, rather than emphasizes, the enduring legacy of Kingman's work) and offers only a general assertion that Kingman's work is "well regarded by many people."

Choice C is incorrect because instead of referring to the enduring legacy of Kingman's work, it concludes the passage with a sentence that recalls a detail the passage provides about Kingman's early life.

Choice D is incorrect because it concludes the passage with a sentence that is too vague and general to emphasize effectively an enduring legacy of Kingman's work. It is not clear what the idea of refreshing a long-lasting tradition is intended to mean or how (or even whether) this represents an enduring legacy. Moreover, referring to Kingman's work as "but one example" downplays the significance of any potential legacy that might be suggested.

Questions 6-10 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. Stoplight timing is coordinated to alleviate rush hour traffic jams in a congested downtown area. When any one of these changes **6** occur, 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 designing new ones. Most transportation planners work in or near cities, **7** 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 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 **8** current road as it is designed at this time can efficiently accommodate, the

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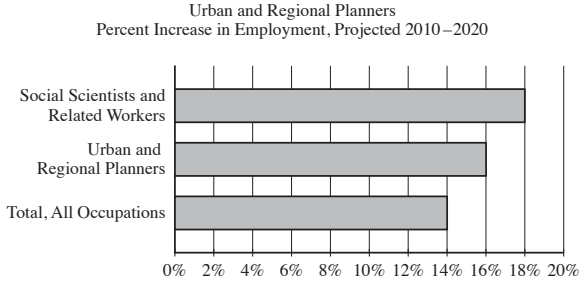
transportation planner might recommend widening the road to add another lane.

Transportation planners work closely with a number of community stakeholders, such as government officials and other interested organizations and individuals. For instance, representatives from the local public health department might provide input in designing a network of trails and sidewalks to encourage people to walk more. 9 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.

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 10 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, predicting that employment of urban and regional planners will increase 16 percent between 2010 and 2020. 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

A) NO CHANGE
B) occur, they are
C) occurs, they are
D) occurs, it is

Estimated Difficulty: Hard	**Key:** D

Choice D is the best answer because it maintains agreement between the pronoun ("it") and the antecedent ("any one") and between the subject ("any one") and the verb ("occurs").

Choice A is incorrect because the plural verb "occur" does not agree with the singular subject "any one."

Choice B is incorrect because the plural verb "occur" does not agree with the singular subject "any one" and because the plural pronoun "they" does not agree with the singular antecedent "any one."

Choice C is incorrect because the plural pronoun "they" does not agree with the singular antecedent "any one."

7

Which choice results in the most effective transition to the information that follows in the paragraph?

A) NO CHANGE
B) where job opportunities are more plentiful.
C) and the majority are employed by government agencies.
D) DELETE the underlined portion and end the sentence with a period.

Estimated Difficulty: Medium	**Key:** A

Choice A is the best answer because it effectively signals the shift in the paragraph to the example of the work a transportation planner might perform if he or she were employed in a rural area and asked to consider the effects of a new factory built "on the outskirts of a small town."

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Choice B is incorrect because noting that job opportunities are more plentiful in cities does not effectively signal the shift in the paragraph to the example of the work a transportation planner might perform if he or she were employed in a rural area.

Choice C is incorrect because noting that most transportation planners work for government agencies does not effectively signal the shift in the paragraph to the example of the work a transportation planner might perform if he or she were employed in a rural area.

Choice D is incorrect because the proposed deletion would create a jarring shift from the statement "Most transportation planners work in or near cities" to the example of the work a transportation planner might perform if he or she were employed in a rural area.

8

A) NO CHANGE
B) current design of the road right now
C) road as it is now currently designed
D) current design of the road

Estimated Difficulty: Medium	**Key:** D

Choice D is the best answer because it offers a clear and concise wording without redundancy or wordiness.

Choice A is incorrect because "current" is redundant with "at this time" and because "as it is designed" is unnecessarily wordy.

Choice B is incorrect because "current" is redundant with "right now."

Choice C is incorrect because "now" is redundant with "currently."

9

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 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" that transportation planners work with, the sentence does not suggest 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.

10

A) NO CHANGE
B) varied, and including
C) varied and which include
D) varied, which include

Estimated Difficulty: Hard	**Key:** A

Choice A is the best answer because it effectively uses a comma and "including" to set off the list of varied fields in which transportation planners major.

Choice B is incorrect because "and including" results in an ungrammatical sentence.

Choice C is incorrect because "and which include" results in an ungrammatical sentence.

Choice D is incorrect because is it unclear from this construction to what exactly the relative pronoun "which" refers.

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Math

The SAT 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: 58 (20 questions on the no-calculator portion; 38 questions on the calculator portion).
  - 45 standard multiple-choice questions.
  - 13 student-produced response questions.
- Time allotted for Math Test – No Calculator: 25 minutes; time allotted for Math Test – Calculator: 55 minutes.

What the Math Test Is Like

Instead of testing you on every math topic, the SAT 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 will 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 30 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.

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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.

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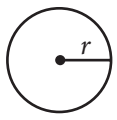
Math Test – No Calculator Questions

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 6 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

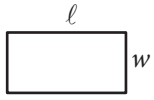
NOTES

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

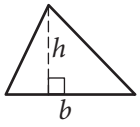
REFERENCE



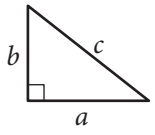
$A = \pi r^2$
$C = 2\pi r$



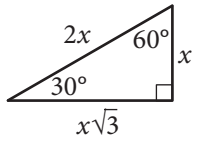
$A = \ell w$

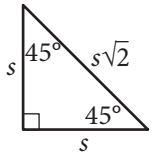


$A = \frac{1}{2}bh$

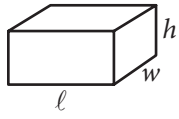


$c^2 = a^2 + b^2$

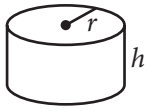




Special Right Triangles

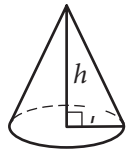


$V = \ell wh$

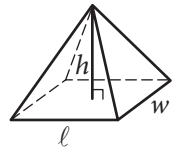


$V = \pi r^2 h$

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



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



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

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

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

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

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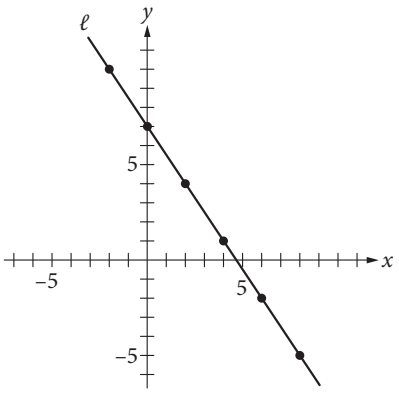
1

Line ℓ is graphed in the xy-plane below.



If line ℓ is translated up 5 units and right 7 units, then what is the slope of the new line?

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

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

C) $-\frac{8}{9}$

D) $-\frac{11}{14}$

Estimated Difficulty: Easy	**Key:** B

Choice B is correct. The slope of a line can be determined by finding the difference in the y-coordinates divided by the difference in the x-coordinates for any two points on the line. Using the points indicated, the slope of line ℓ is $-\frac{3}{2}$. Translating line ℓ moves all the points on the line the same distance in the same direction, and the image will be a line parallel to ℓ. Therefore, the slope of the image is also $-\frac{3}{2}$.

Choice A is incorrect. This value may result from a combination of errors. You may have erroneously determined the slope of the new line by adding 5 to the numerator and adding 7 to the denominator in the slope of line ℓ and gotten the result $\frac{(-3+5)}{(-2+7)}$.

Choice C is incorrect. This value may result from a combination of errors. You may have erroneously determined the slope of the new line by subtracting 5 from the numerator and subtracting 7 from the denominator in the slope of line ℓ.

Choice D is incorrect and may result from adding $\frac{5}{7}$ to the slope of line ℓ.

2

The average number of students per classroom, y, at Central High School can be estimated using the equation $y = 0.8636x + 27.227$, where x represents the number of years since 2004 and $x \leq 10$. Which of the following statements is the best interpretation of the number 0.8636 in the context of this problem?

A) The estimated average number of students per classroom in 2004

B) The estimated average number of students per classroom in 2014

C) The estimated yearly decrease in the average number of students per classroom

D) The estimated yearly increase in the average number of students per classroom

Estimated Difficulty: Easy	**Key:** D

Choice D is correct. When an equation is written in the form $y = mx + b$, the coefficient of the x-term (in this case 0.8636) is the slope of the graph of this equation in the xy-plane. The slope of the graph of this linear equation gives the amount that the average number of students per classroom (represented by y) changes per year (represented by x).

Choice A is incorrect and may result from a misunderstanding of slope and y-intercept. The y-intercept of the graph of the equation represents the estimated average number of students per classroom in 2004.

Choice B is incorrect and may result from a misunderstanding of the limitations of the model. You may have seen that $x \leq 10$ and erroneously used this statement to determine that the model finds the average number of students in 2014.

Choice C is incorrect and may result from a misunderstanding of slope. You may have recognized that slope models the rate of change but thought that a slope of less than 1 indicates a decreasing function.

3

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

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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.

4

In the complex number system, which of the following is equal to $(14 - 2i)(7 + 12i)$? (Note: $i = \sqrt{-1}$)

A) 74
B) 122
C) $74 + 154i$
D) $122 + 154i$

Estimated Difficulty: Medium	**Key:** D

Choice D is correct. Applying the distributive property to multiply the binomials yields the expression $98 + 168i - 14i - 24i^2$. The note in the question reminds you that $i = \sqrt{-1}$, therefore, $i^2 = -1$. Substituting this value into the expression gives you $98 + 168i - 14i - (-24)$, and combining like terms results in $122 + 154i$.

Choice A is incorrect and may result from a combination of errors. You may not have correctly distributed when multiplying the binomials, multiplying only the first terms together and the second terms together. You may also have used the incorrect equality $i^2 = 1$.

Choice B is incorrect and may result from a combination of errors. You may not have correctly distributed when multiplying the binomials, multiplying only the first terms together and the second terms together.

Choice C is incorrect and results from misapplying the statement $i = \sqrt{-1}$.

5

Which of the following is equal to $\sin\left(\frac{\pi}{5}\right)$?

A) $-\cos\left(\frac{\pi}{5}\right)$
B) $-\sin\left(\frac{\pi}{5}\right)$
C) $\cos\left(\frac{3\pi}{10}\right)$
D) $\sin\left(\frac{7\pi}{10}\right)$

Estimated Difficulty: Hard	**Key:** C

Choice C is correct. Sine and cosine are cofunctions, or are related by the equation $\sin(x) = \cos\left(\frac{\pi}{2} - x\right)$. Therefore, $\sin\left(\frac{\pi}{5}\right) = \cos\left(\frac{\pi}{2} - \frac{\pi}{5}\right)$, which reduces to $\cos\left(\frac{3\pi}{10}\right)$.

Choice A is incorrect and may result from a misunderstanding about trigonometric relationships. You may have thought that cosine is the inverse function of sine and therefore reasoned that the negative of the cosine of an angle is equivalent to the sine of that angle.

Choice B is incorrect and may result from a misunderstanding of the unit circle and how it relates to trigonometric expressions. You may have thought that, on a coordinate grid, the negative sign only changes the orientation of the triangle formed, not the value of the trigonometric expression.

Choice D is incorrect. You may have confused the relationship between sine and cosine and erroneously added $\frac{\pi}{2}$ to the given angle measure instead of subtracting the angle measure from $\frac{\pi}{2}$.

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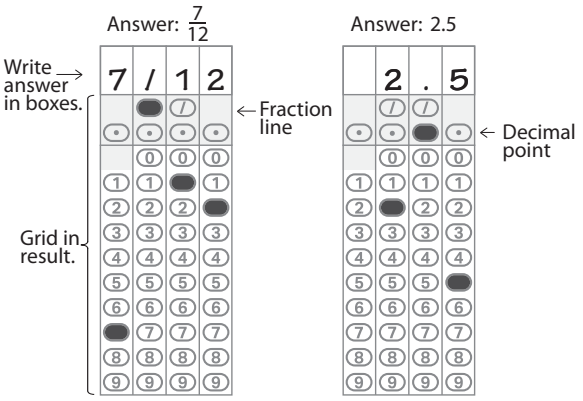
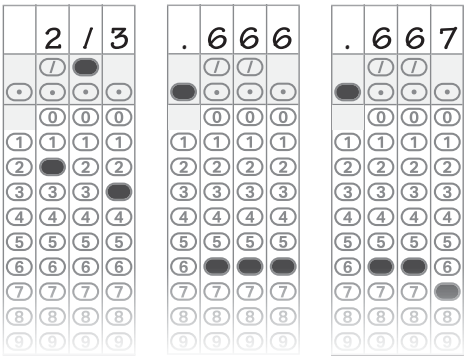
Student-Produced Response Math Questions

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.

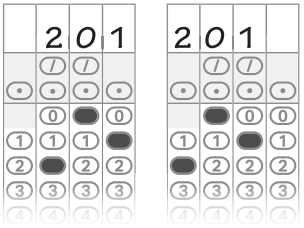
1. Although not required, it is suggested that you write your answer in the boxes at the top of the columns to help you fill in the bubbles accurately. You will receive credit only if the bubbles are filled in correctly.
2. Mark no more than one bubble in any column.
3. No question has a negative answer.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



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



Answer: 201– either position is correct



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

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. Diameter is twice the value of the radius; therefore, the diameter is 26.

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Math Test – Calculator Questions

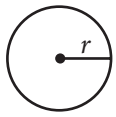
DIRECTIONS

For questions 1-8, solve each problem, choose the best answer from the choices provided, and fill in the corresponding bubble on your answer sheet. **For questions 9-10**, solve the problem and enter your answer in the grid on the answer sheet. Please refer to the directions before question 6 on page 30 on how to enter your answers in the grid. You may use any available space in your test booklet for scratch work.

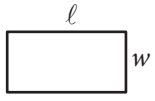
NOTES

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

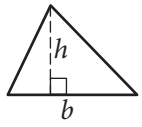
REFERENCE



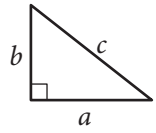
$A = \pi r^2$
$C = 2\pi r$



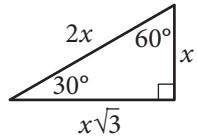
$A = \ell w$

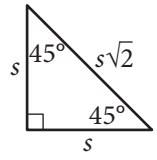


$A = \frac{1}{2}bh$

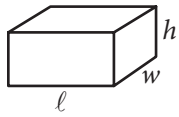


$c^2 = a^2 + b^2$

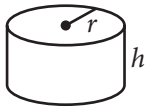




Special Right Triangles

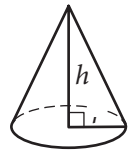


$V = \ell wh$

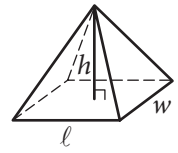


$V = \pi r^2 h$

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



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



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

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

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

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

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1

The recommended daily calcium intake for a 20-year-old person is 1,000 milligrams (mg). One cup of milk contains 299 mg of calcium and one cup of juice contains 261 mg of calcium. Which of the following inequalities represents the possible number of cups of milk, m, and cups of juice, j, a 20-year-old person could drink in a day to meet or exceed the recommended daily calcium intake from these drinks alone?

A) $299m + 261j \geq 1{,}000$

B) $299m + 261j > 1{,}000$

C) $\frac{299}{m} + \frac{261}{j} \geq 1{,}000$

D) $\frac{299}{m} + \frac{261}{j} > 1{,}000$

Estimated Difficulty: Easy	**Key:** A

Choice A is correct. Multiplying the number of cups of milk by the amount of calcium each cup contains and multiplying the number of cups of juice by the amount of calcium each cup contains gives the total amount of calcium from each source. You must then find the sum of these two numbers to find the total amount of calcium. Because the question asks for the calcium from these two sources to meet or exceed the recommended daily intake, the sum of these two products must be greater than or equal to 1,000.

Choice B is incorrect and may result from a misunderstanding of the meaning of inequality symbols as they relate to real-life situations. This answer does not allow for the daily intake to meet the recommended daily amount.

Choice C is incorrect and may result from a misunderstanding of proportional relationships. Here the wrong operation is applied, with the total amount of calcium per cup divided by the number of cups of each type of drink. These values should be multiplied.

Choice D is incorrect and may result from a combination of mistakes. The inequality symbol used allows the option to exceed, but not to meet, the recommended daily value, and the wrong operation may have been applied when calculating the total amount of calcium intake from each drink.

2

A company's manager estimated that the cost C, in dollars, of producing n items is $C = 7n + 350$. The company sells each item for $12. The company makes a profit when the total income from selling a quantity of items is greater than the total cost of producing that quantity of items. Which of the following inequalities gives all possible values of n for which the manager estimates that the company will make a profit?

A) $n < 70$

B) $n < 84$

C) $n > 70$

D) $n > 84$

Estimated Difficulty: Medium	**Key:** C

Choice C is correct. One way to find the correct answer is to create an inequality. The income from sales of n items is $12n$. For the company to profit, $12n$ must be greater than the cost of producing n items; therefore, the inequality $12n > 7n + 350$ can be used to model the scenario. Solving this inequality yields $n > 70$.

Choice A is incorrect and may result from a misunderstanding of the properties of inequalities. You may have found the number of items of the break-even point as 70 and used the incorrect notation to express the answer, or you may have incorrectly modeled the scenario when setting up an inequality to solve.

Choice B is incorrect and may result from a misunderstanding of how the cost equation models the scenario. If you use the cost of $12 as the number of items n and evaluate the expression $7n$, you will find the value of 84. Misunderstanding how the inequality relates to the scenario might lead you to think n should be less than this value.

Choice D is incorrect and may result from a misunderstanding of how the cost equation models the scenario. If you use the cost of $12 as the number of items n and evaluate the expression $7n$, you will find the value of 84. Misunderstanding how the inequality relates to the scenario might lead you to think n should be greater than this value.

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3

At a primate reserve, the mean age of all the male primates is 15 years, and the mean age of all female primates is 19 years. Which of the following must be true about the mean age m of the combined group of male and female primates at the primate reserve?

A) $m = 17$

B) $m > 17$

C) $m < 17$

D) $15 < m < 19$

Estimated Difficulty: Medium	**Key:** D

Choice D is correct. You must reason that because the mean of the males is lower than that of the females, the combined mean cannot be greater than or equal to that of the females, while also reasoning that because the mean of the females is greater than that of the males, the combined mean cannot be less than or equal to the mean of the males. Therefore, the combined mean must be between the two separate means.

Choice A is incorrect and results from finding the mean of the two means. This answer makes an unjustified assumption that there are an equal number of male and female primates.

Choice B is incorrect and results from finding the mean of the two means and misapplying an inequality to the scenario. This answer makes an unjustified assumption that there are more females than males.

Choice C is incorrect and results from finding the mean of the two means and misapplying an inequality to the scenario. This answer makes an unjustified assumption that there are more males than females.

4

A biology class at Central High School predicted that a local population of animals will double in size every 12 years. The population at the beginning of 2014 was estimated to be 50 animals. If P represents the population n years after 2014, then which of the following equations represents the class's model of the population over time?

A) $P = 12 + 50n$

B) $P = 50 + 12n$

C) $P = 50(2)^{12n}$

D) $P = 50(2)^{\frac{n}{12}}$

Estimated Difficulty: Medium	**Key:** D

Choice D is correct. A population that doubles in size over equal time periods is increasing at an exponential rate. In a doubling scenario, an exponential growth model can be written in the form $y = a(2)^{\frac{n}{b}}$, where a is the initial population (that is, the population when $n = 0$) and b is the number of years it takes for the population to double in size. In this case, the initial population is 50, the number of animals at the beginning of 2014. Therefore, $a = 50$. The text explains that the population will double in size every 12 years. Therefore, $b = 12$.

Choice A is incorrect and may result from a misunderstanding of exponential equations or of the context. This linear model indicates that the initial population is 12 animals and the population is increasing by 50 animals each year. However, this is not the case.

Choice B is incorrect and may result from a misunderstanding of exponential equations or of the context. This linear model indicates that the initial population is 50 animals and the population is increasing by 12 animals each year. However, this is not the case.

Choice C is incorrect. This exponential model indicates that the initial population is 50 animals and is doubling. However, the exponent $12n$ indicates that the population is doubling 12 times per year, not every 12 years.

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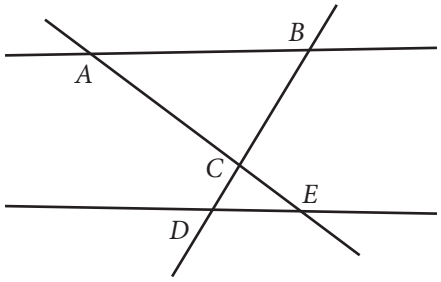
5



Note: Figure not drawn to scale.

In the figure above, $\triangle ABC$ is similar to $\triangle EDC$, with $\angle BAC$ corresponding to $\angle CED$ and $\angle ABC$ corresponding to $\angle CDE$. Which of the following must be true?

A) $\overline{AE} \parallel \overline{BD}$
B) $\overline{AE} \perp \overline{BD}$
C) $\overline{AB} \parallel \overline{DE}$
D) $\overline{AB} \perp \overline{DE}$

Estimated Difficulty: Medium	**Key:** C

Choice C is correct. Given that $\triangle ABC$ is similar to $\triangle EDC$ and $\angle BAC$ corresponds to $\angle CED$, you can determine that $\angle BAC$ is congruent to $\angle CED$. The converse of the alternate interior angle theorem tells us that $\overline{AB} \parallel \overline{DE}$. (You can also use the fact that $\angle ABC$ and $\angle CDE$ are congruent to make a similar argument.)

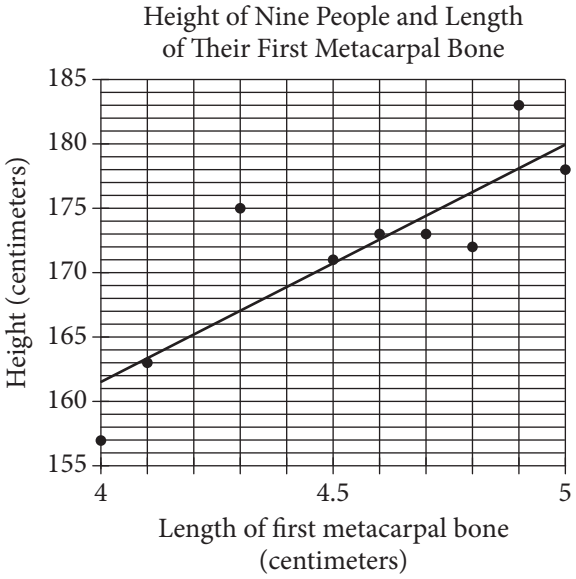
Choice A is incorrect and may result from multiple misconceptions. You may have misidentified the segments as perpendicular and used the wrong notation to express this statement.

Choice B is incorrect and may result from using only the diagram and not considering the given information. The line segments appear to be perpendicular, but need not be, given the information provided.

Choice D is incorrect and may result from misunderstanding either the notation or the vocabulary of parallel and perpendicular lines. You may have incorrectly identified parallel lines as perpendicular.

Questions 6-8 refer to the following information.

The first metacarpal bone is located in the hand. The scatterplot below shows the relationship between the length of the first metacarpal bone and height of 9 people. A line of best fit is also shown.



6

How many of the 9 people have an actual height that differs by more than 3 centimeters from the height predicted by the line of best fit?

A) 2
B) 4
C) 6
D) 9

Estimated Difficulty: Easy	**Key:** B

Choice B is correct. The people who have first metacarpal bones of length 4.0, 4.3, 4.8, and 4.9 centimeters have heights that differ by more than 3 centimeters from the height predicted by the line of best fit.

Choice A is incorrect. There are 2 people whose actual heights are more than 3 centimeters above the height predicted by the line of best fit. However, there are also 2 people whose actual heights are farther than 3 centimeters below the line of best fit.

Choice C is incorrect. There are 6 data points in which the absolute value between the actual height and the height predicted by the line of best fit is greater than 1 centimeter.

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Choice D is incorrect. The data on the graph represents 9 different people; however, the absolute value of the difference between actual height and predicted height is not greater than 3 for all of the people.

7

Which of the following is the best interpretation of the slope of the line of best fit in the context of this problem?

A) The predicted height increase in centimeters for one centimeter increase in the first metacarpal bone

B) The predicted first metacarpal bone increase in centimeters for every centimeter increase in height

C) The predicted height in centimeters of a person with a first metacarpal bone length of 0 centimeters

D) The predicted first metacarpal bone length in centimeters for a person with a height of 0 centimeters

Estimated Difficulty: Easy	**Key:** A

Choice A is correct. The slope is the change in the vertical distance divided by the change in the horizontal distance between any two points on a line. In this context, the change in the vertical distance is the change in the predicted height of a person, and the change in the horizontal distance is the change in the length of his or her first metacarpal bone. The unit rate, or slope, is the increase in predicted height for each increase of one centimeter of the first metacarpal bone.

Choice B is incorrect. If you selected this answer, you may have interpreted the slope incorrectly as run over rise.

Choice C is incorrect. If you selected this answer, you may have mistaken the slope for the y-intercept.

Choice D is incorrect. If you selected this answer, you may have mistaken the slope for the x-intercept.

8

Based on the line of best fit, what is the predicted height for someone with a first metacarpal bone that has a length of 4.45 centimeters?

A) 168 centimeters

B) 169 centimeters

C) 170 centimeters

D) 171 centimeters

Estimated Difficulty: Easy	**Key:** C

Choice C is correct. First, notice that the scale of the x-axis is 0.1, and therefore the x-value of 4.45 is halfway between the unmarked value of 4.4 and the marked value of 4.5. Then find the y-value on the line of best fit that corresponds to an x-value of 4.45, which is 170.

Choice A is incorrect. If you mistakenly find the point on the line between the x-values of 4.3 and 4.4, you'll likely find a predicted metacarpal bone length of 168 centimeters.

Choice B is incorrect. If you mistakenly find the point on the line that corresponds to an x-value of 4.4 centimeters, you'll likely find a predicted height of approximately 169 centimeters.

Choice D is incorrect. If you mistakenly find the point on the line that corresponds to an x-value of 4.5 centimeters, you'll likely find a predicted height of approximately 171 centimeters. You might also choose this option if you mistakenly use the data point that has an x-value closest to 4.45 centimeters.

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Student-Produced Response Math Questions

For questions 9 and 10, you are asked to solve the problem and enter your answer in the grid, as described on page 30 of this booklet.

9

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

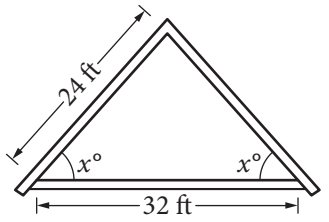
What fraction of solids and liquids in the table are metalloids?

Estimated Difficulty: Easy	**Key:** $\frac{7}{92}$, .076

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 7/92 or .076.

10

An architect drew the sketch below while designing a house roof. The dimensions shown are for the interior of the triangle.



Note: Figure not drawn to scale.

What is the value of cos x?

Estimated Difficulty: Hard	**Key:** $\frac{2}{3}$, $\frac{4}{6}$, $\frac{6}{9}$, $\frac{8}{12}$, .666, .667

Because the triangle is isosceles, constructing a perpendicular from the top vertex to the opposite side will bisect the base and create two smaller right triangles. In a right triangle, the cosine of an acute angle is equal to the length of the side adjacent to the angle divided by the length of the hypotenuse. This gives $\cos x = \frac{16}{24}$, which can be simplified to $\cos x = \frac{2}{3}$. Note that $\frac{16}{24}$ cannot be entered into the answer grid, so this fraction must be reduced. Acceptable answers to grid are 2/3, 4/6, 6/9, 8/12, .666, and .667.

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IMPORTANT NOTE REGARDING TERMS AND CONDITIONS

You will be asked to agree to the SAT Terms and Conditions during your registration for the SAT. 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 sat.org/terms.

SAT 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 SAT. Please read these carefully. If you register for the SAT on behalf of another (for example, if you're a parent or legal guardian of the test taker), these Terms and Conditions govern both you and the test taker (collectively,"***you***").

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 10 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.

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Section 1. *Photo Requirements for Registration for Weekend Testing*

You must provide an acceptable photo when you register or request waitlist status for the SAT in accordance with **sat.org/photo**. The photo you provide when you register will appear in your registration record.

Section 2. *Admission to the Test Site for Weekend Testing*

a. You must bring an acceptable photo ID and your printed admission ticket to be admitted to the test site in accordance with **sat.org/id-requirements**.

b. Testing staff will compare the information on your admission ticket and your photo ID, as well as your appearance with the student roster to confirm your registration and identity.

c. **Identification and Other Discrepancies.** In our sole discretion, when there's a discrepancy related to your identification and the admission ticket, or when the photo doesn't meet our requirements, or when the information on your admission ticket and photo ID doesn't match (for example, if your preferred name is on one field but your full name is on another), you may be denied admission to or be dismissed from the test site; in addition, we may decline to score your test, or cancel your score.

d. For SAT School Day testing, you may be required to show an acceptable photo ID on test day.

Section 3. *Required and Prohibited Items for Testing*

a. You **must bring** the following items to the SAT in accordance with **satsuite.collegeboard.org/sat/what-to-bring-do**:

- Printed admission ticket, which is required for entry to the test site for weekend testing
- Acceptable photo ID
- Two No. 2 pencils that have erasers
- Acceptable calculator (as set forth later in this section) for math sections where they are allowed

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- 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 SAT 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 **sat.org/calculator**. 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 test site; in addition, we may decline to score your test, or cancel your score.

Section 4. *Prohibited Behaviors*

You **may not engage** in the prohibited behaviors set forth below and located at **sat.org/test-security**:

- Attempt to cheat or otherwise obtain an unfair advantage on the SAT
- Remove or attempt to remove any test questions or responses or essay topics 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 (Note: Essays may be required in certain SAT School Day administrations.)
- At any time, improperly access the test site, 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 test site'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

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- 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
- Submit an essay (essays may be required in certain SAT School Day administrations) that does not reflect your original and individual work
- 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 in other registration information or directions given by the testing staff or rules of the test site
- Violate the Intended Use Policy located at **sat.org/test-security**.

Section 5. *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 5(b) below, or you have engaged in Misconduct under Section 5(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 5(f) below.
CAUTION! THE CONSEQUENCES OF CHEATING ON THE SAT ARE SEVERE.

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 retest option is available only for tests administered in the United States, U.S. territories, and Canada. The arbitration option is available only for tests administered in the United States and U.S. territories.

c. **Misconduct.** Notwithstanding Section 5(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 test 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 a refund or the

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opportunity to take the test again within a reasonable time frame, and without charge. These are the sole remedies 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 SAT Terms and Conditions, or any suspicion concerning the security of SAT 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 6. *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 for which you register. 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. **Scholarship Programs.** College Board automatically sends your scores and personally identifiable information to the U.S. Presidential Scholars Program for test takers in all states, the District of Columbia, U.S. territories, and Puerto Rico, and for U.S. citizens abroad. In addition, based on your mailing address or high school, this information may also be sent to state scholarship and recognition programs in various states, including, by way of example only, Alaska, Georgia, Illinois, Kentucky, Michigan, Pennsylvania, Tennessee, West Virginia, and North Dakota. This information is used by such programs to consider your eligibility for a scholarship or recognition program.

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- ***Opt-out:*** You can opt out by notifying College Board, in writing, no more than 15 days after the test date, at:

  College Board SAT Program
  Attention: Confidentiality
  P.O. Box 025505, Miami, FL 33102

  or by contacting Customer Service at **inquiry@collegeboard.org**.

d. **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.)
- When you request that we send your scores to colleges or other organizations as designated by you on your answer sheet and/or via your College Board account, we send your scores and other information you provide during testing to those colleges and organizations in accordance with **sat.org/scores**.

Section 7. *Miscellaneous*

a. If you want to voluntarily cancel your scores, your request must be received by the fourth weekday after a test administration in accordance with **sat.org/cancel-scores**. Once you submit your request to cancel scores, your scores cannot be reinstated and are not reported to you or your designated institutions (e.g., colleges).

b. International test takers may be subject to additional requirements. Those requirements are located at **sat.org/international**.

c. If you ordered the Question-and-Answer-Service (QAS) and it isn't available for your test date and testing location, you'll be notified and your fee will be refunded.

d. In certain cases, including where there is unexpected volume in a particular area or for test security or safety reasons, College Board reserves the right to move you to a different test site or to a subsequent test administration.

e. 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, College Board will notify you in advance if feasible. We will communicate test cancellations and, when feasible, alternate test dates for affected test takers.

f. To ensure the integrity of the SAT, 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.

g. If College Board becomes aware that you or someone else may be in imminent danger, including a determination based on the content of your essay, we reserve the right to contact the appropriate individuals or agencies, including your parents, guardians, high school, or law enforcement agencies. We may also provide the relevant essay or other content, along with any personal information, to those contacted. (Essays may be required in certain SAT School Day administrations.)

h. College Board or its designee may use methods to capture images, video, or audio at any or all test 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 SAT test security incidents; and (ii) enhancing SAT 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.

i. College Board occasionally pretests new questions to determine if they should be included in a future SAT. 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.

j. After the SAT, 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.

k. College Board takes steps to ensure that registration records are properly handled and processed, and that answer sheets are properly handled and scored. In the unlikely event of a problem with shipping or processing registration materials, 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 or will provide a refund of the test fee. These are your sole remedies in relation to such issues. College Board has sole discretion in determining whether to score lost answer sheets that are eventually recovered.

l. Additional information for students testing in California or New York is located at **sat.org/verify-scores**.

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m. All personal property brought into the test 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. Searches may include the use of tools, such as metal detecting wands used on individuals and personal property or other methods, that detect prohibited devices and/or their use. 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.

n. College Board and the test site will not be responsible for personal property, including prohibited items, brought to the test site on test day that becomes lost, stolen, or damaged.

a. 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 8. *Policies and Requirements*

a. All College Board policies and requirements (i) referenced in these Terms and Conditions and (ii) relating to registering for the SAT located at **sat.org/register**, what to bring and do on test day located at **satsuite.collegeboard.org/sat/what-to-bring-do**, scores located at **sat.org/scores**, and COVID-19 located at **sat.org/covid19** are part of these Terms and Conditions.

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 9. *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 including all essay responses, 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 10. *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 SAT, 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.

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- 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 10(a) above.

c. Notwithstanding the foregoing arbitration provisions in Sections 10(a) and 10(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 11. *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 10 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 12. *LIMITATIONS OF LIABILITY*

EXCEPT TO THE EXTENT FINALLY DETERMINED TO BE PROHIBITED BY LAW, THE TOTAL LIABILITY OF COLLEGE BOARD 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 13. *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.

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Section 14. *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 SAT Customer Service at 866-756-7346 (+1-212-713-7789 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 15. *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 866-756-7346 (+1-212-713-7789 internationally) or **sat.org/contact** in advance of registering or taking the SAT. 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.

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Notes

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CollegeBoard SAT®

The SAT®

Calendar 2022-23

Deadlines expire at 11:59 p.m. U.S. ET.

	2022				2023		
SAT Test Dates*	**AUG 27**	**OCT 1**	**NOV 5** (U.S. ONLY)	**DEC 3**	**MAR 11**	**MAY 6**	**JUN 3**
Domestic Registration Deadline	**July 29**	**Sep 2**	**Oct 7**	**Nov 3**	**Feb 10**	**Apr 7**	**May 4**
Domestic Late Registration Deadline	Aug 16	Sep 20	Oct 25	Nov 22	Feb 28	Apr 25	May 23
International Registration Deadline	**July 29**	**Sep 2**	*Not Available*	**Nov 3**	**Feb 10**	**Apr 7**	**May 4**

Domestic Registration: sat.org/register
Domestic Fees: sat.org/us-fees
Fee Waivers: sat.org/fee-waivers

International Registration: sat.org/international
International Fees: sat.org/intl-fees

*Sunday test dates immediately follow the Saturday test dates.
The SAT is offered internationally in August, October, December, March, May, and June.

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