# Preparing for the ACT ${ }^{\circ}$ Test 

## First \& Last Name

What's Inside<br>- Full-Length Practice ACT Test, including the Optional Writing Test<br>- Information about the Multiple-Choice and Writing Sections<br>- Test-Taking Strategies<br>- What to Expect on Test Day

Esta publicación también se puede ver o descargar en español en www.actstudent.org

## Overview of the ACT

The full ACT consists of four multiple-choice sections-in English, mathematics, reading, and science-with an optional writing section. Some colleges and universities require or accept ACT writing scores, so you may consider taking the writing section.

| Test | Questions | Minutes per Test |
| :--- | :---: | :---: |
| English | 75 | 45 |
| Mathematics | 60 | 60 |
| Reading | 40 | 35 |
| Science | 40 | 35 |
| Writing (optional) | 1 essay | 40 |
|  |  |  |
| Test Formats for ACT |  |  |
| National Testing |  |  |

The full ACT is now offered nationally in both paper and online formats. Students who have taken the full ACT at least once in 2016 or later will be able to retake individual sections during any of the National test dates through ACT Section Retesting. A section retest is an online only test option that offers a way to help you focus on individual ACT sections. Students can take up to 3 sections during one testing date and can choose in which order the sections are taken. See www.actstudent.org for more information about ACT Section Retesting.

ACT tries out questions on National test dates to develop future tests. Your test may include questions that will not count towards your score. These questions may be blended in with the questions that do not count towards your score or will be presented in a 5th test that will not be reflected on your reported scores. Please try your best on these questions. Your participation can help shape ACT's future.

With blended questions, your time will be extended to allow for the additional questions.

| Test | Questions | Minutes per Test |
| :--- | :---: | :---: |
| English | 90 | 55 |
| Mathematics | 65 | 65 |
| Reading | 50 | 45 |
| Science | 47 | 45 |
| Writing (optional) | 1 essay | 40 |

## Test Strategies for the ACT

Each multiple-choice section contains questions with either four or five answers from which you are to choose the correct, or best, answer.

The ACT measures the knowledge, understanding, and skills you have acquired throughout your years in school. Because of this, it is unlikely that a "cram" course can improve your scores. However, it is a good idea to do some test preparation to be familiar with the tests and what to expect on test day.

Here are three strategies to help you prepare for the ACT:

## $\sqrt{ }$ Get familiar with the content of the sections.

Review the information in this booklet. Note which content areas make up a large proportion of the sections. The topics included in each content area are examples of possible topics; they do not include all possibilities.

## $\checkmark$ Update your knowledge and skills in the content areas.

Review content areas that you have studied but are not fresh in your mind. Refresh your knowledge in the content areas that make up large portions of the test.

## $\checkmark$ Study content areas you are not familiar with.

If some content areas of the ACT are unfamiliar to you, consider taking coursework in those areas before you take the test.

## Test-Taking Strategies

These suggestions apply to the four multiple-choice sections.

## Pace yourself.

It is important that you have enough time to read the passages/ questions and figure out your responses. For each section, subtract the number of minutes you estimate you will spend skimming the passages or reading the information provided, then divide the total number of remaining minutes allowed by the number of questions to determine the estimated time you should spend on each question. If possible, spend less time on each question and use the remaining time allowed for a section to review your work and return to the questions in that section that were most difficult for you.

The time limits set for each section give nearly everyone enough time to finish all questions. However, you will want to pace yourself to avoid spending too much time on one passage or puzzling over an answer to a specific problem. Go on to other questions and come back if there is time.

## $\checkmark$ Read the directions carefully.

Before you begin each section, read the directions carefully.

- The English, reading, and science sections ask for the best answer. Read and consider all of the answer choices and choose the answer that best responds to the question.
- The mathematics section asks for the correct answer. You may want to work out the answer you feel is correct and look for it among the choices given. If your answer is not among the choices provided, reread the question and consider all the answer choices.


## Read each question carefully.

You need to understand exactly what each question asks. Some questions will require you to go through several steps to find the correct or best answer, while others can be answered more quickly.

## $\checkmark$ Answer the easy questions first.

A good strategy is to answer the easy questions and skip the questions you find difficult. After answering the easy questions, go back and answer the more difficult questions if you have time.

## $\checkmark$ Use logic on more difficult questions.

When you return to the more difficult questions, try to use logic to eliminate incorrect answers. Compare the answer choices to each other and note how they differ. Such differences may provide clues as to what the question requires. Eliminate as many incorrect answers as you can, then make an educated guess from the remaining answers.

## $\checkmark$ Answer every question.

Your scores in the sections will be based only on the number of questions that you answer correctly; there is no penalty for guessing. Try to answer every question within the time allowed for each section.

## $\checkmark$ Review your work.

If there is time left after you have answered every question in a section, go back and check your work. You will not be allowed to go back to any other section or mark responses to a section after time has been called in that section.

## $\checkmark$ Be precise in choosing your responses.

If you are taking the ACT on paper, be sure that you properly fill in the appropriate ovals on your answer document. Check that the number of the line of ovals on your answer document is the same as the number of the question you are answering and that you mark only one answer for each question. If you are taking the ACT online, be sure you select the intended response.

## $\checkmark$ Erase completely.

If you want to change a multiple-choice answer on paper, be sure to use a soft eraser that will erase the unintended mark completely and not leave smudges. Do not cross out answers or use correction fluid or tape; you must erase. Smudges or unintended marks may cause errors in scoring.

## Get Ready

Prepare well in advance for the ACT.

- Know what to expect on test day. Review the information in this booklet and at www.actstudent.org.
- Take the practice tests in the order they are shown in this booklet, time yourself, and review your responses using the answer keys.
- If you are taking individual sections through ACT Section Retesting, you can use the practice tests in this booklet for more preparation.
- You can practice using the online testing format used for section retesting, or for taking the full ACT online by visiting practice.actdigitalservices.org.
- Carefully review the test-day checklist at www.act.org/the-act/checklist.
- Get plenty of rest the night before the tests.

Note: Most procedures in this booklet refer to testing on a National test date at an ACT test site (within the United States, US territories, or Puerto Rico). Procedures may differ slightly if you take a different administration of the ACT test.

## On Test Day

## Report on Time

- For National test dates, you must report to your assigned test site by the time stated on your admission ticket (usually 8:00 a.m.). If you are late, you will not be admitted to test. If your ticket does not list a specific test room, the test staff or posted signs will direct you.


## Bring With You

- At check-in, you will be required to show an acceptable photo ID or you will not be admitted to test. See ACT requirements for ID on your ticket or at www.act.org/the-act/id.
- Your admission ticket is also required if you test on a National ACT test date. You will not be admitted to the test without it. It contains identifying information for both testing on paper and online formats. If you have lost your ticket, you can print another through your ACT web account.
- If testing in the United States, bring sharpened No. 2 pencils and good erasers (no mechanical pencils or ink pens). If you are testing internationally, you will be provided writing implements. Do not bring any other writing instruments. You will not be allowed to use them.
- A watch to pace yourself. Do not bring a watch with recording, internet, communication, or calculator capabilities (e.g., a smart watch or fitness band). You will be asked to remove your watch and place it face up on your desk during testing.
- A permitted calculator may be used on the mathematics section only. It is your responsibility to know whether your calculator is permitted. For the most current information on the ACT calculator policy, visit
www.act.org/calculator-policy.html or call 800.498.6481 for a recorded message.


## In the Test Room

- Test staff will direct you to a seat. If you need a left-handed desk, tell the staff as you enter.
- Do not leave the test room after you have been admitted.
- Only pencils, erasers, a permitted calculator, your watch (if brought to the test center), and your paper ticket will be allowed on your desk.
- You will be required to put all other personal belongings away.
- You may not use tobacco in any form. You may consume snacks and drinks outside the test room during break.
- Reporting time for the test will be 8:00 a.m. Testing will begin as soon as all examinees who are present at 8:00 a.m. are checked in and seated.
- Listen carefully to all directions read by the test staff.
- It is important that you follow all directions carefully.
- For the full ACT, you will normally be dismissed at about 12:35 p.m. if you take the ACT (no writing), or at about 1:35 p.m. if you take the ACT with writing.
- If you take the ACT Section Retests, dismissal time for section retesting will depend on which and how many sections you choose to take.


## For Students Approved to Test at National Test Sites With One and One-Half Time

Testing with one and one-half time is available on the multiplechoice and/or writing sections for students with diagnosed disabilities and/or limited English proficiency. This is available for the full ACT and Section Retesting.

If you are approved for one and one-half time at a National test site, you will have $50 \%$ additional time to complete each section.

The full ACT:

| Test | Questions | Minutes per Test |
| :--- | :---: | :---: |
| English | 75 | 70 |
| Mathematics | 60 | 90 |
| Reading | 40 | 55 |
| Science | 40 | 55 |
| Writing (optional) | 1 essay | 60 |

Section Retesting:

| Test | Questions | Minutes per Test |
| :--- | :---: | :---: |
| English | 90 | 85 |
| Mathematics | 65 | 100 |
| Reading | 50 | 70 |
| Science | 47 | 70 |
| Writing (optional) | 1 essay | 60 |

## After Testing

## Voiding Your Test on Test Day

If you have to leave the test site before completing all of your tests, you must decide whether or not you want your test scored and then inform the test staff of your decision. If you do not, your test will be scored.

Once you access test content, you cannot request a Test Date Change. If you do not complete all your sections and want to test again, you will have to pay the full fee for your test option again. Once you begin filling out your test, you cannot change from one test option to another.

## Testing More Than Once

If you wish to take the test again increase your scores, you may choose to take the full ACT, or, if you wish to concentrate on specific sections, you may consider ACT Section Retesting.

ACT will calculate and report a superscore for students who have taken the ACT test more than once, or who have completed a section retest, giving colleges the option to use the student's best scores from all test administrations, rather than scores from just one sitting, in their admission and scholarship decisions.

For information about superscoring, see
www.act.org/the-act/superscore.
For more information about retaking the ACT, see
www.act.org/the-act/retaking.

## Testing More Than Once In the Same Administration

You may not receive scores from more than one test taken during a scheduled National or International test date. For example, you may test on Saturday, on an authorized nonSaturday date, or on a rescheduled test date-but not on more than one of those days on a particular test date. If you are admitted and allowed to test a second time on a particular test date, we will report only the scores from the first test. The second set of scores will be canceled without refund.

## Requesting a Copy of Your Test Questions and Answers

On certain test dates, you may order (for an additional fee) a copy of the multiple-choice test questions used to determine your scores, a list of your answers, and the answer key. If you took the writing section, you will also receive a copy of the writing prompt, scoring guidelines, and the scores assigned to your essay.

This service is not available for all test dates and is available only for National testing or Special testing in the United States, US Territories, and Puerto Rico. Restrictions apply.

If you are interested in this service, check
www.act.org/the-act/tir for more detail.

## Prohibited Behavior at the Test Center

A complete list of the prohibited behaviors is provided in the Terms and Conditions located at www.act.org/the-act/terms. Please be reminded of the following:

- You may not access an electronic device such as cell phones, smart watches, and fitness bands, at any time during testing or during break. All devices must be powered off and placed out of sight from the time you are admitted to test until you leave the test center.
- You may not fill in or alter responses to any multiplechoice questions or continue to write or alter the essay after time has been called. This includes fixing stray marks or accidental keystrokes. You may not look at any section of the test outside of the designated time for that test.
- You may not give or receive assistance by any means. This includes looking at another person's test.
- You are not allowed to use highlighter pens, colored pens or pencils, notes, dictionaries, unapproved scratch paper, or other aids.
- You may not wear a watch during the administration. Watches brought into the test room must be placed face up on your work surface.
- You may not allow an alarm on a personal item to sound in the test room or create any other disturbance. If you are wearing a watch with an alarm or have any other alarm device, you must be sure it is turned off.
- The test is confidential and remains so even after the exam is complete. You may not remove any materials from the test room. You may not discuss or share test questions, answers, or test form identification numbers during test administration, during breaks, or after the test.
- You may not disclose test questions or answers in any way or at any time, including through social media, in whole or in part.
- Eating, drinking, and the use of tobacco or reading materials are not permitted in the test room.
- Your test center may also have additional procedures with which you must comply.

If you are observed or suspected of engaging in prohibited behavior, you will be dismissed and your test will not be scored.

## Content of the ACT Sections

## English Section

The English section consists of multiple essays, or passages, each followed by a set of multiple-choice questions.

- Some questions refer to underlined portions of the passage and offer several alternatives to the underlined portion. You decide which choice is most appropriate in the context of the passage.
- Some questions ask about an underlined portion, a section of the passage, or the passage as a whole. You decide which choice best answers the question posed.
- Many questions offer "NO CHANGE" to the passage as one of the choices.
The English section puts you in the position of a writer who makes decisions to revise and edit a text. Short texts and essays in different genres provide a variety of rhetorical situations. Passages are chosen for their appropriateness in assessing writing and language skills and to reflect students' interests and experiences.
Four scores are reported for the English section: a score for the section overall and three reporting category scores based on specific knowledge and skills. The approximate percentage of the section devoted to each reporting category is:


## Production of Writing (29-32\%)

This category requires you to apply your understanding of the purpose and focus of a piece of writing.

- Topic Development: Demonstrate an understanding of, and control over, the rhetorical aspects of texts. Identify the purposes of parts of texts, determine whether a text or part of a text has met its intended goal, and evaluate the relevance of material in terms of a text's focus.
- Organization, Unity, and Cohesion: Use various strategies to ensure that a text is logically organized, flows smoothly, and has an effective introduction and conclusion.


## Knowledge of Language (13-19\%)

These questions require you to demonstrate effective language use through ensuring precision and concision in word choice and maintaining consistency in style and tone.

## Conventions of Standard English (51-56\%)

These questions require you to apply an understanding of the conventions of standard English grammar, usage, and mechanics to revise and edit text.

- Sentence Structure and Formation: Apply understanding of sentence structure and formation in a text and make revisions to improve the writing.
- Punctuation: Recognize common problems with standard English punctuation and make revisions to improve the writing.
- Usage: Recognize common problems with standard English usage in a text and make revisions to improve the writing.


## Tips for Taking the English Section

## $\checkmark$ Be aware of the writing style used in each passage.

The passages cover a variety of topics and are written in a variety of styles. It is important that you take into account the writing style used in each passage. When responding to a question, be sure to understand the context of the question. Consider how the sentence containing an underlined portion fits in with the surrounding sentences and into the passage as a whole.

## $\checkmark$ Examine the underlined portions of the passage.

Before responding to a question with an underlined portion, carefully examine what is underlined in the text. Consider the elements of writing included in each underlined portion.

- Some questions will ask you to base your decision on some specific element of writing, such as the tone or emphasis the text should convey.
- Some questions will ask you to choose the alternative to the underlined portion that is NOT or LEAST acceptable.

The answer choices for each question will contain changes in one or more of those elements of writing.

## $\checkmark$ Be aware of questions with no underlined portions.

You will be asked some questions about a section of the passage or about the passage as a whole, in light of a given rhetorical situation. Questions of this type are often identified by a question number in a box located at the appropriate point in the passage.

Questions about the entire passage are placed at the end of the passage and introduced by a horizontal box enclosing the following instruction: "Questions __ and __ ask about the preceding passage as a whole."

## $\checkmark$ Note the differences in the answer choices.

Many of the questions in the section will involve more than one aspect of writing. Examine each answer choice and how it differs from the others. Be careful not to choose an answer that corrects one error but causes a different error.

## $\checkmark$ Determine the best answer.

When a question asks you to choose the best alternative to an underlined portion, consider the following approach:

- Decide how the underlined portion might best be phrased in standard written English or in terms of the particular question posed.
$\sim$ If the underlined portion is the best answer, select "NO CHANGE."
$\sim$ If not, check to see whether your phrasing is one of the other answer choices. If you do not find your phrasing, choose the best of the answers presented.
For questions cued by a number in a box, decide which choice is most appropriate in terms of the question posed or the stated rhetorical situation.

Reread the sentence, using your selected answer.
Once you have selected the answer you feel is best, reread the corresponding sentence(s) of the passage, inserting your selected answer at the appropriate place in the text to make sure it is the best answer within the context of the passage.

## Mathematics Section

The mathematics section is designed to assess the mathematical skills students have typically acquired in courses taken up to the beginning of grade 12 .

Most questions are self-contained. Some questions may belong to a set of several questions (e.g., each about the same graph or chart).

The material covered emphasizes the major content areas that are prerequisites to successful performance in entry-level courses in college mathematics. Knowledge of basic formulas and computational skills are assumed as background for the problems, but recall of complex formulas and extensive computation are not required.

Note: You may use a calculator on the mathematics section. See www.act.org/calculator-policy.html for details about prohibited models and features.

Nine scores are reported for the mathematics section: a score for the section overall and eight reporting category scores based on specific mathematical knowledge and skills. The approximate percentage of the section devoted to each reporting category is:

## Preparing for Higher Mathematics (57-60\%)

This category covers the more recent mathematics that students are learning, starting when they began using algebra as a general way of expressing and solving equations. This category is divided into five subcategories:

- Number and Quantity (7-10\%): Demonstrate knowledge of real and complex number systems. Reason with numerical quantities in many forms, including expressions with integer and rational exponents, and vectors and matrices.
- Algebra (12-15\%): Solve, graph, and model multiple types of expressions. Interpret and use many different kinds of equations, such as linear, polynomial, radical, and exponential relationships. Find solutions to systems of equations, even when represented by a simple matrix equation, and apply results to real-world contexts.
- Functions (12-15\%): Demonstrate knowledge of function: definition, notation, representation, and application. Use functions including linear, radical, piecewise, polynomial, and logarithmic. Manipulate and translate functions, as well as interpret and use important features of graphs.
- Geometry (12-15\%): Apply your knowledge of shapes and solids, using concepts such as congruence and similarity relationships or surface area and volume measurements. Apply your understanding to composite objects, and solve for missing values in triangles, circles, and other figures. Use trigonometric ratios and equations of conic sections.
- Statistics and Probability (8-12\%): Describe center and spread of distributions. Apply and analyze data collection methods. Understand and model relationships in bivariate data. Calculate probabilities by recognizing the related sample spaces.


## Integrating Essential Skills (40-43\%)

This category focuses on measuring how well you can synthesize and apply your understandings and skills to solve more complex problems. The questions ask you to address concepts such as rates and percentages; proportional relationships; area, surface area, and volume; average and median; and expressing numbers in different ways. Solve non-routine problems that involve combining skills in chains of steps; applying skills in varied contexts; understanding connections; and demonstrating fluency.

## Modeling

This category represents all questions that involve producing, interpreting, understanding, evaluating, and improving models. Each question is also counted in other appropriate reporting categories above. This category is an overall measure of how well you use modeling skills across mathematical topics.

## Tips for Taking the Mathematics Section

## $\checkmark$ If you use a calculator, use it wisely.

All of the mathematics problems can be solved without a calculator. Many of the problems are best done without a calculator. Use good judgment in deciding when, and when not, to use a calculator. For example, for some problems you may wish to do scratch work to clarify your thoughts on the question before you begin using a calculator to do computations.

## $\checkmark$ Solve the problem.

To work out solutions to the problems, you will usually do scratch work in the space provided. You may wish to glance over the answer choices after reading the questions. However, working backwards from all five answer choices can take a lot of time and may not be effective.

## $\checkmark$ Find your solution among the answer choices.

Once you have solved the problem, look for your answer among the choices. If your answer is not included among the choices, carefully reread the problem to see whether you missed important information. Pay careful attention to the question being asked. If an equation is to be selected, check to see whether the equation you think is best can be transformed into one of the answer choices provided.

## $\checkmark$ Make sure you answer the question.

The solutions to many questions will involve several steps. Make sure your answer accounts for all the necessary steps. Frequently, an answer choice is an intermediate result, not the final answer.

Make sure your answer is reasonable.
Sometimes an error in computation will result in an answer that is not practically possible for the situation described. Always think about your answer to determine whether it is reasonable.

## Check your answer.

You may arrive at an incorrect solution by making common errors in the problem-solving process. If there is time remaining before the end of the mathematics section, it is important that you reread the questions and check your answers to make sure they are correct.

## Reading Section

The reading section that measures your ability to read closely, reason logically about texts using evidence, and integrate information from multiple sources.

The section questions focus on the mutually supportive skills that readers must bring to bear in studying written materials across a range of subject areas. Specifically, questions will ask you to determine main ideas; locate and interpret significant details; understand sequences of events; make comparisons; comprehend cause-effect relationships; determine the meaning of context-dependent words, phrases, and statements; draw generalizations; analyze the author's or narrator's voice and method; analyze claims and evidence in arguments; and integrate information from multiple texts.

The reading section is composed of multiple parts. Some parts consist of one long prose passage and others consist of shorter prose passages. The passages represent the levels and kinds of text commonly encountered in first-year college curricula.

Each passage is preceded by a heading that identifies the author and source, and may include important background information to help you understand the passage. Each portion contains a set of multiple-choice questions. These questions do not test the rote recall of facts from outside the passage or rules of formal logic, nor do they contain isolated vocabulary questions. In sections that contain two shorter passages, some of the questions involve both of those passages.

Five scores are reported for the reading section: a score for the section overall and three reporting category scores based on specific knowledge and skills; and an Understanding Complex Texts indicator. The approximate percentage of the section devoted to each reporting category is:

## Key Ideas and Details (55-60\%)

This category requires you to read texts closely to determine central ideas and themes. Summarize information and ideas accurately. Understand relationships and draw logical inferences and conclusions, including understanding sequential, comparative, and cause-effect relationships.

## Craft and Structure (25-30\%)

These questions ask you to determine word and phrase meanings; analyze an author's word choice rhetorically; analyze text structure; understand the author's purpose and perspective; and analyze characters' points of view. Interpret
authorial decisions rhetorically and differentiate between various perspectives and sources of information.

## Integration of Knowledge and Ideas (13-18\%)

This category requires you to understand authors' claims, differentiate between facts and opinions, and use evidence to make connections between different texts that are related by topic. Some questions will require you to analyze how authors construct arguments, and to evaluate reasoning and evidence from various sources.

## Tips for Taking the Reading Section

## $\checkmark$ Read each passage carefully.

Before you begin answering a question, read all of the content carefully. Be conscious of relationships between or among ideas. You may take note about important ideas in the passages.

## $\checkmark$ Refer to the passages when answering the questions.

Answers to some of the questions will be found by referring to what is explicitly stated in the text of the passages. Other questions will require you to determine implicit meanings and to draw conclusions, comparisons, and generalizations. Consider the text before you answer any question.

## Science Section

The science section measures the interpretation, analysis, evaluation, reasoning, and problem-solving skills required in the natural sciences. The section presents several authentic scientific scenarios, each followed by a number of multiplechoice questions.

The content includes biology, chemistry, Earth/space sciences (e.g., geology, astronomy, and meteorology), and physics. Advanced knowledge in these areas is not required, but background knowledge acquired in general, introductory science courses may be needed to correctly answer some of the questions.
The science section focuses on multidimensional assessment, with questions that assess science content in concert with science skills and practices.

The questions require you to recognize and understand the basic features of, and concepts related to, the provided information; to examine critically the relationship between the information provided and the conclusions drawn or hypotheses developed; and to generalize from given information to gain new information, draw conclusions, or make predictions.
Note: You are not permitted to use a calculator in the science section.

The scientific information appears in one of three formats:

- Data Representation (30-40\%): This format presents graphic and tabular material similar to that found in science journals and texts. The questions associated with this format measure skills such as recognizing relationships among data in tables and graphs; interpolation and extrapolation; and translating tabular data into graphs.
- Research Summaries (45-55\%): This format provides descriptions and results of one or more related experiments. The questions focus on the design of the experiments and the interpretation of experimental results.
- Conflicting Viewpoints (15-20\%): This format presents two or more explanations for the same scientific phenomena that, because they are based on differing premises or incomplete data, are inconsistent with one another. The questions focus on the understanding, analysis, and comparison of alternative viewpoints or hypotheses.

Four scores are reported for the science section: a score for the section overall and three reporting category scores based on scientific knowledge, skills, and practices. The approximate percentage of the section devoted to each reporting category is:

## Interpretation of Data (40-50\%)

This category asks you to manipulate and analyze scientific data presented in scientific tables, graphs, and diagrams (e.g., recognize trends in data, translate tabular data into graphs, interpolate and extrapolate, and reason mathematically).

## Scientific Investigation (20-30\%)

This category requires you to understand experimental tools, procedures, and design (e.g., identify controls and variables) and compare, extend, and modify experiments (e.g., predict the results of additional trials).

## Evaluation of Models, Inferences, and Experimental Results (25-35\%)

These questions ask you to judge the validity of scientific information and formulate conclusions and predictions based on that information (e.g., determine which explanation for a scientific phenomenon is supported by new findings).

## Tips for Taking the Science Section

## $\checkmark$ Read the passage carefully.

Before you begin answering a question, read the scientific material provided. It is important that you read the entire text and examine any tables, graphs, or figures. You may take notes about important ideas. Some of the information sets will describe experiments. You should consider the experimental design, including the controls and variables, because questions are likely to address this component of scientific research.

## Note the different viewpoints in passages.

Some material will present conflicting viewpoints, and the questions will ask you to distinguish among them. It may be helpful for you to take notes summarizing each viewpoint about specific portions of the section.

## Writing Section (Optional)

If you register for the full ACT with writing, you will take the writing section after the four multiple-choice sections. You may also opt to take the writing section on its own through section retesting. Your score in the writing section will not affect your scores on the multiple-choice or your Composite score.

The writing section is a 40 -minute essay test that measures your writing skills-specifically, writing skills taught in high school English classes and in entry-level college composition courses.

The section consists of one writing prompt that describes a complex issue and provides three different perspectives on the issue. You are asked to read the prompt and write an essay in which you develop your own perspective on the issue. Your essay must analyze the relationship between your own perspective and one or more other perspectives. You may adopt one of the perspectives given in the prompt as your own, or you may introduce one that is completely different from those given. Your score will not be affected by the perspective you take on the issue.

Five scores are reported for the writing section: a single subjectlevel writing score reported on a scale of $2-12$, and four domain scores that are based on an analytic scoring rubric. The subject score is the rounded average of the four domain scores. The four writing domains are:

## Ideas and Analysis

Scores in this domain reflect the ability to generate productive ideas and engage critically with multiple perspectives on the given issue. Competent writers understand the issue they are invited to address, the purpose for writing, and the audience. They generate ideas that are relevant to the situation.

## Development and Support

Scores in this domain reflect the ability to discuss ideas, offer rationale, and bolster an argument. Competent writers explain and explore their ideas, discuss implications, and illustrate through examples. They help the reader understand their thinking about the issue.

## Organization

Scores in this domain reflect the ability to organize ideas with clarity and purpose. Organizational choices are integral to effective writing. Competent writers arrange their essay in a way that clearly shows the relationship between ideas, and they guide the reader through their discussion.

## Language Use and Conventions

Scores in this domain reflect the ability to use written language to convey arguments with clarity. Competent writers make use of the conventions of grammar, syntax, word usage, and mechanics. They are also aware of their audience and adjust the style and tone of their writing to communicate effectively.

## Tips for Taking the Writing Section <br> $\checkmark$ Pace yourself.

Budget your time based on your experience in taking essay tests in school and in other circumstances when you have done writing within a time limit. It is unlikely that you will have time to draft, revise, and recopy your essay.

## $\checkmark$ Plan.

Before writing, carefully read and consider all prompt material. Be sure you understand the issue, the different perspectives on the issue, and your essay task.

Planning questions are included with the prompt that will help you analyze the different perspectives and develop your own. Use these questions to think critically about the prompt and generate an effective response. How would you best organize and support your ideas in a written argument? Spend time structuring or outlining your response.
Note: The planning questions are optional and are not scored.

## Write.

Establish the focus of your essay by making clear your argument and its main ideas.

- Explain and illustrate your ideas with sound reasoning and meaningful examples.
- Discuss the significance of your ideas: what are the implications of what you have to say, and why is your argument important to consider?

As you write, ask yourself if your logic is clear, if you have supported your claims, and if you have chosen precise words to communicate your ideas.

## $\checkmark$ Review your essay.

Try to make your essay as polished as you can. Take a few minutes before time is called to read over your essay and correct any mistakes.
If you take the ACT on paper, be sure to write your essay legibly. If you find words that are hard to read, recopy them. Make corrections and revisions neatly, between the lines. Do not write in the margins, if applicable.

## $\checkmark$ Practice.

There are many ways to prepare for the writing section. Read newspapers and magazines, watch/listen to news analyses online, on TV, or on radio, or participate in discussions and debates, thinking carefully about other perspectives in relation to your own.

One good way to prepare for the writing section is to practice writing with different purposes for different audiences. The writing you do in your classes will help you, as will writing a personal journal, stories, essays, editorials, or other writing you do on your own.

It is also a good idea to practice writing within a time limit. Taking the practice writing test will give you a sense of how much additional practice you may need. You might want to take the practice writing section even if you do not plan to take the ACT with writing. It will help you build skills that are important in college-level learning and the world of work.

## Taking the Practice Tests

It is a good idea to take the practice tests under conditions as similar as possible to those you will experience on test day. The following tips will help you:

- If taking the full ACT, the four multiple-choice tests require 2 hours and 55 minutes to complete. Take them in order, in one sitting, with a 10 - to 15 -minute break between Tests 2 and 3.
- You will need only sharpened, soft lead No. 2 pencils and good erasers. Remove all other items from your desk. You will not be allowed to use unapproved scratch paper.
- If you plan to use a permitted calculator on the mathematics test, use the same one you will use on test day.
- Use a digital timer or clock to time yourself on each practice test. Set your timer for five minutes less than the time allowed for each test so you can get used to the verbal announcement of five minutes remaining.
- Give yourself only the time allowed for each test.
- Detach and use the sample multiple-choice answer document on pages 63-64.
- Read the test directions on the first page of each multiplechoice test. These are the same directions that will appear in your test booklet on test day.
- Start your timer and begin with Test 1. Continue through Test 4, taking a 10- to 15 -minute break between Tests 2 and 3.
- Score your multiple-choice tests using the information beginning on page 56 .
- If you plan to take the ACT with writing, read the directions on the first page of the practice ACT writing test (page 53). These are the same directions that will appear in your test booklet on test day. Start your timer, then read the prompt on page 54 . After you understand what the prompt is asking you to do, plan your essay and then write or print it on lined paper. (On test day, your answer document will have lined pages on which you will write your essay.) Score your essay using the information on pages 61-62.


## Practice Multiple-Choice Sections

## EXAMINEE STATEMENTS, CERTIFICATION, AND SIGNATURE

1. Statements: I understand that by registering for, launching, starting, or submitting answer documents for an $\mathrm{ACT}^{\circledR}$ test, I am agreeing to comply with and be bound by the Terms and Conditions: Testing Rules and Policies for the ACT ${ }^{\circledR}$ Test ("Terms").
I UNDERSTAND AND AGREE THAT THE TERMS PERMIT ACT TO CANCEL MY SCORES IF THERE IS REASON TO BELIEVE THEY ARE INVALID. THE TERMS ALSO LIMIT DAMAGES AVAILABLE TO ME AND REQUIRE ARBITRATION. BY AGREEING TO ARBITRATION, I WAIVE MY RIGHT TO HAVE DISPUTES HEARD BY A JUDGE OR JURY.
I understand that ACT owns the test questions and responses, and I will not share them with anyone by any form of communication before, during, or after the test administration. I understand that taking the test for someone else may violate the law and subject me to legal penalties. I consent to the collection and processing of personally identifying information I provide, and its subsequent use and disclosure, as described in the ACT Privacy Policy (www.act.org/privacy.html). I also permit ACT to transfer my personally identifying information to the United States, to ACT, or to a third-party service provider, where it will be subject to use and disclosure under the laws of the United States, including being accessible to law enforcement or national security authorities.
2. Certification: Copy the italicized certification below, then sign, date, and print your name in the spaces provided.
I agree to the Statements above and certify that I am the person whose information appears on this form.


## Directions

This booklet contains tests in English, mathematics, reading, and science. These tests measure skills and abilities highly related to high school course work and success in college. Calculators may be used on the mathematics test only.

The questions in Tests 1-4 are numbered, and the suggested answers for each question are lettered. On the answer document, the rows of ovals are numbered to match the questions, and the ovals in each row are lettered to correspond to the suggested answers.

For each question, first decide which answer is best. Next, locate on the answer document the row of ovals numbered the same as the question. Then, locate the oval in that row lettered the same as your answer. Finally, fill in the oval completely. Use a soft lead pencil and make your marks heavy and black. Do not use ink or a mechanical pencil.

Mark only one answer to each question. If you change your mind about an answer, erase your first mark thoroughly before marking your new answer. For each question, make certain that you mark in the row of ovals with the same number as the question.

Only responses marked on your answer document will be scored. Your score on each test will be based only on the number of questions you answer correctly during the time allowed for that test. You will not be penalized for guessing. It is to your advantage to answer every question even if you must guess.

You may work on each test only when the testing staff tells you to do so. If you finish a test before time is called for that test, you should use the time remaining to reconsider questions you are uncertain about in that test. You may not look back to a test on which time has already been called, and you may not go ahead to another test. To do so will disqualify you from the examination.

Lay your pencil down immediately when time is called at the end of each test. You may not for any reason fill in or alter ovals for a test after time is called for that test. To do so will disqualify you from the examination.

For Test 5, follow the directions on the first page of that test.

Do not fold or tear the pages of your test booklet.

## DO NOT OPEN THIS BOOKLET UNTIL TOLD TO DO SO.

[^0]
## MATHEMATICS TEST

60 Minutes-60 Questions

DIRECTIONS: Solve each problem, choose the correct answer, and then fill in the corresponding oval on your answer document.

Do not linger over problems that take too much time. Solve as many as you can; then return to the others in the time you have left for this test.
You are permitted to use a calculator on this test. You may use your calculator for any problems you choose,
but some of the problems may best be done without using a calculator.
Note: Unless otherwise stated, all of the following should be assumed.

1. Illustrative figures are NOT necessarily drawn to scale.
2. Geometric figures lie in a plane.
3. The word line indicates a straight line.
4. The word average indicates arithmetic mean.
5. Marcus's favorite casserole recipe requires 3 eggs and makes 6 servings. Marcus will modify the recipe by using 5 eggs and increasing all other ingredients in the recipe proportionally. What is the total number of servings the modified recipe will make?
A. 6
B. 8
C. 10
D. 12
E. 15
6. The 35 -member History Club is meeting to choose a student government representative. The members decide that the representative, who will be chosen at random, CANNOT be any of the 3 officers of the club. What is the probability that Hiroko, who is a member of the club but NOT an officer, will be chosen?
F. 0
G. $\frac{4}{35}$
H. $\frac{1}{35}$
J. $\frac{1}{3}$
K. $\frac{1}{32}$
7. For what value of $x$ is the equation $2^{2 x+7}=2^{15}$ true ?
A. 2
B. 4
C. 11
D. 16
E. 44
8. Let the function $f$ be defined as $f(x)=5 x^{2}-7(4 x+3)$. What is the value of $f(3)$ ?
F. -18
G. -26
H. -33
J. -60
K. -75
9. A wallet containing 5 five-dollar bills, 7 ten-dollar bills, and 8 twenty-dollar bills is found and returned to its owner. The wallet's owner will reward the finder with 1 bill drawn randomly from the wallet. What is the probability that the bill drawn will be a twentydollar bill?
A. $\frac{1}{20}$
B. $\frac{4}{51}$
C. $\frac{1}{8}$
D. $\frac{2}{5}$
E. $\frac{2}{3}$
10. The ABC Book Club charges a $\$ 40$ monthly fee, plus $\$ 2$ per book read in that month. The Easy Book Club charges a $\$ 35$ monthly fee, plus $\$ 3$ per book read in that month. For each club, how many books must be read in 1 month for the total charges from each club to be equal?
F. 1
G. 4
H. 5
J. 6
K. 75
11. In parallelogram $A B C D$ below, $\overline{A C}$ is a diagonal, the measure of $\angle A B C$ is $40^{\circ}$, and the measure of $\angle A C D$ is $57^{\circ}$. What is the measure of $\angle C A D$ ?
A. $40^{\circ}$
B. $57^{\circ}$
C. $77^{\circ}$
D. $83^{\circ}$
E. $97^{\circ}$

12. When $x=\frac{1}{2}$, what is the value of $\frac{8 x-3}{x}$ ?
F. $\frac{1}{2}$
G. 2
H. $\frac{5}{2}$
J. 5
K. 10
13. In the standard $(x, y)$ coordinate plane, what is the midpoint of the line segment that has endpoints $(3,8)$ and $(1,-4)$ ?
A. $(-2,-12)$
B. $(-1,-6)$
C. $\left(\frac{11}{2},-\frac{3}{2}\right)$
D. $(2,2)$
E. $(4,-12)$
14. The fluctuation of water depth at a pier is shown in the figure below. One of the following values gives the positive difference, in feet, between the greatest water depth and the least water depth shown in this graph. Which value is it?

number of hours after 6 a.m.
F. 3
G. 6
H. 9
J. 12
K. 19
15. What is the slope of the line through $(-2,1)$ and $(2,-5)$ in the standard $(x, y)$ coordinate plane?
A. $\frac{3}{2}$
B. 1
C. -1
D. $-\frac{3}{2}$
E. -4
16. In Cherokee County, the fine for speeding is $\$ 17$ for each mile per hour the driver is traveling over the posted speed limit. In Cherokee County, Kirk was fined $\$ 221$ for speeding on a road with a posted speed limit of 30 mph . Kirk was fined for traveling at what speed, in miles per hour?
F. 13
G. 17
H. 43
J. 47
K. 60
17. What is the sum of the solutions of the 2 equations below?

$$
\begin{array}{r}
8 x=12 \\
2 y+10=22
\end{array}
$$

A. $2 \frac{2}{5}$
B. $7 \frac{1}{2}$
C. 9
D. 10
E. $17 \frac{1}{2}$
14. The average of 5 distinct scores has the same value as the median of the 5 scores. The sum of the 5 scores is 420. What is the sum of the 4 scores that are NOT the median?
F. 315
G. 320
H. 336
J. 350
K. 360
15. What is the value of the expression below?

$$
||-8+4|-|3-9||
$$

A. -18
B. -2
C. 0
D. 2
E. 18
16. Which of the following expressions is equivalent to $x^{\frac{2}{3}}$ ?
F. $\frac{x^{2}}{3}$
G. $\frac{x(2)}{3}$
H. $\sqrt{x^{3}}$
J. $\sqrt[3]{x}$
K. $\sqrt[3]{x^{2}}$

## SCIENCE TEST

35 Minutes-40 Questions
DIRECTIONS: There are several passages in this test. Each passage is followed by several questions. After reading a passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passages as often as necessary.

You are NOT permitted to use a calculator on this test.

## Passage I

A study was conducted to examine whether female Blattella germanica (a species of cockroach) prefer to eat cat food, cheese, ham, or peanuts. First, 200 mg of each of the 4 foods was separately placed into a single box. Then, adult female B. germanica were added to the box. Figure 1 shows how the mass, in mg , of each food in the box changed over time after the addition of the B. germanica. Table 1 shows the percent by mass of carbohydrates, lipids, proteins, and water, respectively, present in each of the 4 foods tested in the study.


Figure 1
Figure adapted from Prachumporn Lauprasert et al., "Food Preference and Feeding Behavior of the German Cockroach, Blattella germanica (Linnaeus)." ©2006 by the Faculty of Science, Chulalongkorn University.

| Table 1 |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: |
| Food | Percent by mass |  |  |  |
|  | carbohydrates | lipids | proteins | water |
|  | 1.2 | 6.0 | 16.9 | 66.2 |
| Cheese | 0.5 | 27.7 | 20.8 | 48.4 |
| Ham | 0.0 | 18.2 | 23.6 | 57.1 |
| Peanuts | 15.8 | 49.6 | 26.2 | 6.4 |

Table adapted from U.S. Department of Agriculture, USDA National Nutrient Database for Standard Reference, Release 24. 2011.

1. According to Figure 1, the mass of cheese remaining at 4 hr was closest to which of the following values?
A. 140 mg
B. 176 mg
C. 185 mg
D. 190 mg
2. Suppose a company wants to use food as bait in a trap designed to capture female B. germanica. Based on Figure 1, which of the 4 foods should the company place in the trap to maximize the chance of capturing female B. germanica?
F. Cat food
G. Cheese
H. Ham
J. Peanuts
3. Consider the 4 foods in order of the percent by mass of proteins, from lowest to highest. From food to food, as the percent by mass of proteins increased, the mass of food remaining at 28 hr :
A. increased only.
B. decreased only.
C. increased and then decreased.
D. decreased and then increased.
4. Consider the statement "The B. germanica ate the food between 0 hr and 4 hr , between 4 hr and 16 hr , between 16 hr and 24 hr , and between 24 hr and 28 hr ." This statement is consistent with the data in Figure 1 for how many of the 4 foods?
F. 1
G. 2
H. 3
J. 4
5. A student predicted that the B. germanica would eat less cat food than ham by the end of the study. Do the data in Figure 1 support this prediction?
A. Yes; at 28 hr , the mass of cat food remaining was about 55 mg greater than the mass of ham remaining.
B. Yes; at 28 hr , the mass of cat food remaining was about 95 mg greater than the mass of ham remaining.
C. No; at 28 hr , the mass of cat food remaining was about 55 mg less than the mass of ham remaining.
D. No; at 28 hr , the mass of cat food remaining was about 95 mg less than the mass of ham remaining.
6. Based on Table 1, when 200 mg of each of the 4 foods was placed in the box, water accounted for more than 100 mg of the mass of which food(s)?
F. Peanuts only
G. Cat food and ham only
H. Cheese and peanuts only
J. Cat food, cheese, and ham only

Answer 5:

Answer 6

## Passage II

A teacher provided the table below to the students in a science class. The table gives 5 properties for each of Samples $\mathrm{A}-\mathrm{H}$. The students were told to assume that each sample is a completely solid cube composed of a single hypothetical pure substance.

| Sample | Mass <br> $(\mathrm{g})$ | Volume <br> $\left(\mathrm{cm}^{3}\right)$ | Density <br> $\left(\mathrm{g} / \mathrm{cm}^{3}\right)$ | Melting <br> point <br> $\left({ }^{\circ} \mathrm{C}\right)$ | Boiling <br> point <br> $\left({ }^{\circ} \mathrm{C}\right)$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| A | 8.0 | 4.0 | 2.0 | 126 | 747 |
| B | 8.0 | 4.0 | 2.0 | 342 | 959 |
| C | 6.0 | 3.0 | 2.0 | 237 | 885 |
| D | 6.0 | 3.0 | 2.0 | 237 | 885 |
| E | 8.0 | 2.0 | 4.0 | 126 | 747 |
| F | 8.0 | 2.0 | 4.0 | 126 | 747 |
| G | 4.0 | 1.0 | 4.0 | 126 | 747 |
| H | 4.0 | 1.0 | 4.0 | 342 | 959 |

Note: Assume that mass, volume, and density were determined at $20^{\circ} \mathrm{C}$ and that all 5 properties were determined at 1 atmosphere (atm) of pressure.

The teacher asked each of 4 students to explain how these data could be used to predict which samples are composed of the same substance.

## Student 1

If 2 samples have the same values for all 5 properties, they are composed of the same substance. If 2 samples have different values for any of the 5 properties, they are composed of different substances.

## Student 2

If 2 samples have the same values for any 3 or more of the 5 properties, they are composed of the same substance. If 2 samples have the same values for fewer than 3 of the 5 properties, they are composed of different substances.

## Student 3

If 2 samples have the same mass, volume, and density, they are composed of the same substance. If 2 samples have different values for any of these 3 properties, they are composed of different substances. Neither melting point nor boiling point, by itself, can distinguish between substances.

## Student 4

If 2 samples have the same density, melting point, and boiling point, they are composed of the same substance. If 2 samples have different values for any of these 3 properties, they are composed of different substances. Neither mass nor volume, by itself, can distinguish between substances.
7. Based on Student 1's explanation, the same substance composes both of the samples in which of the following pairs?
A. Samples A and B
B. Samples B and C
C. Samples C and D
D. Samples D and E
8. Based on Student 3's explanation, the same substance composes both of the samples in which of the following pairs?
F. Samples A and C
G. Samples B and E
H. Samples F and G
J. Samples G and H
9. Suppose that the temperature of Sample A is increased to $250^{\circ} \mathrm{C}$ at 1 atm of pressure. At $250^{\circ} \mathrm{C}$, would Sample A be a solid or a liquid?
A. Solid, because the melting point of Sample A is $126^{\circ} \mathrm{C}$.
B. Solid, because the melting point of Sample A is $747^{\circ} \mathrm{C}$.
C. Liquid, because the melting point of Sample A is $126^{\circ} \mathrm{C}$.
D. Liquid, because the melting point of Sample A is $747^{\circ} \mathrm{C}$.
10. Consider the claim that 2 samples having the same density will always be composed of the same substance, regardless of the values of the other 4 properties. Which of the students, if any, would be likely to agree with this claim?
F. Students 1 and 2 only
G. Students 2, 3, and 4 only
H. All of the students
J. None of the students



Combine the totals of these columns and put in the blank for PHM in the box below.

```
*Reporting Categories
PHM = Preparing for Higher Math
    \(\mathrm{N}=\) Number \& Quantity
    A = Algebra
    F = Functions
    G = Geometry
    S = Statistics \& Probability
IES = Integrating Essential Skills
MDL = Modeling
```

| Number Correct (Raw Score) for: |  |
| :---: | :---: |
| Preparing for Higher Math (PHM) <br> $(\mathrm{N}+\mathrm{A}+\mathrm{F}+\mathrm{G}+\mathrm{S})$ |  |
| Integrating Essential Skills (IES) | $(35)$ |
| Total Number Correct for Mathematics Test <br> (PHM + IES) | $(60)$ |
| Modeling (MDL) <br> $\quad$ (Not included in total number correct for <br> mathematics test raw score) | $(28)$ |


| Key | Reporting Category* |  |  |
| :---: | :---: | :---: | :---: |
|  | KID | CS | IKI |
| 1. A <br> 2. $G$ <br> 3. A <br> 4. J <br> 5. C <br> 6. G <br> 7. D <br> 8. H <br> 9. C <br> 10. F <br> 11. D <br> 12. G <br> 13. D <br> 14. J <br> 15. A <br> 16. G <br> 17. B <br> 18. H <br> 19. A <br> 20. H | $\qquad$ |  | -_ |

*Reporting Categories
KID = Key Ideas \& Details
CS = Craft \& Structure
$\mathbf{I K I}=$ Integration of Knowledge \& Ideas

| Number Correct (Raw Score) for: |  |
| :---: | :---: |
| Key Ideas \& Details (KID) |  |
|  | (25) |
| Craft \& Structure (CS) |  |
|  | (11) |
| Integration of Knowledge \& Ideas (IKI) |  |
|  | (4) |
| Total Number Correct for Reading Test (KID + CS + IKI) | (40) |

Test 4: Science—Scoring Key
1874FPRE

| Key | Reporting Category* |  |  |
| :---: | :---: | :---: | :---: |
|  | IOD | SIN | EMI |
| 1. C | - |  |  |
| 3. B |  |  |  |
| 4. J |  |  |  |
| 5. A |  |  |  |
| 6. G |  |  |  |
| 7. C |  |  | - |
| 8. J |  |  | - |
| 9. C |  | - |  |
| 10. J |  |  | - |
| 11. A |  |  | - |
| 12. F |  |  |  |
| 13. A | - |  |  |
| 14. H | - |  |  |
| 15. B |  |  |  |
| 16. J |  | - |  |
| 17. A |  |  |  |
| 18. H |  |  |  |
| 19. A | -_ |  |  |
| 20. G |  |  |  |

*Reporting Categories
IOD = Interpretation of Data
SIN = Scientific Investigation
EMI = Evaluation of Models, Inferences \& Experimental Results

| Number Correct (Raw Score) for: |  |
| :--- | :---: |
| Interpretation of Data (IOD) |  |
| Scientific Investigation (SIN) |  |
|  <br> Experimental Results (EMI) <br> Total Number Correct for Science Test <br> $($ IOD + SIN + EMI) |  |

## TABLE 1

Explanation of Procedures Used to Obtain Scale Scores from Raw Scores

On each of the four multiple-choice tests on which you marked any responses, the total number of correct responses yields a raw score. Use the table below to convert your raw scores to scale scores. For each test, locate and circle your raw score or the range of raw scores that includes it in the table below. Then, read across to either outside column of the table and circle the scale score that corresponds to that raw score. As you determine your scale scores, enter them in the blanks provided on the right. The highest possible scale score for each test is 36 . The lowest possible scale score for any test on which you marked any responses is 1 .

Next, compute the Composite score by averaging the four scale scores. To do this, add your four scale scores and divide the sum by 4 . If the resulting number ends in a fraction, round it to the nearest whole number. (Round down any fraction less than one-half; round up any fraction that is one-half or more.) Enter this number in the blank. This is your Composite score. The highest possible Composite score is 36. The lowest possible Composite score is 1 .

ACT Test 1874FPRE $\quad$ Your Scale Score
English
Mathematics
Reading $\qquad$
Science $\qquad$

Sum of scores
Composite score (sum $\div 4$ )

NOTE: If you left a test completely blank and marked no items, do not list a scale score for that test. If any test was completely blank, do not calculate a Composite score.

To calculate your writing score, use the rubric on pages 61-62.

| Scale Score | Raw Scores |  |  |  | Scale Score |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Test 1 English | Test 2 Mathematics | Test 3 Reading | Test 4 Science |  |
| 36 | 74-75 | 59-60 | 40 | 40 | 36 |
| 35 | 71-73 | 57-58 | 38-39 | - | 35 |
| 34 | 70 | 55-56 | 37 | 39 | 34 |
| 33 | 69 | 54 | 36 | 38 | 33 |
| 32 | 68 | 53 | 34-35 | - | 32 |
| 31 | 67 | 51-52 | 33 | 37 | 31 |
| 30 | 66 | 49-50 | 32 | 36 | 30 |
| 29 | 64-65 | 47-48 | 31 | - | 29 |
| 28 | 63 | 45-46 | 30 | 35 | 28 |
| 27 | 61-62 | 42-44 | - | 34 | 27 |
| 26 | 59-60 | 39-41 | 29 | 32-33 | 26 |
| 25 | 56-58 | 37-38 | 28 | 31 | 25 |
| 24 | 53-55 | 34-36 | 26-27 | 29-30 | 24 |
| 23 | 50-52 | 32-33 | 25 | 26-28 | 23 |
| 22 | 47-49 | 31 | 23-24 | 24-25 | 22 |
| 21 | 44-46 | 29-30 | 22 | 22-23 | 21 |
| 20 | 41-43 | 27-28 | 20-21 | 20-21 | 20 |
| 19 | 39-40 | 25-26 | 19 | 18-19 | 19 |
| 18 | 37-38 | 22-24 | 18 | 17 | 18 |
| 17 | 35-36 | 19-21 | 16-17 | 15-16 | 17 |
| 16 | 32-34 | 16-18 | 15 | 14 | 16 |
| 15 | 29-31 | 13-15 | 14 | 13 | 15 |
| 14 | 26-28 | 10-12 | 12-13 | 11-12 | 14 |
| 13 | 24-25 | 8-9 | 11 | 10 | 13 |
| 12 | 22-23 | 7 | 10 | 9 | 12 |
| 11 | 19-21 | 5-6 | 8-9 | 8 | 11 |
| 10 | 16-18 | 4 | 7 | 7 | 10 |
| 9 | 13-15 | - | 6 | 6 | 9 |
| 8 | 11-12 | 3 | 5 | 5 | 8 |
| 7 | 9-10 | - | - | 4 | 7 |
| 6 | 7-8 | 2 | 4 | 3 | 6 |
| 5 | 6 | - | 3 | - | 5 |
| 4 | 4-5 | 1 | 2 | 2 | 4 |
| 3 | 3 | - | - | 1 | 3 |
| 2 | 2 | - | 1 | - | 2 |
| 1 | 0-1 | 0 | 0 | 0 | 1 |


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