

TAKE ACTION ON

THE ACT

2022-2023

Your ultimate guide to study tips, test-taking strategies, and practice questions.

**WHAT'S
NEXT4U?
COLLEGE! GET2IT.**

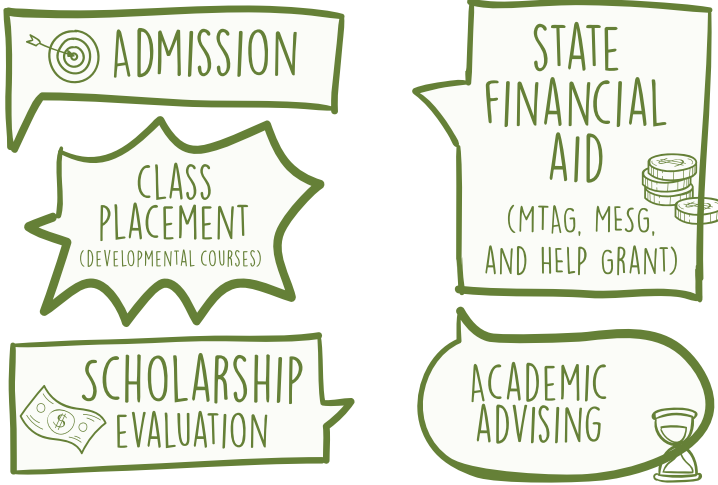
Additional practice problems at actstudent.org

get2college
WOODWARD HINES EDUCATION FOUNDATION

ABOUT THE ACT

All eleventh graders in Mississippi are required to take the ACT test. Most colleges and universities use ACT scores as a part of the admission process.

Your results provide one way to measure your potential for:



Prepare for the ACT with Get2College

Find helpful tips and tricks for the ACT in short 1-minute videos on our Youtube channel at:

bit.ly/g2cyoutube

ACT Fees*

ACT, no writing	\$63.00
ACT, plus writing	\$88.00
Late Fee	\$36.00
Standby Testing	\$63.00

ACT for Free

Four fee waivers are offered to help lower-income students pay for the ACT. Ask your high school counselor if you qualify!

ACT TEST DATES	REGISTRATION DEADLINE	LATE FEE REQUIRED	GET2COLLEGE WORKSHOPS
Sept 10, 2022	Aug 5	Aug 19	Aug 27 @ 9 a.m.
Oct 22, 2022	Sept 16	Sept 30	Oct 15 @ 9 a.m.
Dec 10, 2022	Nov 4	Nov 11	Dec 3 @ 9 a.m.
Feb 11, 2023	Jan 6	Jan 20	Feb 4 @ 9 a.m.
April 15, 2023	March 10	March 24	March 25 @ 9 a.m.
June 10, 2023	May 5	May 19	June 5 @ 9 a.m.
July 15, 2023	June 16	June 23	n/a

*ACT prices and fees are subject to change. See act.org for more details.

NEED MORE TEST PREP HELP?

Request a Test Information Release to receive a copy of your test questions and answers.

December, April, and June test dates only. Test Information Release is \$30.00 each test.

“ THE ACT IS **NOT AN IQ TEST!** ”

WHAT ARE THE BENEFITS OF SUPERSCORE?

Superscoring is the process of averaging your four best subject scores from all of your ACT test attempts. Your Superscore combines your best performances into one score that best reflects your abilities and, ultimately, allows you to put your best foot forward.

HOW ARE ACT SUPERSCORE USED?

Some colleges and universities in Mississippi will use the new ACT Superscore for college admission and scholarships. In addition, the Mississippi Office of Student Financial Aid (MOSFA) will accept the ACT Superscore.

WHO GETS THE ACT SUPERSCORE INFORMATION?

ACT provides an automatically calculated ACT Superscore to all students who have taken the ACT more than once from September 2016 to the current day. ACT will automatically send your scores to the places requested when you registered for the test. Make sure to include the Mississippi Office of Student Financial aid (code: 2431). If you need to send the Superscore after the test date just log in to MyACT to view and send scores. Sending a Superscore report is \$16 per test date per report.

Example College #1: 4-YEAR ACT SCHOLARSHIP									
ACT SCORE	25	26	27	28	29	30	31	32	33+
SCHOLARSHIP	\$1,500	\$1,900	\$2,250	\$3,000	\$3,500	\$4,500	\$5,500	\$7,500	\$8,190

Example College #2: 4-YEAR ACT SCHOLARSHIP			
ACT SCORE	22-24	25-26	27+
SCHOLARSHIP	Tuition	Tuition, room, and board	Tuition, room, board, fees, and books

Example College #3: 2-YEAR ACT SCHOLARSHIP			
ACT SCORE	22-24	25-27	28+
SCHOLARSHIP	Half Tuition	Full Tuition	Tuition, room, board, and books

WHAT IS THE FORMAT OF THE ACT?

The ACT is divided into four sections and will take roughly three hours and 15 minutes. Each section is formatted the same way every time the ACT is offered. The ACT is also always ordered the same way: English, Math, Reading, then Science, followed by the optional 40-minute writing section.

Section	# of Questions	Time (min)	Content
English	75	45	Grammar, usage, mechanics, and rhetorical skills
Mathematics	60	60	Pre-algebra, elementary algebra, intermediate algebra, coordinate geometry, geometry, and elementary trigonometry
Reading	40	35	Reading comprehension
Science	40	35	Interpretation, data analysis, evaluation, reasoning, and problem-solving
Optional Writing	1 essay prompt	40	Writing - some schools require the Writing Test - check out: actapps.act.org/writPrefRM



IS THE ACT AN IQ TEST?

The ACT is NOT an IQ test! If this is how you've been approaching the ACT: "I'll just wake up on Saturday, take the test, and do the best I can," you are not giving yourself your best shot.

Questions on the ACT are directly related to what students have learned in high school courses. There are advantages to beginning testing in your junior year.

- You've probably completed the coursework corresponding to the test material.
- Colleges will receive your scores and may begin recruiting you.
- You'll have the opportunity to practice and retest if you feel your scores don't accurately reflect your abilities in the areas tested.

WRITING SECTION (OPTIONAL)

As of March 2022, only six colleges and universities require the ACT writing section. None of the colleges and universities in Mississippi require the writing section.

If you do take the writing section, state your position clearly. The ACT prefers direct, concise writing, so limit unnecessary prose.



I KEEP GETTING THE SAME SCORE.

1. Interpret score report
2. Order Test Information Release (TIR)
3. Study the content for the types of questions that you miss most frequently



MISSISSIPPI COLLEGES

DO NOT require the writing section of the ACT.



HOW IS THE ACT SCORED?

The questions you answer correctly in each section will be counted. No points are deducted for incorrect answers. Then, your raw score will be converted into a scaled score (1-36). The following table outlines one example of how ACT converts raw scores into scaled scores. This is a sample chart. Each test will vary slightly regarding the number of questions answered correctly and the scaled score that you will receive.

Scaled Score	English	Math	Reading	Science
36	72-75	58-60	39-40	38-40
35	70-71	56-57	38	37
34	68-69	54-55	37	36
33	67	53	35-36	35
32	66	51-52	34	34
31	65	49-50	33	-
30	64	48	-	33

MESG Mississippi Eminent Scholars Grant Up to \$10,000	29	62-63	46-47	32	32
	28	61	44-45	31	31
	27	60	41-43	30	-
	26	58-59	39-40	29	30
	25	56-57	37-38	28	28-29
	24	53-55	35-36	27	26-27
	23	51-52	33-34	26	25
	22	48-50	31-32	24-25	23-24
	21	45-47	30	23	22
	HELP Higher Education Legislative Plan FULL TUITION for 4 years at public institutions in MS	20	42-44	28-29	21-22
19		40-41	26-27	20	19
18		38-39	24-25	19	17-18
17		36-37	21-23	17-18	15-16
16		33-35	17-20	16	13-14
MTAG Mississippi Tuition Assistance Grant Up to \$3,000	15	30-32	13-16	14-15	12
	14	27-29	10-12	12-13	11
	13	25-26	8-9	11	10
	12	23-24	6-7	9-10	9
	11	19-22	5	7-8	8
	10	16-18	4	6	7
	9	13-15	-	5	6
	8	11-12	3	-	5
	7	9-10	-	4	4
	6	7-8	2	3	3
5	6	-	-	-	

“ FOCUS ON HOW MANY QUESTIONS YOU NEED TO GET CORRECT IN EACH SECTION IN ORDER TO ACHIEVE YOUR TARGET COMPOSITE SCORE! ”

GENERAL TEST-TAKING TIPS

HOW TO THINK ABOUT THE ACT



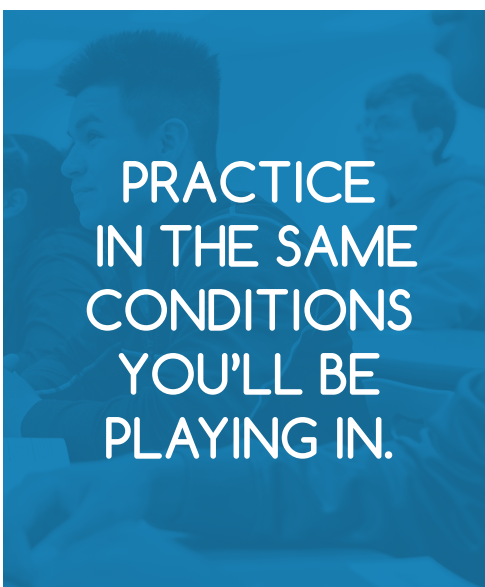
In order to do the best you can, you need to work on four main areas: content, endurance, testing strategies, and time management. If you don't know basic math content, strategies and endurance are not going to matter much. Build your endurance so that you can sit comfortably taking a test for 3+ hours. Know the strategies well enough to use them during the test without having to think about them too much. Finally, pace yourself to make sure that you can complete the entire test.

$$\text{CONTENT KNOWLEDGE} + \text{STRATEGIES} + \text{ENDURANCE} + \frac{\text{ACCURACY}}{\text{SPEED}}$$

= HIGH ACT SCORE

These skills can be developed, but developing them means that practice is necessary!

Think of the ACT as a basketball game. It would be absurd for a basketball team to play a game without practicing for it. Usually, teams practice for several weeks before their first game, even if it is a game against an inferior team. For big games, the practice sessions are more frequent and more intense. So before you take the ACT, you need to practice ACT strategy fundamentals!



How much should you study prior to the test?

That depends. Some professionals recommend practicing almost every day for several weeks before the test, while others recommend taking a certain number of practice tests. In the end, it is up to you. These two things are clear:

1. Be consistent with your studying and make sure to take practice exams. Then take time analyzing what you missed and why. Visit get2college.org/act-prep to view practice tests!
2. Cramming for the ACT won't work!
3. Commit to studying for the ACT 15-20 minutes every day. For example, you can work ten math questions or complete one English passage.

IMPORTANT SMALL THINGS

The ACT is a long test, which requires stamina on your part. It is important for you to have a game plan.



- **Make sure you are well rested before you take the test.** Most students need more than eight hours of sleep per night in order to be well rested. Several nights prior to your test, make sure you are sleeping well and long enough.
- **Eat a good, well-balanced breakfast.** Give your body some time to digest breakfast before the test. However, make sure your breakfast is filling enough to keep you from being hungry during the test. Also, eat a good snack during your break.
- **Have a stress management plan.** Manage your stress during the test by taking deep breaths often, stretching when needed, and sitting up straight. Do what you need to do in order to remain calm.
- **Don't psych yourself out during the test!** For example, if you have answered "B" four times in a row and you are tempted to do so again, don't think to yourself, "Well, I've answered B four times in a row. This next answer can't be B." It very well might be B.
- **Stay active during the test.** Use the process of elimination, write, underline, circle, and draw on the test. This physical interaction will keep you engaged! Also, be sure not to lay your head down after you finish a section.

PROCESS OF ELIMINATION (POE)

Every multiple choice question on the ACT has three wrong answers and only one correct answer, except for math questions which have four wrong answers and only one correct answer. By looking for the wrong answers instead of the correct ones, you will often be left with just a few answer choices from which you can make an educated guess. If you can narrow down your choices to two answers by Process of Elimination (POE), you have a 50/50 chance at guessing the right one, even if you don't know what the right answer actually is. You won't know the correct answer on every question, so use your POE skills to make educated guesses.

“
THERE IS NO
GUESSING
PENALTY ON
THE ACT.

This means that you should
fill in an answer on all 215
questions on the ACT

”



GUESSING BLINDLY

There are a few questions in each section that many students have absolutely no clue how to solve. When this happens, you want to make sure to make a guess. You have a $\frac{1}{4}$ or $\frac{1}{5}$ chance of getting the question right. But, don't just guess in a random way! Pick a spot of the day. It doesn't matter which spot you pick — the second spot (B or G), the third spot (C or H), etc. It does matter whether you pick the same spot when you have no idea how to eliminate any of the answers. Picking the same spot each time maximizes your chances of getting some of those questions right.

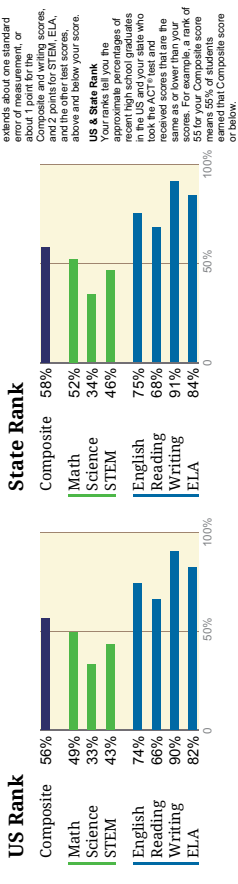
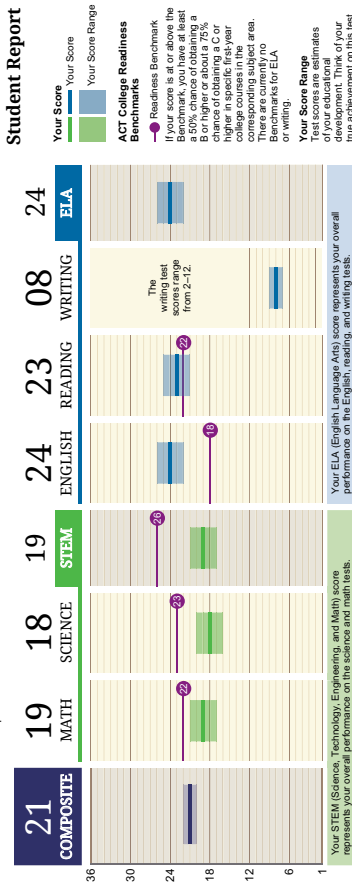
ORDER OF DIFFICULTY

Manage your time effectively. Determining the order of difficulty on each section helps you. The proctor will not check to make sure you are answering the questions in numerical order, so it is better to skip around and answer the questions from easiest to hardest. Managing your time is difficult. Being able to identify easy, medium, and hard questions helps you to use your time better. It also helps you concentrate on the questions you are likely to answer correctly.

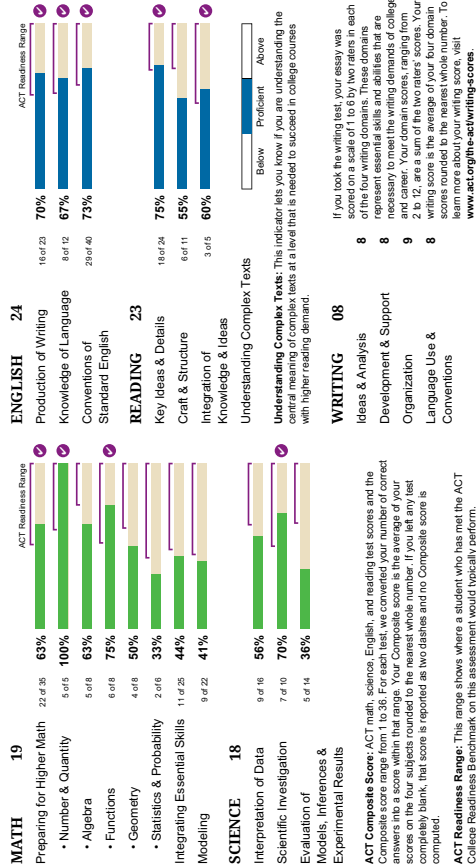
TIME MANAGEMENT

Most students can't do well on the ACT without managing their time properly. You are not allowed to use cell phones during the test, and testing centers might not be well equipped with clocks or timers, so you should wear a watch during the test. It needs to be one that doesn't make any noise. Ideally, you should wear a watch with a stopwatch (no sound) function that allows you to set the timer for each section of the test.





Detailed Results



Sending Your Scores

A score report (including your photo) was automatically sent to the high school you reported when registration was completed for the test. Your school will use this information for counseling, evaluating the effectiveness of instruction, and planning changes and improvements in the curriculum.

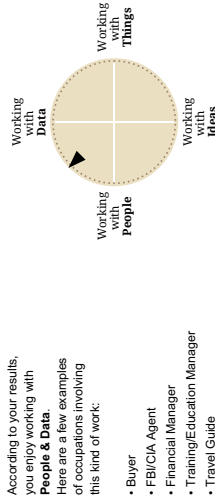
At your direction, your scores from this test date are also being reported to the colleges shown. (Be aware that when you send a report to a college that is part of a school system, the college may share your score with other colleges in that system.) Institutions use your test scores along with high school grades, academic preparation, out-of-class accomplishments, future plans, and other factors to help identify applicants who can benefit most from their programs. In addition, colleges can use results on the ACT to assist scholarship/loan agencies in identifying qualified candidates, place students in first-year courses, and help students develop an appropriate program of study.

If you entered a college code incorrectly or forgot to include one, don't worry! You can still send scores to other colleges. Visit www.act.org/the-act/scores to explore student resources or to order additional score reports.

- 1 UNIVERSITY OF OMEGA
www.universityofomega.edu
- 2 ALPHA UNIVERSITY
www.alpha.edu
- 3 BETA COMMUNITY COLLEGE
www.betacollege.edu
- 4 MAGNA COLLEGE
www.magna.edu

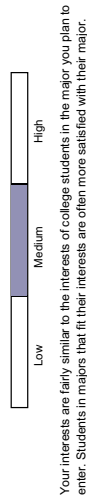
College and Career Planning

Where are you going? Knowing your interests can help you find the kinds of majors and occupations that may be right for you. Occupations differ widely in how much they involve working with four basic work tasks: Data, Ideas, People, and Things. Before you took the ACT, you completed an interest inventory. Your results point to occupations that involve the kinds of basic work tasks you prefer. Visit www.actprofile.org to learn more.



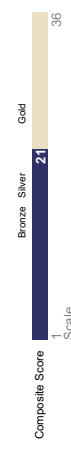
Interest-Major Fit

Do your interests fit the college major you plan to enter? Based on information you provided, you plan to enter **Accounting**.



Progress Toward the ACT National Career Readiness Certificate™

Based on your ACT Composite score, this indicator provides an early estimate of your future achievement on the ACT National Career Readiness Certificate (ACT NCRC). The ACT NCRC is an assessment-based credential that documents foundational work skills important for job success across industries and occupations. Visit workforce.act.org/credential to learn more.



You are making progress toward a Gold level on the ACT NCRC.

Where Are You Going?

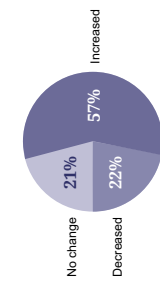
Go to www.actprofile.org to learn more about yourself and find out about careers, majors, and colleges that may be right for you. It's free!

Retesting with the ACT

Consider retesting if one or more of the following applies to you:

- Did you have any problems during the tests, like misunderstanding the directions or feeling ill?
- Do you think your scores do not accurately represent your abilities?
- Are your ACT scores not what you expected based on your high school grades?
- Have you taken more coursework or an intensive review in the areas covered?
- Do you want to apply to a college that requires or recommends the writing test?

Typical Composite Score on a Retest



Go to www.act.org/the-act/retesting for more information.

Test Security Hotline

If you have concerns about the security of the tests, please report them at www.act.ethicspoint.com or 855.382.2845.

MATH SECTION

ABOUT YOUR CALCULATOR

- Use it as a tool not a crutch
- Check for fresh batteries
- Practice testing with it
- Don't rely on the memory function

THE BREAKDOWN

# of Questions	Time (mins)	Content
60	60	Pre-algebra, elementary algebra, intermediate algebra, coordinate geometry, plane geometry, and elementary trigonometry

The ACT Math section tests relatively simple math concepts presented in obscure ways. There are no excuses for being surprised by the type of questions asked on the ACT Math section. Below is a sample of questions the ACT Math section may contain. The actual number of questions in each subject may change.

33 Algebra Questions

- Pre-Algebra questions will be based on basic number theory and manipulation of fractions and decimals.
- Algebra I/Elementary Algebra questions will be based on linear equations, ratios, percentages, etc.
- Algebra II/Intermediate Algebra questions will be based on exponents, roots, quadratics, etc.

23 Geometry Questions

- Plane Geometry questions will be based on angles, shapes, etc.
- Coordinate Geometry questions will be based on slope, graphing, midpoint, etc.

4 Trigonometry Questions

- Elementary Trigonometry questions will be based on sine, cosine, tangent, trigonometric identities, trigonometric functions, etc. Note: Although this is a sample of how many questions may be asked in each subject, you can be confident that the majority of questions on the ACT Math test will be from Algebra and Geometry. Focus your time studying these subjects!

GENERAL MATH SECTION QUICK FACTS

In general, the easier questions tend to come at the beginning of the math section, and the difficult questions tend to come at the end.

- An easy math question is one that will likely take you less than a minute to complete.
- A medium math question will take you a little longer, possibly right at a minute.
- A hard math question will likely take you longer than a minute to solve, possibly even several minutes.

Keep in mind that these are general guidelines. That means that you might see a difficult math question in the middle of the section or an easy question towards the end. Sometimes, this can mean there is an additional step such as a conversion to complete before solving the problem.

TIPS ON APPROACHING THE MATH SECTION

The first time you work through the Math section, complete all of the easy questions immediately. These will typically be among the first 30 questions. Be sure to avoid making careless mistakes. Mark the medium questions as you proceed. These will be the questions that you think you can work but may take some extra time. When you see hard questions, ones that you have no idea how to solve, pick your spot of the day and move along. But remember, if you can eliminate one answer choice before picking your spot of the day, you increase your chances of getting the correct answer.

TIP Avoid doing math when you can.

1

This means knowing how to use your calculator wisely, applying the strategies, and using logic instead of formulas whenever possible. Remember this distinction: there is a difference between getting the mathematically correct answer and figuring out enough about the problem to estimate the correct answer. You only have to do enough math to eliminate the wrong answers!

TIP Break down word problems.

2

Ask yourself what the answers represent. Usually, the question at the end of the word problem will help. Break the problem into sections, using only the information you need in order to solve the problem. Writing down the different sections helps you organize the problem in your mind.

Remember: a word problem is just a regular math problem with more words. Here is the same problem presented in two different ways:

A. 160 students went on a trip to Washington, D.C. If there were 28 more girls than boys on the trip, how many boys went on the trip?

B. $X + X + 28 = 160$

TIP Answers on the ACT Math section are usually ordered (from least to greatest or greatest to least).

3

This means you should always start with answer choice C. If it isn't the right answer, you can eliminate other answers as well. For example, if C is too small a number, and the order of answers is least to greatest, you know that D or E has to be the right answer. If you work the problem and D is also too small, you know that E is the right answer without even testing it.

TIP Pace yourself.

4

Math is the longest section in regard to how much time you have. Pace yourself accordingly. Most students do NOT finish the math portion, and it is purposefully designed that way. If you can get half of the problems right, you are hitting the national average.

TIP Wear a watch.

5

Track the amount of time spent on each problem. Make sure you are not wasting too much time working on one problem.

MATH TERMS AND FUNDAMENTALS

You cannot use the math strategies effectively if you do not know mathematics fundamentals, such as definitions, order of operations, etc. Below are some math fundamentals you will find helpful on the ACT Math section. If you are unfamiliar with the terminology or concepts and you realize that you need remedial work, seek additional help as soon as possible.

Key Term	Definition
Integer	Any number that is not a fraction
Real Number	Any rational or irrational number
Rational Number	Any integer or fraction
Prime Number	Any number divisible by only one and itself
Remainder	The number left over when one integer is divided by another
Absolute Value	The distance a number is from zero
Product	Multiply
Quotient	Divide
Sum	Add
Difference	Subtract
Consecutive	Integers in a sequence
Distinct	Non-repeats
Union	The collection of elements that lie in sets A, B, or both
Intersection	The point where two lines meet
Ratio	A comparison between two amounts. Ratios can be written in a few different ways: A/B “The ratio of A to B” A:B
Fraction	A fraction is the relation between a part to its whole
Proportion	A proportion is the relation between two quantities. Direct variation is simply another term for a proportion. As one quantity goes up, so does the other. Indirect variation is the exact opposite, when one quantity goes up as the other goes down.
Diameter	A straight line going through the middle of a circle connecting two points on a circumference
Radius	Half of the diameter; A straight line from one point on the circumference of a circle to the center point
Pi	The ratio of a circle’s circumference to its diameter; it is approximately 3.14
Hypotenuse	The side opposite of the right angle in a right triangle



Plugging in comes in handy often during the second half of the math section!

ALGEBRA TACTICS

Now that you have been reminded about the kinds of basic math operations you need to know, it's time for some specific math strategies. There are two main tactics that help you avoid doing complicated algebra: Plugging In and Using the Answer. These two strategies will help you solve many of the ACT Math problems. Avoiding algebra helps you turn complex algebra problems into problems that your calculator can solve. Because the ACT doesn't require you to solve problems the "right" way, your goal should simply be to solve problems as quickly as possible. Less algebra = less time and fewer mistakes!

REMEMBER

The answer choices are typically in order. Always start with the middle answer (C or H). If you learn that answer is too high or too low, you will know which answer to try next and which ones you can eliminate

TACTIC 1: PLUGGING IN

Plugging in your own number allows you to avoid using algebra to solve ACT Math problems. Algebra works great when you are in math class and you have to solve each problem by showing work for each step in order to get full credit. In many cases, using algebraic formulas on the ACT can cost you time. Remember, you don't get extra points on the ACT for working the problem out the "right way." **Use this tactic whenever you see a variable in the problem and the answer choices.** Look for key words such as "in terms of." Here are the steps you should take to use this tactic:



1. **Set up the problem** and choose different numbers to represent each variable. Assign each variable a different number. Do not use 1 or 0 for your numbers. These numbers cause you to calculate the same answer for multiple answer choices. Pick numbers that make sense. For example, if you are working a problem about percentages, use numbers that are multiples of 10.
2. **Solve** the problem using the answers you chose.
3. **Write down the answer** you find and circle it. This is your target number.
4. **Plug in** your numbers into the variables in the answer choices and perform the calculations. Remember to begin with answer choice C or H. When your target matches one of the answers, that's the answer you should select.

EXAMPLE 1

If the sum of three consecutive odd integers is p , then in terms of p , what is the greatest of these three integers?

- A. $(p-6)/3$
- B. $(p-3)/3$
- C. $p/3$
- D. $(p+3)/3$
- E. $(p+6)/3$

Answer on pg 35

Step 1: Pick three consecutive odd integers. Do not use 1 or 0.

Step 2: Solve the problem using your numbers. What is the sum of the 3 consecutive odd integers you chose? This answer will represent p in the answer choices.

Step 3: What is the question asking? It's asking for the greatest of the three integers. What is the greatest of the three integers you chose? That's your target.

Step 4: Solve the answer choices using the numbers you chose. Plug in your answer for p to find the correct target.

TACTIC 2: USING THE ANSWER

This tactic allows you to work the problem backwards to solve questions quickly and turn difficult questions into easy ones. Use this tactic when there are numbers in the answer choices or you feel the urge to write out a long algebraic expression. Here are the steps to using this tactic:

EXAMPLE 2

Marc is half as old as Tony and three times as old as Ben. If the sum of their ages is 40, how old is Marc?

- A. 3
- B. 16
- C. 12
- D. 18
- E. 24

Step 1: Whose ages are represented in the answer choices? Label the answer choices.

Step 2: Solve the problem using the answer choices, beginning with C. How do we get from Marc's age to Tony's age? How do we get from Marc's age, to Ben's age?

Answer on pg 35

1. Label the answer choices so you know what they represent.
2. Solve the problem using the answer choices, beginning with C. How do we get from Marc's age to Tony's age? How do we get from Marc's age, to Ben's age?

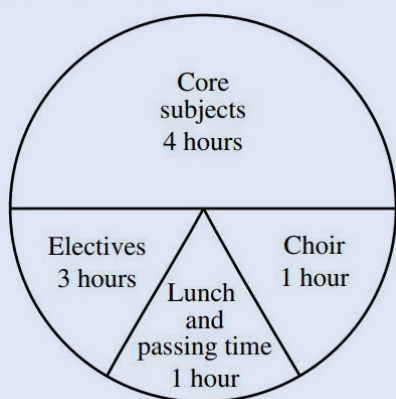
Marc's Age		Tony's Age		Ben's Age	=
A. 3	+	_____	+	_____	40
B. 6	+	_____	+	_____	40
C. 12	+	_____	+	_____	40
D. 18	+	_____	+	_____	40
E. 24	+	_____	+	_____	40

GEOMETRY TACTICS

Many of the geometry problems are not difficult to solve. The trick is figuring out how to solve them without spending too much time doing so. For any geometry problem, make sure to do the following:

- If a figure is given, label it with all the information that is given in the problem.
- If there is no picture, draw your own.
- Remember to study your formulas!
- Solve the problem using logic and critical thinking whenever possible. Use your eyes to eliminate illogical answers.

EXAMPLE 3



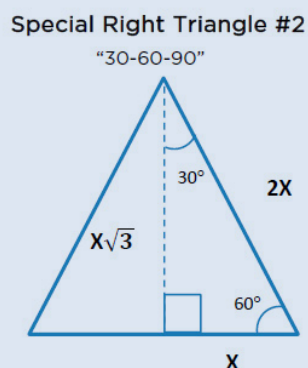
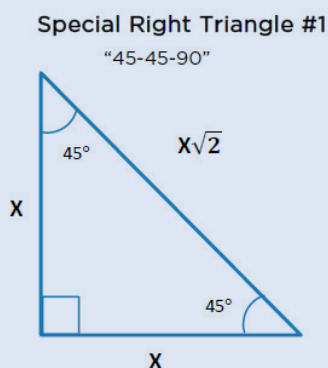
Antwan drew the circle graph describing his time spent at school in 1 day. His teacher said that the numbers of hours listed were correct, but that the central angle measures for the sectors were not correct. What should be the central angle measure for the Core subjects sector?

- A. 72°
- B. 80°
- C. 160°
- D. 200°
- E. 288°

Answer on pg 35

The top half of the circle is made up of 4 hours. The bottom half is 5 hours. They should not take up the same amount of space. The top portion should be a little less than half. Straight lines are at a 180° angle. Which answer choice is a little less than 180° ?

You will benefit from knowing the properties of special right triangles. Knowing these will help you avoid taking extra time to use the Pythagorean Theorem.



Remember common Pythagorean Triples such as 3-4-5 and 5-12-13.

FORMULAS

You will not be given any formulas on the ACT. That means you need to memorize the formulas that are most helpful. The following formulas and properties are typically tested on the ACT:

$$r^2 = (x - h)^2 + (y - k)^2$$

*Equation of a Circle***

$$= \frac{1}{2}(\text{base})(\text{height})$$

Area of a Triangle

$$= (\text{base})(\text{height})$$

Area of a Square/Rectangle

$$= (\text{length})(\text{width})(\text{height})$$

Volume of a Rectangular Solid

$$= \pi r^2$$

Area of a Circle

$$= 2\pi r \text{ or } \pi d$$

Circumference of a Circle

$$A^2 + B^2 = C^2$$

*Pythagorean Theorem**

$$\frac{y_2 - y_1}{x_2 - x_1}$$

Slope Formula

$$= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Distance Formula

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Midpoint Formula

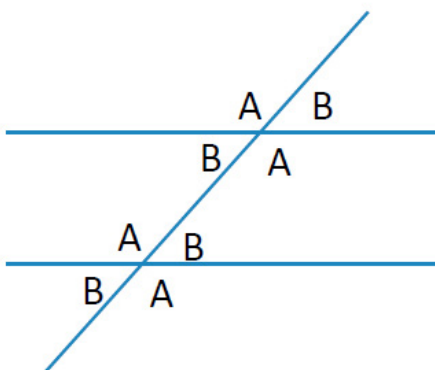
$$\text{sine} = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\text{cosine} = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\text{tangent} = \frac{\text{opposite}}{\text{adjacent}}$$

Trigonometric Functions

When a third line cuts across two parallel lines, the small angles are all equal and the large angles are all equal. The sum of a small angle and a large angle is equal to 180° .



$$A + B = 180$$

Perimeter = sum of all sides

A line is a 180° degree angle

The sum of the interior angles of a triangle is 180° . The sum of the interior angles of a four-sided polygon is 360° . Add 180° to the sum of the interior angles for each additional side added to a polygon.

The **slope-intercept** equation of a line is $y = mx + b$ where m is the slope and b is the y -intercept.

Parallel lines always have the same slope. Perpendicular lines always have opposite reciprocal slopes.

* Used only with right triangles, where a and b are legs, and c is the hypotenuse.

** (h,k) represents the center point of the circle

READING SECTION



THE BREAKDOWN

# of Questions	Time (mins)	Content
40	35	Reading comprehension

The ACT Reading passages will be from four fields. The Prose Fiction or Literary Narrative passage is often the most time-consuming, and for that reason, we recommend saving it for last. Remember, every question is worth the same amount. Focus your time first on the more straightforward passages. Then, if time permits, work on the Prose Fiction or Literary Narrative passage. If you run out of time, use your spot of the day.



TAKE 9 MINUTES FOR EACH PASSAGE.

Both during practice and on test day, wear a watch to make sure you are pacing yourself effectively.



You will have four types of reading passages, and they will always come in this order:

- Prose Fiction or Literary Narrative
- Social Science
- Humanities
- Natural Science

Passages are drawn from books and periodicals such as *The New York Times*, *Scientific American*, and *The Atlantic Monthly*. One of the most effective ways to prepare is by practicing reading the type of material you'll be reading on the test.

Open Book Test

The ACT Reading section tests a different skill set than the reading comprehension skills in your high school English class. In school, you may be assigned a book to read and then be tested on details. Approaching the ACT Reading section in this way, **reading every word and seeing how much you retain, is not a smart use of your time.** Instead, think of the ACT Reading section as an open book test, where you have all the information you need right in front of you.

Interacting with ACT Reading Passages

Remember, the ACT is designed to predict how well you will perform academically in college. College level writing will require that you interact with the assigned text by underlining important words or characters, making notes in the margins, and interpreting the author's main points on your own. In college courses, students will also have a lot more to read in a short amount of time. Thus, they will have to learn to read quickly and skim to find main points. The ACT tests students to see if they actively read and interact with the passages, instead of passively reading without searching for main ideas.

READ THE BLURB

Each passage will be preceded by a blurb giving you details on what you are about to read. The blurb consists of a few short lines right before the passage begins. Many students skip reading this, but don't! The blurb can also help you identify the main idea.

SEARCH FOR THE MAIN IDEA

Actively look to identify the passage's main idea. For Humanities and Social Science passages, the main point is generally a straightforward explanation of an event, project, or individual's importance. For Natural Science passages, the main idea typically relates to a new discovery or the ways in which new research challenges a previously held theory. Literary Narrative and Prose Fiction passages tend to be less straightforward in presenting the main idea; however, the main idea could relate to an insight or goal the narrative drew from a given experience. When the main idea is directly stated, it tends to appear most frequently at the end of the introduction or the end of the conclusion. Review these first. Typically, the correct answers for main idea questions tend to be more general rather than specific. They also won't have extreme language such as "always" or "never."



CIRCLE KEY WORDS

To avoid letting the ACT lead you to the wrong answer, go back into the passage before you answer a question. Circle key words in the question and skim the passage looking for those same words, guiding you to the information you need to know. When answering questions that ask you to identify factual information without giving line references, identify a key word or phrase that you can locate. Then, think logically about where it would be located in the passage. Finally, read the corresponding information to find the correct answer.



COVER AND PREDICT

Another strategy for actively searching for the correct answer is to physically cover up the answer choices when you read the question. Answer on your own before reviewing the answer choices. When you uncover the choices and find your answer in the choices, you'll be confident in your selection.

The majority of vocabulary tested within this section will not be used in their most common definition. Instead, pay attention to how the word is used within context.

SPEED READING STEPS

Use the method that's best for you; while some students prefer to read the questions first, speed reading is a great way to get the facts if you find that you often run out of time to adequately answer the question.

1. Read the *First Paragraph*

After reading the blurb, read the first paragraph in full. The first paragraph usually gives readers a description of what the passage will be about.

2. Read the *Last Paragraph*

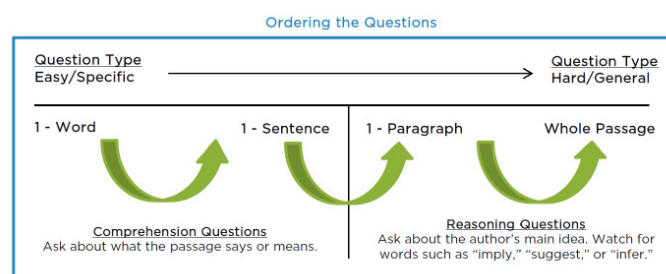
The last paragraph typically sums up all of the preceding information in the passage. Again, you get a good idea of what the passage covered.

3. Read the first sentence of each of the middle paragraphs.

The topic sentences of the middle paragraphs give the reader an idea of supporting details to back up the main idea. Additionally, they give you a good idea of where to find certain information that the questions may ask.

ANSWERING THE QUESTIONS

Once you take one or two minutes to speed read and find the author's main idea, jump straight into the questions. Resist, however, answering the questions as they are presented. As always, answer as many questions as possible in the given amount of time by answering easy questions first and hard questions last, remembering that they are all worth the same amount of points.



Easy Questions: Fetch the Answer

EXAMPLE: "As it is used in line 13, the word *popular* most nearly means:"

- Do these first! These questions ask about the passage, usually one word or phrase.
- They often contain line numbers that tell you exactly where in the passage you need to look to find the answer.
- Do not rush through these and make careless mistakes.

Medium Questions: Read and Reason

EXAMPLE: "The main purpose of the fourth paragraph (lines 34-47) is to describe the:"

- These questions ask about the author. Do these second!
- They might ask you to find information in the passage and then figure out how or why the author uses that information.
- When using process of elimination, look out for trap answer choices.

Hard Questions: Big Picture

EXAMPLE: "One of the main ideas established by the passage is that"

- Do these last! These questions ask about the passage as a whole.
- By the time you answer these questions, you will have a strong understanding about the passage.

READING TEST

35 Minutes—40 Questions

DIRECTIONS: There are several passages in this test. Each passage is accompanied 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.

Passage I

LITERARY NARRATIVE: This passage is adapted from the short story “From Aboard the Night Train” by Kimberly M. Blaeser (©1993 by Kimberly M. Blaeser), which appeared in *Earth Song, Sky Spirit: Short Stories of the Contemporary Native American Experience*.

The passage begins with a female narrator traveling to her hometown.

The moon gives some light and I can make out the contours of the land, see the faint reflection in the lakes and ponds we pass. Several times I see or imagine I see glowing eyes staring back at me from a patch of woods
5 beside the track. When we pass through the tiny towns, I try to read their signs, catch their names from their water towers or grain elevators. Occasionally the train stops at . . . Portage . . . Winona . . . Red Wing.

In my sleeping compartment, watching the night
10 countryside, so much world rolls by my window. Like a voyeur I watch the various reunion scenes. I feel these scenes add up to something, some meaning or lesson about all life, and I try to put it into words for myself but find I can’t. I finally give up, roll over, go to sleep,
15 and dream.

But now I am awake, keeping my vigil over the Midwest’s pastoral kingdom. Chicago, even Minneapolis seems a long way away. A few hours later, still in the deep night hours, the train arrives at my stop,
20 Detroit Lakes, Minnesota, the closest I can get to my destination.

Suddenly, as I descend the two steps from the train, the porter hands me into one of the reunion scenes. “Hi, honey, how was the trip? Did you get any
25 sleep?” “A little. Been waiting long?” “Long enough to beat your dad in two games of cribbage . . .” Glancing back at the train windows, I imagine I am looking into eyes hidden behind mirrored sunglasses.

* * *

I think about progress a lot in the next few days and about what passes for progress. Nightly we walk about town, talk marriages and funerals, then sit on the newly installed benches on Main Street. Together we assemble from our memories the town as it was twenty
35 or twenty-five years ago. We remember the little Model

Meat Market and the old Pioneer office. We rebuild the Landmark Hotel, take down the vinyl fronts from the grocery store, change the light posts, the awnings, the names of the current businesses. I put back the old
40 depot, you the corner funeral home. But soon we are distracted and leave things half constructed when we begin to add the people, what’s-his-name, the square dance caller; Ed, the fire chief; and Lydia, the town’s best gossip. On the walk back home, we have begun to
45 list very specific things, which is the closest we get to the intangibles: the rental meat lockers, the four-digit telephone numbers, the free ice cream during dairy month.

Late at night in my old bed, I listen to the night
50 sounds of the house and fall asleep counting the changes that have come to my little hometown: The park is off limits after dark now, the football field is fenced in, one-hour photo has come to town along with a tanning salon and a pizza parlor. The dry goods store
55 is gone, the dairy, long gone. People lock their houses now more than once a year when the carnival comes to town. But all of these changes pale in comparison to what has replaced the bait shop, the used car lot, and Mr. Morton’s small farm, what has sprung up on High-
60 way 59 at the edge of town: Las Vegas-style gambling.

* * *

Taking the train back, I decide to put on pajamas and crawl under the sheets, hoping to trick myself into a good night’s sleep. It seems to work. I have slept
65 soundly for several hours, but then the dreams start. I fall in and out of them. But they are not the usual nightmares. I am in a place where folks know you ten, fifteen, twenty years after you’ve left and still see in your face that of your grandfather or aunt or cousin. I know I
70 am home and I feel safe.

I have an early breakfast with a would-be journalist and some ski vacationers who want to talk about election prospects. I merely feign attention. I nod or laugh on cue, while I try to read upside-down a story in
75 the would-be journalist’s newspaper that has caught my eye. It is about the Russian space station and the cosmonaut who had been up in orbit during the takeover attempt and ultimate dissolution of the Soviet Union. After sixteen long months, they are bringing the capsule back. While the train carries me back to my current
80 home and away from my former, I keep thinking about

that poor cosmonaut coming back to find his whole world changed, to find himself a man without a country—at least without the country he left behind.

85 I watch the ten o'clock national news broadcast. I see him emerge from the capsule. I see him try to stand and have his knees buckle. I know they said it was because he hadn't been able to exercise for such a long time, but I wonder if his weak-kneed feeling might not
90 have more to do with what he saw out the window of the space station and with how the world was happening around without him.

1. The point of view from which the passage is told is best described as that of:
 - A. a young adult riding a train through the small towns of the Upper Midwest.
 - B. a young adult preparing to move away from her hometown.
 - C. an adult missing the new home she has established.
 - D. an adult reflecting on the past and pondering the present.
2. The passage contains recurring references to all of the following EXCEPT:
 - F. dreams.
 - G. reunion scenes.
 - H. photographs.
 - J. train trips.
3. The first three paragraphs (lines 1–21) establish all of the following about the narrator EXCEPT that she is:
 - A. passing through a number of towns.
 - B. originally from Chicago.
 - C. traveling by train.
 - D. observant of the landscape.
4. It can reasonably be inferred from the passage that the narrator thinks her hometown has:
 - F. improved significantly over the years.
 - G. made little genuine progress.
 - H. remained about the same as it was years ago.
 - J. a chance of being rebuilt as it used to be.
5. Based on the narrator's account, all of the following were part of the past, rather than the present, in her hometown EXCEPT:
 - A. four-digit phone numbers.
 - B. the fenced-in football field.
 - C. free ice cream during dairy month.
 - D. the depot.
6. According to the narrator, which of the following businesses is relatively new to her hometown?
 - F. The tanning salon
 - G. The bait shop
 - H. The dry goods store
 - J. The used-car lot
7. When the narrator refers to the cosmonaut as "a man without a country" (lines 83–84), she is most likely directly referring to the:
 - A. cosmonaut's feeling that he is now a citizen of space, not the former Soviet Union.
 - B. cosmonaut's unrealized expectation that he will be treated like a hero.
 - C. political transformation that occurred while the cosmonaut was in space.
 - D. sixteen months that the cosmonaut spent in orbit around Earth.
8. Details in the passage most strongly suggest that the people meeting the narrator at the train station include:
 - F. her father.
 - G. her sister.
 - H. a neighbor.
 - J. a journalist.
9. The narrator indicates that the most significant change to her hometown has been the addition of:
 - A. square dancing.
 - B. vinyl storefronts.
 - C. benches on Main Street.
 - D. Las Vegas-style gambling.
10. According to the passage, news reports attributed the cosmonaut's knees buckling to:
 - F. his gratitude at being back on Earth.
 - G. political changes in the world.
 - H. a lack of exercise.
 - J. his dismay at what he had seen from the space station.

Passage II

SOCIAL SCIENCE: This passage is adapted from the article “Green Music in the Rain Forest” by Suzanne Charlé, which appeared in the Fall 2002 *Ford Foundation Report*.

OELA is an acronym based on Portuguese words rather than the English words used in this article. A *luthier* is a maker of stringed musical instruments.

The Amazonian Workshop School for Fabrication of Stringed Instruments (OELA) is a small part of a larger effort to create a sustainable harvest of the great Amazon forest and to give employment to the region’s
5 burgeoning population.

“Few people know that the Amazon is one of the most rapidly urbanizing regions of the world,” observes José Gabriel López, a Ford Foundation program officer in Brazil. The city of Manaus, for example, has grown
10 in the past decade from 850,000 to 1.5 million. “This rural-urban migration and the resultant urban shantytowns stand as living symbols of failed or nonexistent rural development policies,” López says. “In many
15 places, small-scale rural producers have been abandoned—devoid of health and education services, credit, technical assistance and opportunity. What Rubens Gomes, founder of the workshop school, and his colleagues have created in Manaus is hope.”

Gomes knows how to build hope. The school, he
20 notes proudly, is the first to make stringed instruments in the Amazon. And it is the first in all of the Americas to construct instruments exclusively of lumber harvested in an environmentally and socially sustainable manner certified by the Forest Stewardship Council.

“Officially, there are 30 million cubic meters of wood cut in the Amazon annually,” Gomes says. “Twenty million of this is wasted—sawdust, scraps, unwanted wood left to rot. And those are the official
25 numbers. The motive of this school is to transform what is lost into things of value. Many people could do
30 this—but there are no schools teaching carpentry in the Amazon.”

OELA is meant to help fill the void. To graduate, each student must make a stringed instrument. All the
35 guitars are made from certified wood. Gomes explains that traditionally, Brazilian rosewood and ebony were used in the construction of guitars. But because of intense harvesting, these trees are close to extinction. “I’ve been working for years, trying to find Amazon
40 woods that are unknown on the market, that are in plentiful supply and that can be used in instrument making,” Gomes says. He experimented with dozens before he found types that have the right strength and
45 sound. (Like other master luthiers, he can tell by touching the wood whether it will reverberate well.) Once he identified the woods as possible substitutes, he sent them to a laboratory to be tested for the right grain and density. Today, *Brosimum rubescens* is substituted for rosewood, *Aniba canellila* for ebony, and *Protium*
50 species for Brazilian mahogany and cedar. These and

some 25 other undervalued tropical hardwoods have found their way into the luthiers’ workshop, taking the pressure off the better-known woods.

For the past year, master luthier Raúl Lage from
55 the Fernando Ortiz Instrument-Making School of the Cuban Music Institute has been working with the students. There are hurdles, he cautions, a number of them technical. The high humidity in Manaus means that the wood will crack in drier climates unless properly
60 treated. Glue frequently doesn’t hold. These problems are slowly being resolved.

There is also a major obstacle outside the workshop: The resistance of buyers to new woods. Thus far, most of the instruments have been sold to environmen-
65 talists, some of whom “adopt” a student by paying his or her tuition; the student’s “project guitar” is then given to the donor as a gift.

There is also the possibility of contract work from outside the Amazon. Gomes’s hopes were raised
70 recently when the president of a well-known guitar company based in Nashville, Tennessee, ordered 15 guitars to be auctioned off for the Rainforest Alliance.

Lage cautions that it will be a long time before any
75 of the students can command a master luthier’s fee. “There is a saying,” Lage says. “Anyone can make one good guitar; it takes a master to make one every time.”

José Lucio do Nascimento Rabelo, director of the technical school, says, “By learning this skill, students
80 come to look at the forest in a new way; there are ways other than logging for plywood and firewood to earn a living, to better the life of the people.” One of the woods being used as a replacement for the precious rosewood, he notes, is typically used to make charcoal.

Such an appreciation for the forest, says Rabelo,
85 could have a huge effect on the survival of the rain forest; some 80 percent of the students come from other parts of the state of Amazonas, and virtually all of them return to their home towns. “Some,” he adds, “go on to
90 become politicians who will have a direct influence on the future of the forest.”

11. Which of the following assumptions would be most critical for a reader to accept in order to agree fully with the author’s claims in the passage?
- A. Shantytowns in the Amazon need to be relocated if the forest is to be saved.
 - B. Learning to make consistently good guitars requires access to the best materials available.
 - C. Small-scale rural producers in the Amazon can help preserve the forest by being innovative.
 - D. Consumers outside of the Amazon can do little to help prevent deforestation.

12. In the context of the passage, the statement “All the guitars are made from certified wood” (lines 34–35) most nearly suggests that Gomes’s workshop:
- F. uses environmentally sustainable woods in its guitars.
 - G. isn’t doing enough to stop unnecessary deforestation in the Amazon.
 - H. has little chance of pleasing both musicians and environmentalists.
 - J. uses only traditional woods in making its guitars.
13. It can most reasonably be inferred from the passage that regarding OELA, the author feels:
- A. skeptical of the workshop’s aims.
 - B. dismayed by the workshop’s low productivity.
 - C. supportive of the workshop’s goals.
 - D. confident that the workshop could be duplicated in other places.
14. The main purpose of the second paragraph (lines 6–18) is to:
- F. draw attention to the Amazon’s tremendous population growth.
 - G. explain the necessity for ventures such as Gomes’s.
 - H. explain the presence of the Ford Foundation in the Amazon.
 - J. justify raising taxes to increase social services in the Amazon.
15. The main function of the fifth paragraph (lines 33–53) is to:
- A. demonstrate the woodworking skills required to be a master luthier.
 - B. explore the limitations of science as compared to intuition.
 - C. outline the scientific reasons why one type of wood cannot be replaced by another.
 - D. show that experiments led to the discovery of good substitutes for rare woods.
16. The passage notes all of the following as problems that the fledgling Amazon guitar industry has experienced EXCEPT that:
- F. glue on the guitars sometimes doesn’t hold.
 - G. the wood used may crack in drier climates.
 - H. woods usable for guitars have become extinct.
 - J. buyers resist guitars made with nontraditional woods.
17. The passage indicates that, as a group, the OELA students may impact the survival of the rain forests because most of them:
- A. care deeply enough about music to spend their lives making musical instruments.
 - B. will return to their homes and spread their environmental knowledge.
 - C. are willing to endure personal hardships in order to use their new skills.
 - D. will have political careers after they return home.
18. In the passage, Gomes indicates that of the wood cut in the Amazon rain forest each year, approximately how much wood is wasted?
- F. One-fourth
 - G. One-third
 - H. One-half
 - J. Two-thirds
19. The passage states that all of the following are woods traditionally used for making stringed instruments EXCEPT:
- A. Aniba canellila.
 - B. rosewood.
 - C. Brazilian mahogany.
 - D. ebony.
20. According to the passage, when an OELA student is “adopted,” he or she receives:
- F. tuition.
 - G. room and board.
 - H. food and clothing.
 - J. a musical instrument.



THE BREAKDOWN

# of Questions	Time (mins)	Content
40	35	Interpretation, data analysis, evaluation, reasoning, and problem solving

The ACT Science test consists of six or seven passages with a total of 40 questions in 35 minutes. The Science section is especially challenging for many students because it comes at the end of the ACT. One of the best things you can do to prepare is to take one full-length timed test before your scheduled ACT test day.



DON'T FOCUS TOO MUCH ON SCIENCE TERMINOLOGY.

The ACT Science section isn't really a science test at all. Instead, it's a reading comprehension test where science is the subject. This means you can do well without being a science genius!



Time Management

Many students struggle with time management on the ACT Science section. One effective practice method is timing yourself. You have between five and six minutes per passage, depending on how many passages are presented. Time yourself with each type of passage to acquaint yourself with the time limit.

Open Book Test

The challenge with the ACT Science section is that, unlike other sections, you have probably never seen a test quite like it before. Whereas your science classes at your high school test you on memorizing various scientific terms and ideas, that sort of studying won't help you on this test. Instead, you need to practice analyzing both text and charts/graphs.

Much like the ACT Reading, think of this as an open book test. Instead of reading every word or chart and then seeing how much you remember when you get to the questions, practice jumping between the questions and passage strategically.

Read Actively

The best way to avoid having to read a paragraph or chart multiple times is to read actively. Whether your style is to summarize with notes in the margins or to underline key variables in a chart, active reading is the most important skill you can develop to use your time most effectively. The ACT tests to see if you actively read and interact with the passages instead of passively reading without searching for main ideas.

IDENTIFY THE PASSAGE TYPE

Though you will have the same amount of time and the same number of questions on the ACT Science as you did for the ACT Reading, you'll be given either six or seven passages instead of four. Your first strategy towards effective time management will be to identify the passage type and complete the easier passages first. Remember, every question is worth the same amount.

Charts and Graphs (Data Representation)

These passages are the most straightforward. The questions will test your ability to read graphs and interpret tables and scatterplots. Because these passages are data representation presented through charts, tables, line graphs, scatterplots, etc., they tend to be the easiest to complete. **We recommend completing these passages first.** Jump straight into the chart/graph to get a feel for the data presented before you start answering questions.

Experiments (Research Summaries)

These passages are a hybrid of prose (explaining the experiment) and graphs (presenting the results). The questions ask about the design of experiments and interpretation of results. The “Experiments” passages will provide details of one or more related experiments. **You may want to complete these types of passages second.** You'll need to cultivate both the skills to actively read prose and analyze a chart or graph to do well on these passages. Try reading about the experiments first to get a general understanding, then analyze the graphs and answer questions. You will see terms such as Study 1/Study 2, Experiment 1/Experiment 2.

EXAMPLE

This is a sample of how the ACT Science passages could be broken down:

- 3 - Charts and Graphs**
- 3 - Experiments**
- 1 - Conflicting Scientists**

Although this is a sample, and the actual number of Charts and Graphs and Experiments passages may slightly vary, you can be confident that the majority of questions will come from those 2 types of passages, rather than Conflicting Scientists.

Conflicting Scientists (Conflicting Viewpoints)

There will be one “Conflicting Scientists” passage, and it is typically the most difficult and time-consuming. The format of this passage includes multiple individuals proposing conflicting viewpoints on one scientific idea. Representing these perspectives, you may see terms such as *Scientist 1/Scientist 2*, *Hypothesis 1/Hypothesis 2/Hypothesis 3*, or *Student 1/Student 2*.

Because this is usually the hardest passage, we advise saving it for last. Of course, if you run out of time and are unable to complete the “Conflicting Scientists” passage, be sure to choose your spot of the day so that you do not leave any questions blank. In order to do well on this passage, you'll need to have strong analytical reading skills. The viewpoints discussed will not be exact opposites of each other, so you'll need to analyze how the arguments agree and disagree.

ANALYZING CHARTS AND GRAPHS

When you see a graph, no matter which kind it is, ask yourself three questions:

1. What are the variables? (temperature, number of plants, pressure, mph)
2. How are they measured? (grams, quarts, percentage)
3. What does the graph tell you?

Be sure you are looking at the correct table, graph, or chart. Some charts may look very similar, so circling or underlining titles and key words can be helpful.

Understanding the variables of the graph and the relationship between those variables is the best way to prepare before moving on to the questions. Remember, if you see a graph in the passage, the majority of questions will focus on interpreting the graph rather than the words in a passage. Focus mainly on the key words that help you understand what the graph is telling you.

Develop a habit of instantly identifying trends. Recognizing trends can help you answer more complex questions which require you to predict information. The Science section wants you to estimate and approximate. The test does not require that you come to an exact answer. Instead, use estimations to come to a close answer.

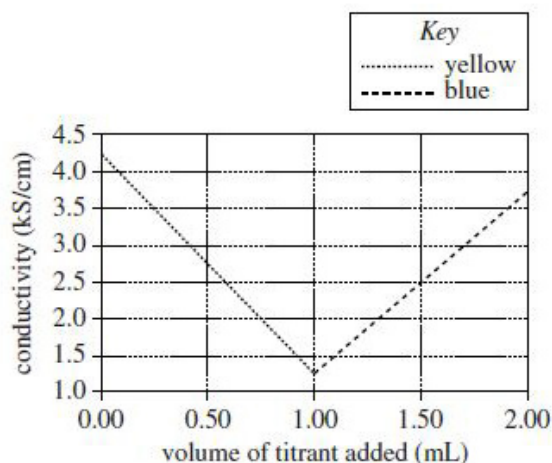
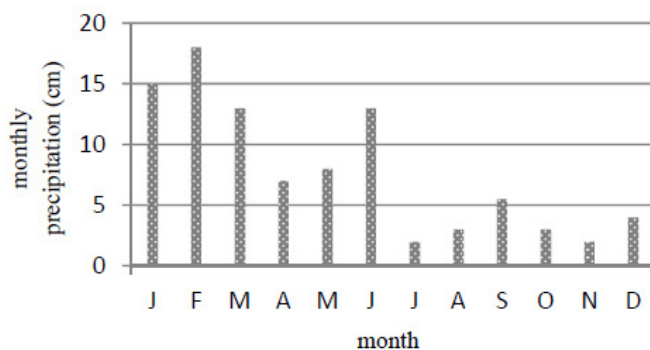
When working with line graphs, physically take your pencil and extend the graph. This will ensure the best estimation, and usually only one answer choice will be within the correct range.

Table

Table 1	
Cosmic ray flux (particles/m ² /hr)	Cover of low clouds (%)
340,000	27.8
360,000	28.1
380,000	28.4
400,000	28.7
420,000	29.0

Table 1 adapted from E. Paleo Bagó and C. J. Butler, "The Influence of Cosmic Rays on Terrestrial Clouds and Global Warming." ©2000 by Institute of Physics Publications, Ltd.

Bar Graph



USE YOUR LOCATORS



One key to effectively tackle the Science section is to use your locators. The most important part of answering questions is knowing where to look first. If the question references a specific figure or table, you know to look there. If the question says, “Based on the results of Study...” you want to look at the data of a particular study. If the question says, “Based on Study...” then your answer could be located in the text or the data of the study. If the question says, “According to the passage” or “Based on the information...” then the answer will most likely be found in the text of the study.

Next, you want to know what to look for. Within each question, look for units or science terminology. This will help you determine exactly what information you are looking for. Using your locators can help you quickly and effectively answer questions within the Science section of the ACT.

EXPERIMENTS STRATEGY

Step 1: Speed Read the Prose

Start with getting a very basic understanding of what the experiment is about. Don’t spend more than a minute on this initial summary. When reading, the best skill to practice is making enough notes so that you don’t have to waste time re-reading the paragraph.

Step 2: Jump into the Graphs

Similar to the “Charts and Graphs” passages, the majority of the questions on the “Experiments” passages will rely on your ability to analyze the charts and graphs. Once you get a general understanding of the experiment, go straight to the graph before you begin answering questions.

Step 3: Answer the Questions Strategically

As always, answer the questions in easy-to-hard order. The difficult part will be knowing when you need to skip a question before it eats up too much of your time.

CONFLICTING SCIENTISTS PASSAGE

Follow these steps to strategically break down this more time-consuming type of passage. At least two views about a scientific theory will be presented. Go over each theory briefly to understand the puzzle-fit of the arguments before answering the questions.

Step 1: Skim hypothesis 1 to determine the argument.

Step 2: Answer all questions that ask about hypothesis 1 only.

Step 3: Skim hypothesis 2 to determine the argument.

Step 4: Answer all questions that ask about hypothesis 2 only.

Step 5: Answer all questions that ask to compare and contrast the two arguments.

Remember to tackle the “Conflicting Scientists” passage at the very end, spending the bulk of your time making sure you get the other passages correct.



SIMPLIFYING STRATEGIES

Substitute to Simplify

Many students are intimidated by the scientific terms in the ACT Science section. Remember, this section is not about your knowledge of science. It tests your reading comprehension skills. If certain terminology is distracting you, just replace the terminology with words or symbols that make it easier to understand.

Circle Key Words

To avoid letting the ACT guide your brain to the wrong answer, always go back into the passage before you answer a question. One strategy is to circle key words in the question and then skim text as well as charts/graphs looking for those words to zero in on what you need to know.

Cover and Predict

Another strategy for actively searching for the correct answer is to physically cover up the answer choices when you read the question. Answer on your own before you uncover the answer choices. When you uncover and find your answer as one of the choices, you can feel confident that you got it right.

Use Process of Elimination (POE)

When you are stuck on answering a question, always fall back on POE to eliminate incorrect answer choices. Spend time going back to the passage to make sure that you make the best possible guess.

ANSWERING THE QUESTIONS

Once you have a general feel for the information presented in the charts and graphs, you can jump straight into the questions. As always, rack up as many points as possible by answering easy questions first and hard questions last, remembering that they are all worth the same amount. Unlike the ACT Reading section, the ACT Science section generally organizes the questions in order of difficulty. The challenge on this test is not allowing one question to take up too much of your time. Practice knowing when to pick your spot of the day and move on.

Easy Questions: “Fetch the Answer”

These questions ask about the passage, usually from a chart or graph. They usually come first, so answer them right after analyzing the information given. Do not rush, making careless mistakes on these questions.

Medium Questions: “Read and Reason”

These questions ask you to slightly analyze the information presented. We recommend doing these second. When using process of elimination, look out for trap answer choices.

Hard Questions: “Big Picture”

These questions ask about the passage as a whole. Typically, you want to save these for last. By the time you answer these questions, you will have analyzed the information multiple times and hopefully have a very good idea about the general purpose of the passage.



THE BREAKDOWN

# of Questions	Time (mins)	Content
75	45	Grammar, usage, mechanics and rhetorical skills

The ACT English test consists of five passages with a total of 75 questions in 45 minutes. Skipping around strategically will not help you in English as it does in other sections. Practice pacing yourself and answering questions as you go. Timing yourself is one way to practice effectively. Give yourself 9 minutes to read one passage and answer all associated questions.

Usage/Mechanics

(40 questions)

*Punctuation
Grammar and Usage
Sentence Construction*

Rhetorical Skills

(35 questions)

*Writing Strategy
Organization
Style*

In order to do well on this section, you'll have to know the formal rules of the English language. You'll need to practice your grammar, punctuation, and usage rules.

“The shortest answer choice that makes sense is going to be the correct answer.”

ENGLISH STRATEGIES

1. **Assume everything that is not underlined is correct.** You will want to read the entire sentence instead of just skipping to the underlined section. This is different than the ACT Reading section, where you can jump around. If a sentence or a paragraph does not have a corresponding question, then that may mean the next question will ask about what came before. When answering questions, assume that everything not underlined is correct. Pick out context clues to make the underlined portion match the rest of the passage.
2. **Trust your ear, but verify.** The ACT may try to trick you by giving you answers that sound right, but aren't. Review your grammar rules to help select the best answer choice.
3. **Use Process of Elimination (POE).** Just as you would in any other section, use process of elimination to rule out illogical answers. This will increase your chances of answering the question correctly.

USAGE/MECHANICS

These questions comprise 40 of the 75 questions in the English section. They are broken into three categories:

Punctuation questions ask you to identify and correct any misplaced, misused, or missing punctuation marks. The punctuation marks most commonly tested on the ACT are, in order of decreasing frequency: commas, apostrophes, colons, and semicolons.

Basic Grammar and Usage questions usually target a single incorrect word that violates the conventional rules of English grammar. These questions frequently test knowledge of agreement and pronoun and verb forms and cases.

Sentence Structure questions tend to deal with the sentence as a whole. They test on clause relationships, parallelism, and placement of modifiers.

PUNCTUATION REVIEW

Commas

Used in four ways on the ACT:

Around unnecessary information:

“My father, an English professor, likes to read nonfiction books.”

Between items in a list:

“I bought milk, eggs, and bread at the grocery store.”

Between a complete and incomplete clause:

“Since it was raining, we could not go for a swim.”

Before FANBOYS (for, and, nor, but, or, yet, so):

“John wanted tea to drink, but the store did not have any.”

Apostrophes

Used to indicate possession or to mark the missing letters in a contraction.

Possession:

“Nancy borrowed Jennifer’s shirt.”

Contraction (should not):

“You shouldn’t forget to study.”

Semicolons

Used to relate independent clauses that are not joined by a conjunction.

Relate clauses:

“She calls it pop; I call it soda.”

Colons

Introduces an element or series of elements that illustrate or amplify the information that preceded the colon.

“You would’ve gotten a perfect score on the ACT if it weren’t for one subject: math.”

Dashes

Used to indicate an abrupt break in thought or to introduce an explanation.

Abrupt break in thought:

“For our vacation—which was way too short—we went to the beach.”

SENTENCE STRUCTURE REVIEW

Sentence Structure questions test your knowledge of how sentences and ideas should be joined or separated. These errors will typically be tested through clauses.



Don't be afraid to select "Delete the Underlined Portion" or "No Change" as the answer. They are correct just as often as the other choices. Don't avoid selecting these answers!



There are two types of clauses that will be tested:

Independent Clauses (Main)

A group of words that contains a subject and verb and expresses a complete thought. An independent clause makes a complete sentence.

Dependent Clauses (Subordinate)

A group of words that contains a subject and a verb but does not express a complete thought. A dependent clause cannot be a sentence and must be joined to an independent clause.

Run-on Sentences can be easy to spot because they tend to be long and confusing. A run-on sentence occurs when independent clauses are joined together without any punctuation.

Incorrect: My friend went to Paris she saw the Eiffel Tower.

Correct: My friend went to Paris. She saw the Eiffel Tower.

Comma Splice is an error in which two independent clauses are separated only by a comma.

Incorrect: Paul wanted to go to the mall, he wanted to see a movie.

Correct: Paul wanted to go to the mall, and he wanted to see a movie.

Fragments are incomplete sentences. Usually, fragments are pieces of sentences that have become disconnected from the main clause.

Incorrect: When you get back from shopping.

Correct: We will cook dinner when you get back from shopping.

Modifiers are descriptive words or phrases used to add depth or dimension to the phrase that they modify. Modifiers are misplaced if they do not actually refer to what they are modifying.

Incorrect: I was walking down the street and I saw a gold man's watch.

Correct: I was walking down the street and I saw a man's gold watch.

Parallelism refers to the structure of a sentence in which all verbs are in the same form.

Incorrect: Chris will attend college, major in biology, and maintaining good grades.

Correct: Chris will attend college, major in biology, and maintain good grades.



ADDITIONAL RULES YOU MIGHT HAVE FORGOTTEN

Who vs Whom:

Who refers to the subject of a sentence or clause. It can be replaced with he, she, or they. **Whom** refers to the object of a sentence or clause. It can be replaced with him, her, or them.

“To whom should I give my ticket?”

“Who can tell me the name of the second president?”

It’s vs Its:

It’s is a contraction for it is. **Its** indicates possession.

“It’s going to be a beautiful day.”

“The milk has passed its expiration date.”

Your vs You’re:

Your is a possessive pronoun. **You’re** is a contraction for you are.

“Your umbrella is next to the door.”

“You’re going to enjoy the zoo.”

Their vs There vs They’re:

Their shows possession among a group. **There** refers to a place or idea. **They’re** is a contraction for they are.

“The students are going on their trip today.”

“There is the bakery that I love.”

“They’re going to have a great time.”

Who’s vs Whose:

Who’s is a contraction for who is. **Whose** is the possessive form of who.

“Who’s ready to help me?”

“Whose dog is barking?”

Collective nouns represent something plural but they’re treated as if they were singular (ex. team, class, equipment, everyone, each).

Incorrect: Each one of my family members **are** coming to Thanksgiving.

Correct: Each one of my family members **is** coming to Thanksgiving.

Cut the fat. All of the extra information that separates the subject from the verb is called the fat. When you cut the fat and put the subject and verb together, it’s easier to see whether or not they agree.

Incorrect: The pack of dogs **are** running through the yard.

Correct: The pack of dogs **is** running through the yard.

Ambiguity You cannot use a pronoun in the place of a subject if it’s not clear what/whom you’re referring to.

Incorrect: The county cleared this path and paved it with packed gravel so **they** would have a peaceful place to hike and bike.

Correct: The county cleared this path and paved it with packed gravel so **people** would have a peaceful place to hike and bike.

Redundancy is when you’re repeating yourself unnecessarily.

Incorrect: My legs are sore because I’ve been jumping up and down.

Correct: My legs are sore because I’ve been jumping.

TEST INFORMATION RELEASE (TIR)

Request a copy of your multiple-choice test questions and answers by logging into your MyACT account.

DECEMBER, APRIL, AND JUNE
TEST DATES ONLY

COLLEGES IN MISSISSIPPI

COMMUNITY & JUNIOR COLLEGES

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coahomacc.edu

Hinds CC 
hindscc.edu

Meridian CC
meridiancc.edu

Northwest MS CC
northwestms.edu

Copiah-Lincoln CC
colin.edu

Holmes CC
holmescc.edu

MS Delta CC
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Pearl River CC
prcc.edu

East Central CC
eccc.edu

Itawamba CC
iccms.edu

MS Gulf Coast CC
mgccc.edu

Southwest MS CC
smcc.edu

East MS CC
eastms.edu

Jones College
jcc.edu

Northeast MS CC
nemcc.edu

PUBLIC UNIVERSITIES

Alcorn State University 
alcorn.edu

Delta State University
deltastate.edu

Jackson State University 
jsums.edu

Mississippi State University 
msstate.edu

Mississippi University for Women
muw.edu

Mississippi Valley State University 
mvsu.edu

University of Mississippi 
olemiss.edu

University of Southern Mississippi 
usm.edu

PRIVATE UNIVERSITIES

Belhaven University
belhaven.edu

Blue Mountain College
bmc.edu


Millsaps College 
millsaps.edu


Mississippi College 
mc.edu

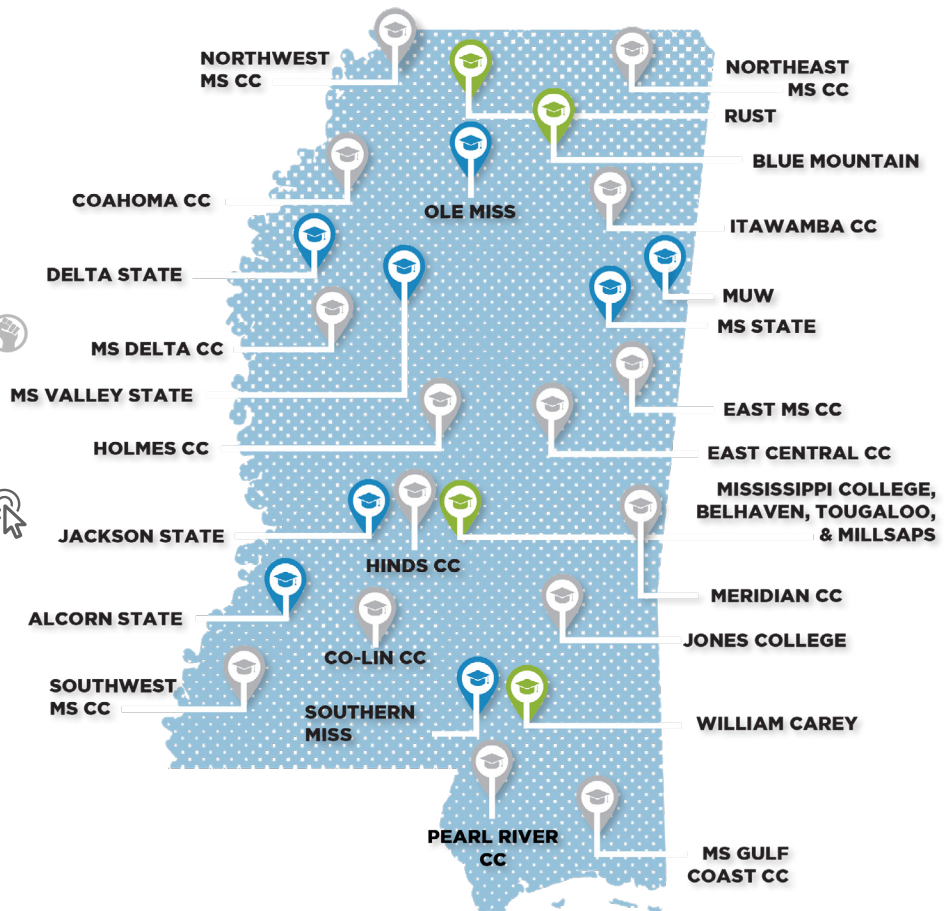
Rust College 
rustcollege.edu

Tougaloo College 
tougaloo.edu

William Carey University
wmcarey.edu

 **ONE CLICK TO APPLY**
Apply to these colleges with one admission application, the Common Application, at commonapp.org.

 **HISTORICALLY BLACK COLLEGES & UNIVERSITIES (HBCU)**
A college or university that was originally founded to educate students of African American descent.



REQUIREMENTS FOR COLLEGE ADMISSIONS

If you want to go to one of Mississippi's eight public universities, you should meet the requirements for one of the tracks.

TRACK 1	TRACK 2	TRACK 3	FOR ATHLETES
	16+ ACT	18+ ACT	
	+	+	
3.2 GPA minimum	2.5 GPA minimum or top 50% of class	2.0 GPA minimum	NCAA National Collegiate Athletic Association
+	+	+	
CPC College Preparatory Curriculum	CPC College Preparatory Curriculum	CPC College Preparatory Curriculum	NCAA Division I standards for student- athletes who are "full-qualifiers" or "academic redshirts" are accepted as equivalent to the admission standards established by the Board.
Complete CPC with a minimum 3.2 high school grade point average (GPA) on the CPC.	Complete CPC with a minimum 2.50 high school GPA on the CPC or a class rank in the top 50% and a score of 16 or higher on the ACT*	Complete CPC with a minimum 2.0 high school GPA on the CPC and a score of 18 or higher on the ACT*	For more details, visit eligibilitycenter.org .

*In lieu of ACT scores, students may submit equivalent SAT scores.

“DO I HAVE TO TAKE BOTH THE ACT AND THE SAT?”

Students can use online concordance tables to compare SAT and ACT scores and decide which results to use in college applications.

DON'T MEET THE CRITERIA FOR ADMISSION?

Students who do not meet the above criteria are still eligible for admission if they participate in a Summer Development Program (SDP). Students will enroll in one or more deficient subject areas (English, Reading, or Mathematics) based on ACT subscores and/or ACCUPLACER scores. ACCUPLACER is a series of tests that evaluate students' skills in reading, writing, and math to help college administrators place them in courses that match their skills. They receive training in study skills and counseling to enhance their ability to succeed at the university.

ANSWERS

Math Section

Example 1 (pg 14) Answer: E

Example 2 (pg 14) Answer: C

Example 3 (pg 15) Answer: C

Reading Section pg 20

- | | | |
|------|-------|-------|
| 1. D | 8. F | 15. D |
| 2. H | 9. D | 16. H |
| 3. B | 10. H | 17. B |
| 4. G | 11. C | 18. J |
| 5. B | 12. F | 19. A |
| 6. F | 13. C | 20. F |
| 7. C | 14. G | |

TEST TAKING STRATEGIES

Pace yourself and answer EVERY question

Concentrate on the easy/medium questions to gain the most points. There is no penalty for guessing on the ACT, so guess on the hard questions if you are uncertain of the correct answer or you run out of time. The ACT booklet won't be graded, so mark it up as you narrow down your answers, show your work on math problems, and underline key information in passages.

Practice makes perfect

The ACT is a standardized test, so you can learn what you will be tested on and how the questions will be asked. Practice as if you are taking the real ACT, so get up early to practice while you are TIRED! Practicing will help you become more accustomed to taking the ACT.

Process of elimination

Narrow down your choices before taking a guess. A 50% chance of getting it correct is better than a 25% chance. Also, the test booklet won't be graded, so feel free to cross out and work out math problems directly in the book.

Spot of the day

Pick a spot of your choice before starting the test. Use that spot every time you need to guess or run out of time. It will increase your odds of getting questions correct compared to randomly guessing.

ACCOMMODATIONS ON YOUR TEST DATE

If you receive accommodations for a professionally diagnosed and documented disability, visit actstudent.org for a list of accommodations you can receive on the ACT as well as the policy for submitting documentation for the accommodations.

PREPARING FOR THE ACT

..... Websites

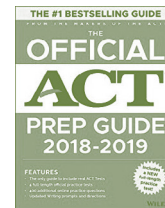


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Khan Academy
khanacademy.org

..... Books



The Official ACT Prep Guide
(The Red Book)



ACT Prep Black Book: The Most Effective ACT Strategies Ever Published

..... Mobile Apps



ACT Pocket Prep
by *Pocket Prep, Inc.*



ACT Prep Coach & Practice Test
by *Magoosh*

Gulf Coast Get2College Center

715 Cox Avenue, Ocean Springs, MS
228.875.4441 | gulfcoast@get2college.org

Jackson Get2College Center

2616 Lakeward Drive, Jackson, MS
601.321.5533 | jackson@get2college.org

North MS Get2College Center

5699 Getwell Road, Bldg H, Ste 3
Southaven, MS
662.349.2789 | nms@get2college.org

WHAT'S NEXT4U?

GET2IT.



#1 first u
haf-ta
fafsa™

Whether it's a 4-year university or technical program at a community college, we're here to help. For free resources or to schedule an appointment, please visit us at get2college.org