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Taking the SAT
Part 2

Let’s discuss how you go about taking the SAT. The exam is administered at standard testing dates and locations worldwide throughout the academic year. These standard dates fall in March, May, June, August, October, November, and December, but the March test date is only available in the United States. You can see the upcoming dates in your location on the College Board website: sat.collegeboard.org.

How Do I Register?
The easiest way to sign up for the exam is on the College Board website: sat.collegeboard.org. You’ll need to fill out a personal profile form and upload a recognizable photo, which will be included on your admission ticket. There is a cut-off for registrations a month before the test date, after which you’ll need to contact the College Board to see if late registration or standby testing is an option.

If you chose to register by mail, you’ll need to enclose a photo with a paper registration form. To do this, ask your school counselor for The Student Registration Guide for the SAT and SAT Subject Tests, which includes a registration form and a return envelope.

When Should I Take the SAT?
Typically, students take the SAT during 11th grade or the beginning of 12th grade, but you should plan to take the exam when you feel most prepared. Keep in mind that almost all colleges will accept scores through December of your 12th grade year. However, if you are planning to apply for Early Admission to any school, you’ll need to take the test by November of 12th grade at the very latest.

Can I Retake the SAT?
Yes! The College Board has no limits on how many times you can take the SAT. While many students take the exam two or three times, we don’t recommend taking the exam more than this, because you’ll get fatigued and your score will start to plateau. In order to give yourself the option to retake the test, it is always wise to choose a first testing date that is earlier than you need. That way, if you decide you’d like to retake the test, you won’t miss any deadlines.

How Do I Send My Scores to Colleges?
When you sign up for the SAT, you can select which schools you’d like to receive your scores. You can also do this after taking the SAT by logging onto your account on the College Board website. If you have taken the SAT more than once, some schools
allow you to use the College Board’s “Score Choice” program, which allows you to choose the test results you would like to report to schools.

However, there are schools that request applicants to send the results of every SAT test they have taken. Even so, most schools have a policy of only considering your highest scores. You can see how your prospective schools consider your scores by visiting their admissions websites.
Question Types
Part 2

Information and Ideas

Explicit Meaning
Explicit Meaning questions ask about something stated directly in the passage. Incorrect answers will be something not stated or supported in the text, or that contradict something stated directly in the passage.

This passage is adapted from “How Making Fun Weekend Plans Can Actually Ruin Your Weekend” by Selin Malkoc. ©2016 by Selin Malkoc. [History & Social Studies]

Across thirteen studies, we found that the simple act of scheduling makes otherwise fun tasks feel more like work. It also decreases how much we enjoy them.

We think that it has to do with how scheduling structures time. Scheduling, at its core, is about allocating time to activities. There are set beginning and end points.

Such strict scheduling, however, is at odds with people’s perceptions of leisure and relaxation, which are associated with unconstrained freedom.

On the flip side, structured time is associated with work activities. Meetings start and end at specific times; deadlines loom; the specter of the clock is omnipresent. So when your weekend is structured and planned, even if the activities are fun, they start to take on some of the qualities we tend to associate with work.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>According to the passage, the act of scheduling activities</td>
<td>The correct answer is (C), as the passage indicates that “the simple act of scheduling makes otherwise fun tasks feel more like work.” It also states that scheduling is “at odds with people’s perceptions of leisure and relaxation.” (A) is incorrect because the passage indicates that scheduling makes the activity less enjoyable. (B) is incorrect because the passage does not indicate anything about a sense of expectation. (D) is incorrect because the passage does not discuss when scheduling is worthwhile.</td>
</tr>
<tr>
<td>A) makes the activities more enjoyable.</td>
<td></td>
</tr>
<tr>
<td>B) fosters a sense of expectation.</td>
<td></td>
</tr>
<tr>
<td>C) makes them feel more like work.</td>
<td></td>
</tr>
<tr>
<td>D) is only worthwhile if the activities are fun.</td>
<td></td>
</tr>
</tbody>
</table>
Implicit Meaning

Implicit Meaning questions ask about ideas that are implied but not stated directly. Read between the lines and combine clues from different parts of the text to understand what the author is suggesting. Incorrect answers will not be supported by enough information from the passage.

---

This passage is adapted from *Lay Down Your Arms!* by Bertha Von Suttner. First published in 1889. [Literature]

Several days passed without me seeing Tilling again. Every evening, I went to the theatre, and from thence to a party, expecting and hoping to meet him, but in vain.

My reception day brought me many visitors, but, of course, not him. But I did not expect him. It was not like him, after his decisive “You really must not expect from me, countess,” to present himself after all at my house on a day of the kind. I had offended him that evening—that was certain; and he avoided meeting me again—that was clear. Only, what could I do? I was all on fire to see him again, to make amends for my rudeness on the former occasion, and get another hour of a talk such as I had had at my father’s—an hour’s talk the delight of which would now be increased to me an hundredfold by the consciousness, which had now become plain to me, of my love.

---

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>The passage most strongly suggests that:</td>
<td>The correct answer is (C), as the passage states that the main character had become conscious of her love and that she was “on fire to see him again.” Therefore, it is reasonable to conclude that she had fallen in love with Tilling sometime since their last encounter. (A) is incorrect because there is insufficient evidence to conclude that their last meeting was their first. (B) is incorrect because the passage does not indicate that Tilling was a friend of the main character’s father, only that they had last spoken at the father’s house. (D) is incorrect because the passage nowhere indicates that they were former enemies.</td>
</tr>
<tr>
<td>A) the main character had only met Tilling once before.</td>
<td></td>
</tr>
<tr>
<td>B) Tilling was a friend of the main character’s father.</td>
<td></td>
</tr>
<tr>
<td>C) the main character had recently fallen in love with Tilling.</td>
<td></td>
</tr>
<tr>
<td>D) Tilling and the main character were former enemies.</td>
<td></td>
</tr>
</tbody>
</table>
Adjective, Adverb, and Conjunction Rules

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjective</td>
<td>A word that adds descriptive information to a noun</td>
<td>Blue tokens are worth more than red tokens.</td>
</tr>
<tr>
<td>Adverb</td>
<td>A word that adds descriptive information to a verb, an adjective, or another adverb</td>
<td>Miguel sprinted very well, but Priya’s lead was too big, so she still won the race.</td>
</tr>
<tr>
<td>Conjunctive Adverb</td>
<td>An adverb that links ideas by expressing the relationship between them</td>
<td>The bank offers a credit card with generous cash-back deals. However, the card also has high service fees.</td>
</tr>
<tr>
<td>Conjunction</td>
<td>A word that joins (or “conjoins”) words, phrases, or clauses</td>
<td>We had pizza and cake at the birthday party, but we forgot the fruits and vegetables.</td>
</tr>
</tbody>
</table>

Memorize the coordinating conjunctions. You can use the acronym FANBOYS to help you remember them.

For, And, Nor, But, Or, Yet, So = FANBOYS

Coordinating conjunctions should always be preceded by a comma when they are used to connect independent clauses, but a coordinating conjunction should not be preceded by a comma when it connects two words or phrases rather than whole clauses.

The government is empowered to conduct warranted searches but it is also restrained from conducting unreasonable searches. No government official may search your person, or, your possessions unless there is a reasonable basis for the search.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) NO CHANGE</td>
<td>The correct answer is (D). The words that come after “but” form an independent clause, with “it” as the subject and “is” as the main verb. A comma is therefore needed before “but,” and we can eliminate (A) and (C). There’s no reason to put a comma before “also” in this sentence, so we can also eliminate (B).</td>
</tr>
<tr>
<td>B) searches, but it is, also</td>
<td></td>
</tr>
<tr>
<td>C) searches but, it is also</td>
<td></td>
</tr>
<tr>
<td>D) searches, but it is also</td>
<td></td>
</tr>
</tbody>
</table>

A) NO CHANGE
B) person or
C) person, or
D) person; or

The correct answer is (B). The conjunctive “or” serves to connect two words: “person” and “possessions.” Neither of these words makes a whole clause, so no comma is needed. (A) and (C) are both incorrect because they insert unnecessary commas. (D) is incorrect because it unnecessarily inserts a semicolon.
Memorize the most common conjunctive adverbs.

also, besides, finally, however, indeed, instead, next, otherwise, still, then, further, likewise, moreover, thus

Be careful not to confuse conjunctive adverbs with conjunctions: conjunctive adverbs describe the connections between ideas, but they cannot be used alone to connect independent clauses. They can be the first word of new sentences, or they can be used at the beginning of an independent clause that is connected to the preceding clause by a colon or semicolon.

Tokyo’s population is about 50% larger than the population of New York City, however New York City occupies a much smaller area, so it has a higher population density than Tokyo.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) NO CHANGE</td>
<td>The correct answer is (D). “However” is being used as a conjunctive adverb in this context: it tells you about the logical relationship between the two sentences but doesn’t connect them in the same way that a conjunction does. (A) is incorrect because it incorrectly treats “however” like a coordinating conjunction by using it to connect two independent clauses. (B) repeats the error but changes the placement of the comma. (C) sets the adverb “however” off as though it were a sentence, creating a sentence fragment.</td>
</tr>
<tr>
<td>B) New York City however, New York City</td>
<td></td>
</tr>
<tr>
<td>C) New York City. However. New York City</td>
<td></td>
</tr>
<tr>
<td>D) New York City. However, New York City</td>
<td></td>
</tr>
</tbody>
</table>

After the Revolutionary War, some called for George Washington to become the King of our young nation; instead, he resigned his post and retired to civilian life.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>A) NO CHANGE</td>
<td>The correct answer is (A). “Instead,” like “however,” is a conjunctive adverb—not a conjunction. It therefore cannot be used to connect two sentences with only a comma. (B) and (D) use only commas, while (C) uses no punctuation at all.</td>
</tr>
<tr>
<td>B) nation, instead,</td>
<td></td>
</tr>
<tr>
<td>C) nation instead</td>
<td></td>
</tr>
<tr>
<td>D) nation instead,</td>
<td></td>
</tr>
</tbody>
</table>
Exponential, Rational, and Radical Equations

Exponential, rational, and radical equations can also be quickly solved if you are clear on their basic principles and how to manipulate them.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exponential Equation</td>
<td>An equation with a variable as part of an exponent</td>
<td>$3^x = 27$</td>
</tr>
<tr>
<td>Rational Equation</td>
<td>An equation with a variable as part of a rational expression</td>
<td>$\frac{15}{2x - 1} = -3$</td>
</tr>
<tr>
<td>Radical Equation</td>
<td>An equation with a variable under a radical</td>
<td>$\sqrt{x + 2} = 4$</td>
</tr>
</tbody>
</table>

Below is a list of helpful tricks to use when working with these equations. These techniques will help you manipulate these equations until they are in the form you want.

<table>
<thead>
<tr>
<th>Concept</th>
<th>Rule</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiplying Expressions with the Same Base</td>
<td>Add the exponents. If they have a different base, first convert the terms to the same base.</td>
<td>$(2^x)(2^{x+1}) = 2^{2x+1}$</td>
</tr>
<tr>
<td>Dividing Expressions with the Same Base</td>
<td>Subtract the exponents. In general, $x^{-a} = \frac{1}{x^a}$</td>
<td>$\frac{3^{3x}}{3^x} = 3^{2x}$</td>
</tr>
<tr>
<td>Taking the Exponent of an Exponent</td>
<td>Multiply the exponents.</td>
<td>$(2^x)^5 = 2^{5x}$</td>
</tr>
<tr>
<td>Multiplying Radicals</td>
<td>Multiply all terms under the radicals.</td>
<td>$\sqrt{a} \times \sqrt{b} = \sqrt{ab}$</td>
</tr>
<tr>
<td>Equality of Expressions with the Same Base</td>
<td>When two expressions with the same base are equal, this means that their exponents must be equal.</td>
<td>$3^x = 3^7$ Therefore, $x = 7$.</td>
</tr>
<tr>
<td>Eliminating a Radical in an Equation</td>
<td>Square both sides of an equation to eliminate the radical. Make sure to isolate the radical first.</td>
<td>$\sqrt{x - 4} = 5$ $x - 4 = 25$</td>
</tr>
<tr>
<td>Checking Extraneous Solutions</td>
<td>When solving a rational or radical equation, always check your solutions by substituting them into the original equation.</td>
<td>$\frac{6x - 6}{x - 1} = 0$ $x = 1$ is not a solution because it makes the denominator 0. This equation has no solution.</td>
</tr>
</tbody>
</table>
If $4^{2x+3} = 2^x 2^{4x}$, what is the value of $x$?

The correct answer is 6. You can use many of the exponent rules discussed above to manipulate this equation as follows:

\[
\begin{align*}
4^{2x+3} &= 2^x 2^{4x} \\
(2^2)^{2x+3} &= 2^x 2^{4x} \\
2^{4x+6} &= 2^{5x} \\
4x + 6 &= 5x \\
x &= 6
\end{align*}
\]

If $2\sqrt{x+8} - 4 = x + 1$, what is the value of $x$?

The correct answer is 1. You can rearrange this equation so the radical is alone on the left side, and then square both sides, as follows:

\[
\begin{align*}
2\sqrt{x+8} &= x + 5 \\
4(x+8) &= x^2 + 10x + 25 \\
x^2 + 6x - 7 &= 0 \\
x &= -7 \text{ or } x = 1
\end{align*}
\]

Remember to check your answers by plugging them back into the original equation.

Check: $2\sqrt{-7+8} - 4 = -7 + 1$

Check: $2\sqrt{1+8} - 4 = 1 + 1$

Therefore, the only solution is $x = 1$.

Applications of Functions

The functions discussed in this chapter have several real-world applications. In this section you’ll get a look at applications of quadratic and exponential functions that you might see on the SAT. Below is a table of some useful things to remember about how to interpret the equations of various functions:

<table>
<thead>
<tr>
<th>Concept</th>
<th>Algebraic/Graphical Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The $x$-value(s) when a quantity being modeled by a quadratic equation (e.g. height) is equal to 0.</td>
<td>The solution(s) for $x$ when the quadratic is set equal to 0. These are the $x$-intercept(s) of the graph.</td>
</tr>
<tr>
<td>The value of a quantity being modeled by a quadratic when the $x$-value (e.g. time) is equal to 0.</td>
<td>The solution for $y$ when $x = 0$. This is the $y$-intercept of the graph.</td>
</tr>
<tr>
<td>The initial amount of a quantity (e.g. population) being modeled by an exponential equation</td>
<td>The value of $a$ when $y = a(r)^x$. This is the $y$-intercept of the graph.</td>
</tr>
<tr>
<td>The growth factor of a quantity being modeled by an exponential equation</td>
<td>The value of $r$ when $y = a(r)^x$.</td>
</tr>
<tr>
<td>The number of times a quantity changes by the growth factor during one unit of time, $x$, in an exponential equation</td>
<td>The value of $t$ when $y = a(r)^x$.</td>
</tr>
</tbody>
</table>
Interpreting Data

In some cases, you will need to use data in the chart or graph to find information that is not part of the data you are given. You will have to do calculations with the data you are given or make estimates and predictions based on data or trends.

Based on the graph above, what is a reasonable prediction for the number of phones sold by Samsung in 2015?

A) 200 million  
B) 450 million  
C) 500 million  
D) 550 million

The correct answer is (D). Every two years from 2009 to 2013, Samsung sold approximately 100 million more phones. Since Samsung sold approximately 450 million phones in 2013, it is reasonable to infer that 550 million phones would be sold in 2015.

Modeling Data

You can use samples of data to make predictions about larger populations or groups. The accuracy of these estimates depends on properties of the sample data, such as size, and on the selection process. In order to make an estimate for a population based on sample data, you treat the sample data as proportional to the entire population. This allows you to use proportions and percentages to make estimates for the whole population.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scatterplot</td>
<td>A graph of two variables compared against each other</td>
<td></td>
</tr>
<tr>
<td>Trend Line or Line of Best Fit</td>
<td>A line that best approximates all the scatterplot data</td>
<td></td>
</tr>
</tbody>
</table>
Essential Techniques

When researchers collect data, they look for relationships between different variables. One way to find trends in data is to create a scatterplot. Scatterplots are the most common means of analysis because they allow you to easily see trends. The trend is rarely a perfect line or curve, but you can model data through an equation that will approximate these data. Modeling data allows you to find an equation for the relationship between two pieces of information and to make estimates or predictions. The Math Test will mostly feature linear models, but they could also be quadratic, polynomial, exponential, or anything else.

A trend line should be as close to all the points as possible, but it does not have to pass through all—or any—of the actual data points. You can calculate the equation of the trend line by using two points on the line. Remember not to use the experimental data/real data points unless they fall exactly on the trend line.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature (°C)</td>
<td>20 24 28 32 36 40</td>
</tr>
<tr>
<td>Reaction Time (s)</td>
<td>13.5 11 7.9 3.6 2.1 1.3</td>
</tr>
</tbody>
</table>

A chemist measures the reaction time of an experiment at different temperatures. The results are summarized in the chart above. If the chemist displays these data in a scatterplot, what is true about the slope of the trend line?

A) It is positive  
B) It is negative  
C) It is zero  
D) Not enough information given  

The correct answer is (B). You can see that as temperature increases, reaction time decreases. Therefore, the slope of the trend line would be negative.

Data Collection Methods

Researchers look at samples of populations to determine trends or information for the populations as a whole. The Math Test will test whether you understand this process and a few of the potential issues that arise when data is sampled.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
</table>
| Population | An entire pool of individuals from which a sample can be drawn | All the people in a town make up the population of people in the town.  
All of the deer in a forest make up the population of deer in the forest. |
| Sample | A part of a population which is used to represent the population | 25% of the people in a town make up a sample of the population in this town.  
15% of the deer in a forest make up a sample of the population of deer in this forest. |
Questions 1-10 are based on the following passage.

This passage is adapted from Elizabeth Evitts Dickinson, The Last Bullet. ©2015 by Elizabeth Evitts Dickinson.

The Trouble began when Millicent Virginia Dunville failed to post for the 117th Annual Ladies’ Auxiliary Hunt Cup Tea. The Chairwoman of the Social Committee later claimed that Millicent had RSVP’d in the affirmative, but under scrutiny that assertion came into question. No one could put hands on the reply card (and it was so very nice that year, letterpress on 80-pound crème stock with the signature gold grosgrain ribbon).

That Millicent had returned the RSVP card was never in question; she was a stickler for protocol. It was the nature of her reply—carefully inked in her signature blue fountain pen, no doubt—that was at issue. Could she have regretfully declined? In over five decades, Millicent had never missed a Hunt Cup Tea. Not when she was nine months pregnant. Not when she suffered a broken leg from a riding accident. Not during The Unfortunate Incident of ’82, when everyone would have understood her absence. This year, at age seventy-three, Millicent would have surpassed the late Sylvia Smith for the honor of longest running attendee. Bunny Walters was to have presented her with a sterling silver mint julep cup with “M.V.D.” engraved in Old Maryland script.

The seating arrangement further complicated matters. As the recent Past President of the Ladies’ Auxiliary, Millicent was meant to sit with the current officers on the stage at the front of the Green Spring Mansion’s Steeplechase Room. Now, all eyes faced the void.

“Like a missing tooth,” Bunny whispered.

“More like a black eye,” Shelby Burke replied.

Shelby advanced what would become one of several theories that day. Millicent’s absence was a purposeful slight, an act of political power wrangling over the Auxiliary’s bylaws. After tallying their losses at the last Membership Committee meeting—members dying off at an alarming rate; new memberships anemic—Millicent had proposed a rewrite of the rules. Bloodlines, she suggested, should no longer matter for entry into the Ladies’ Auxiliary. “We must evolve or die,” Millicent had said.

“Imagine,” Shelby now said, “watering down standards after 117 years for the sake of warm bodies.”

As the wait staff slid tomato aspic onto Wedgewood plates, Bunny volunteered another hypothesis. Little Sorrel had sidetracked Millicent that day. The three-year-old bay gelding was the favorite in Saturday’s Hunt Cup steeplechase, and Millicent had a financial stake in the horse. Bunny had heard a rumor that Little Sorrel had suffered an
ankle injury practicing the course that morning. “Hit the Number 14 fence,” she said. Millicent must have stayed behind to consult the equine veterinarian.

When pressed to name her source, Bunny objected. “A lady never tells,” she said, which was Bunny’s modus operandi whenever an unsupported theory sprang from her own imagination.

Besides, everyone, particularly Bunny, knew that Millicent cared more for her English hounds and the fox hunt season than she did for the horses and this annual spring steeplechase competition. Once, the otherwise punctilious Millicent had been late to the tea because her prize hound was whelping a litter. Bunny and her driver had agreed to fetch Millicent that day, and after a good wait in the idling car, Bunny had marched around the main house, beyond the guest cottages, to the kennels (ruining her freshly polished riding boots), to find Millicent crouched in the dirt over a whimpering dog, while a perfectly fine vet stood idle.

The ladies at the tea were not alone in wondering about the empty chair. The wait staff also puzzled over Ms. Dunville’s absence. Every year, at the end of the event, she was known for shadowing the Ladies’ Auxiliary Treasurer and slipping the headwaiter an extra envelope of cash to make up for the meager tip. “When you have too much money, it’s easy to forget yourself,” she would say.

After the Earl Grey had been steeped and sipped, the finger sandwiches consumed, and the pastries diligently ignored, the room was electric with another theory. Millicent was not at the tea because Millicent was dead. Women leaned across aisles to confer about the last time Millicent had been seen in public. No one could recall.

It was only as the women slipped on belted trench coats to face the overcast March afternoon that someone finally reached Millicent’s daughter, Evelyn, by phone in New York. Evelyn deflected questions of her mother’s absence with two words: “She’s indisposed.”

The rumor was quickly amended. Millicent Dunville was not dead, but she was most certainly dying.

Which choice best summarizes the passage?
A) The attendees of an event speculate reasons for someone’s absence.
B) A group of friends mock and ridicule a friend behind her back.
C) A distinguished guest skips out on a tea held in her honor.
D) The traditions of the annual Hunt Cup Tea are broken for the first time.

As presented in the passage, Millicent Dunville is best described as
A) friendly and talkative.
B) meticulous and orderly.
C) intimidating and unapproachable.
D) aggressive and narrow-minded.

Which choice provides the best evidence for the answer to the previous question?
A) Lines 10-11 (“That Millicent … protocol”)
B) Lines 35-37 (“Millicent’s absence … bylaws”)
C) Lines 62-65 (“Besides … competition”)
D) Lines 81-82 (“When you … say”)

The passage indicates that Millicent’s absence at the Hunt Cup Tea was surprising because she
A) had RSVP’d in the affirmative.
B) had attended the Tea for fifty consecutive years.
C) was set to present an award that day.
D) was the current President of the Auxiliary.
Which of the following was a proposed theory explaining Millicent’s absence?

A) Millicent was unhappy with the seating arrangement.
B) Millicent was demonstrating her influence over the Membership Committee.
C) Millicent had been injured in a horse-riding accident.
D) Millicent was acting out of disrespect for the wait staff.

The author includes the series of sentences in lines 16-20 (“Not when … absence”) most likely to

A) demonstrate that Millicent was no longer concerned with her attendance record at the Hunt Cup Tea.
B) characterize Millicent as uncompromising about all aspects of the Ladies’ Auxiliary.
C) show that Millicent had consistently maintained a full schedule throughout her life.
D) contrast the current situation to past ones when her absence would have been more understandable.

As used in line 34, “advanced” most nearly means

A) accelerated.
B) achieved.
C) introduced.
D) improved.

As used in line 85, “diligently ignored” most nearly means

A) accidentally overlooked.
B) unsympathetically shunned.
C) thoughtfully disregarded.
D) intentionally resisted.
Questions 23-33 are based on the following passage.

The Pressing Need for Clinical Psychologists

Clinical psychologists study, diagnose, and treat mental illnesses. Their work is vital given the high rates of mental illness among adolescents and adults. We need to train more psychologists to research mental illness and provide therapy to patients.

Mental illness is common in the United States. In 2012, the National Institutes of Mental Health estimated that almost 20% of adults in the US were diagnosed with a mental illness. Anxiety disorders, which involve excessive stressing out about stuff, were the most common. Other relatively common illnesses were attention-deficit hyperactivity disorder (ADHD), which involves difficulties focusing, and major depression, which saps the mood and energy of its sufferers.

If more students became a psychologist, we would be better able to explore fundamental questions about mental health in our society. For instance, more people are diagnosed with mental illnesses today than in the past, and researchers are currently unsure whether mental illness is becoming more common or clinical psychologists are simply more likely to spot it. It will take broad studies of the population to address that question.

Without a doubt, we do not know the root causes and biological underpinnings of many disorders. To develop fuller understandings of these disorders, we will need studies of the gene’s and brain’s of people with mental illness.
Some mental illnesses can be treated with medications, such as antidepressants for depression and stimulants for ADHD, but there are patients for whom it does not work perfectly. Therapy is a vital part of recovery for these people. Even for patients who respond well to medication, regular therapy can help develop coping skills and avoid relapse. The availability of psychologists who can meet with patients to deliver therapy are vital to addressing the serious public health challenge of mental illness.

The writer would like to insert a sentence here to help establish the main idea of the paragraph. Which choice most effectively conveys the main topic of this paragraph?

A) Though the causes of mental illnesses are not well understood, psychologists have found that many are at least partially heritable.
B) The Internet has helped people with mental illnesses form communities to support one another.
C) More psychologists are also needed to provide treatment for mental illnesses.
D) Unfortunately, mental illness is sometimes stigmatized in American society.

A) NO CHANGE
B) they do
C) which does
D) they does

A) NO CHANGE
B) were
C) is
D) are going to be
Clinical psychologists have a high level of education. Most states \textit{ordain} that clinical psychologists have at least a Master’s degree, but most practicing clinical psychologists have a Doctorate degree in Psychology.

Clinical psychologists tend to make \textit{much less} than other workers with Master’s or Doctorate degrees. However, like most professionals with such a high level of education, clinical psychologists are quite well-paid when compared with the median American worker, thus those who pursue the career can look forward not only to making a positive difference in the lives of patients, but also to being relatively well-paid for their work.

Which choice most accurately and effectively represents the information in the graph?

A) NO CHANGE
B) only the same amount as the typical worker with a Doctorate degree.
C) somewhat less than the average worker with a Master’s degree.
D) somewhat less than the typical worker with a Doctorate degree.

A) NO CHANGE
B) worker, those
C) worker, thus those
D) worker. Thus, those
9

\[ 8x + y = 2y + 4x \]

If \(2y + 4x = 36\), what is the value of \(x + y\), according to the equation above?

A) 3
B) 10
C) 12
D) 15

11

\[ \frac{(x^2 - 1)(x - 1)}{x + 1} \]

If \(x\) is positive, which of the following is equivalent to the expression above?

A) \(x^2 - 1\)
B) \((x - 1)^2\)
C) \((x + 1)^2\)
D) \(x^2 + 1\)

10

Niki is a test driver for an automobile manufacturer. Each morning, he receives a list of cars to test drive. The number of cars he has left to test drive at the end of each day can be modeled with the equation \(C = 15 - 2h\), where \(C\) is the number of cars left and \(h\) is the number of hours he has worked that day. What is the meaning of the value 2 in this equation?

A) Niki starts each day with 2 cars to test drive.
B) Niki test drives cars at a rate of 2 per hour.
C) Niki test drives cars at a rate of one every 2 hours.
D) Niki cannot work more than 2 hours per day.

12

\[ f(x) = c(x - 3)(x + 3) \]

In the quadratic equation above, \(c\) is a nonzero constant. The graph of the equation in the \(xy\)-plane is a parabola with a vertex \((h, k)\), where \(k = -18\). Which of the following is equal to \(c\)?

A) \(-2\)
B) 2
C) 3
D) 6
13
\[
\frac{-28x^2 + 20x + 19}{ax} = 7x - 5 + \frac{19}{ax}
\]

The equation above is true for all values of \( x \neq 0 \), where \( a \) is a constant. What is the value of \( a \)?

A) 7  
B) 5  
C) 4  
D) –4

14
If the square of a negative number is decreased by 14, the result is five times the original number. What is the original number?

A) –2  
B) –4  
C) –5  
D) –7

15
A landscape architect is creating four identical circular gardens so that each circular garden is touching two other gardens, as shown in the figure above. Each circular garden has an area of \( \pi \). If these gardens are all located at an equal distance from the center of the shaded region between them, what is the area of this shaded region between the gardens?

A) \( 64 - \pi \)  
B) \( 4 - \pi \)  
C) \( \pi \)  
D) \( 2 + \pi \)
Questions 22 and 23 refer to the following information.

<table>
<thead>
<tr>
<th>Monthly Rent for the Year 2009</th>
<th>U.S.</th>
<th>Northeast</th>
<th>Midwest</th>
<th>South</th>
<th>West</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $950</td>
<td>57,400</td>
<td>2,700</td>
<td>10,200</td>
<td>35,700</td>
<td>8,800</td>
</tr>
<tr>
<td>$950 to $1,049</td>
<td>22,400</td>
<td>400</td>
<td>2,900</td>
<td>15,100</td>
<td>4,000</td>
</tr>
<tr>
<td>$1,050 to $1,149</td>
<td>13,300</td>
<td>1,100</td>
<td>1,000</td>
<td>7,300</td>
<td>3,900</td>
</tr>
<tr>
<td>$1,150 to $1,249</td>
<td>16,700</td>
<td>800</td>
<td>700</td>
<td>10,200</td>
<td>5,000</td>
</tr>
<tr>
<td>$1,250 to $1,349</td>
<td>53,200</td>
<td>5,000</td>
<td>2,500</td>
<td>25,000</td>
<td>20,700</td>
</tr>
<tr>
<td>Median Monthly Rent (dollars)</td>
<td>1,063</td>
<td>1,250</td>
<td>857</td>
<td>1,022</td>
<td>1,240</td>
</tr>
<tr>
<td>Total Apartments Rented (1000s)</td>
<td>163,000</td>
<td>10,000</td>
<td>17,200</td>
<td>93,300</td>
<td>42,400</td>
</tr>
</tbody>
</table>

The table above shows the number of new apartments that were completed and rented in a 3-month period in 2009 based on regional geographic location.

22. A tenant paid $1,200 per month for an apartment in the South in 2009. If this tenant moved from the South to the Midwest and paid the median monthly rate for that region as given in the table above, how much did the tenant save in annual rental costs?

   A) $343
   B) $1,686
   C) $3,255
   D) $4,116

23. Which of the following statements is true for the year 2009?

   A) The median rent for completed apartments in the U.S. is less than the median rent for these apartments in the Midwest.
   B) At least 50 percent of the newly completed apartments rented in the South cost less than the U.S. median for newly completed apartments.
   C) Apartments that cost between $1,050 and $1,149 per month make up a greater percentage of newly constructed apartments in the West than they do in the Northeast.
   D) The South was the most expensive region in which to rent apartments in the U.S., and the Midwest was the least expensive region in which to rent apartments.
Which of the following linear functions intersects the point \((a, b)\), where \(a\) and \(b\) satisfy the system of equations above?

A) \(f(x) = 5x - 4\)
B) \(f(x) = 2x + 1\)
C) \(f(x) = -2x + 3\)
D) \(f(x) = \frac{1}{5}(x - 6)\)

Jenish has a cylindrical paint can with a height of 10 inches and a diameter of 10 inches. If one cubic inch of paint can cover one square meter of wall, approximately how many square meters of wall space can Jenish cover with a full can of paint?

A) 250
B) 700
C) 785
D) 800

A bowl contains apples and oranges. After 6 oranges are eaten, there are 3 times as many apples as oranges. A short time later, 11 apples are eaten, after which there are 4 times as many oranges as apples. How many oranges were originally in the bowl?

A) 4
B) 10
C) 11
D) 12

A jacket is on sale for 20% off. Jamie gets a membership discount of an additional 10% off the sale price and pays 8% tax on the price after the discounts. If Jamie pays $85.73 in total, what was the original price of the jacket, to the nearest cent?

A) $102.53
B) $104.11
C) $110.25
D) $113.40
The graph above shows the pollination rate of plants in a certain forested area. Based on the line of best fit, what is the average annual increase in the pollination rate?

A) 5%
B) 3.8%
C) 2.5%
D) 1.5%

If the graph of a linear function passes through (2, 2) and (4, 6), which of the following is an expression of the function?

A) \( f(x) = -2x + 2 \)
B) \( f(x) = -2x - 2 \)
C) \( f(x) = 2x + 2 \)
D) \( f(x) = 2x - 2 \)

Ellie starts walking from her house toward her school, six miles away. She walks at three miles per hour. Her sister will leave the house on a bike, heading toward the school at nine miles per hour. How many minutes after Ellie should her sister leave so that they get to school at the same time?

A) 20
B) 40
C) 60
D) 80

Which of the following is a solution to \( 2x^2 + 9x + 7 = 0 \)?

A) \( -\frac{9}{2} \)
B) \(-1\)
C) 0
D) \( \frac{9}{2} \)
Questions 19 and 20 refer to the following information.

A hockey team plays 30 games in a season. Their goal differential was recorded for each game, and that data is displayed on the histogram below. (Goal differential = goals scored – goals against.)

![Histogram of Goal Differentials](image)

19. What is the team’s goal differential for the entire season?
   A) 0  
   B) 11  
   C) 13  
   D) 19

20. What percentage of its games did the team win, to the nearest tenth of a percent?
   A) 50.0%  
   B) 56.7%  
   C) 63.3%  
   D) 69.3%

21. \(y = -x^2 - 4x + 12\)

The shape of an arch is given by the equation above. The ground is where \(y = 0\). What is the distance between the two places where the arch touches the ground?
   A) 2  
   B) 6  
   C) 8  
   D) 12

22. \(-2y = 3x + 5\)
   \(4y + kx = 4\)

In the system of equations above, \(k\) is a constant. If the system has no solution, what is the value of \(k\)?
   A) 4  
   B) 5  
   C) 6  
   D) 7
As you read the passage below, consider how Jamie T. Mullins uses

- evidence, such as facts or examples, to support claims.
- reasoning to develop ideas and to connect claims and evidence.
- stylistic or persuasive elements, such as word choice or appeals to emotion, to add power to the ideas expressed.


1 Asthma is a chronic respiratory condition with no known cure. It impacts people of all ages through episodic constrictions of the airways, which may be even worse than it sounds. Approximately 334 million people worldwide suffer from asthma, including 24 million Americans and 5.4 million residents of the U.K., and the average annual cost of each case has been estimated to be between $2,300 and $4,000.

2 In a recent study, my coauthors and I used an unexpected exposure to a major air pollution event—the Great London Smog of 1952—to demonstrate that air pollution exposure in early life leads to higher incidence of asthma during both childhood and adulthood. While London’s air is much cleaner today than it was 60 years ago, our findings have major implications for the many countries that continue to struggle with high levels of urban air pollution.

3 The Great Smog took place in London over five days in early December 1952. During that time, a layer of warm air settled over the city, trapping colder air near ground level. The cold air drove Londoners to pile coal on their fires to keep warm, and the upper layer of warm air trapped the resulting smoke near the ground where it mixed with a heavy fog.

4 Ultimately, some 3,000 to 4,000 “extra” deaths—that is, deaths above the normal rates, which are attributed to the abnormal conditions—occurred during the Great Smog. Approximately 8,000 more cardiac and respiratory deaths over the next several months have also been linked to the smog. The toll of the Great Smog was so large that it ultimately served as a major impetus for the passage of the 1956 and 1968 U.K. Clean Air Acts.

5 In our analysis, we found that people who were exposed to the Great Smog during the first year of life were four to five times more likely to develop asthma as a child and three times more likely to report asthma as an adult, compared to baseline rates. We also found evidence suggesting that children who were exposed to the Great Smog in utero suffered twice the normal rate of childhood asthma. Our results indicate that early exposure to air pollution has significant long-term impacts on health, and contributes to the development of asthma.

6 Our results suggest that reducing exposure to extreme air pollution events, especially among the young, may be an effective means of combating the initial development of asthma. By improving air quality and protecting young children from air pollution, policy makers and doctor-parent teams may be able to meaningfully reduce the likelihood of asthma in individual children and the incidence of asthma in the population as a whole.

7 Our findings also dramatically illustrate the long-term effects of air pollution exposure. While there is a strong consensus that exposure to air pollution negatively affects health, our work presents some of the
first evidence that such exposure has lifelong consequences. The London Smog took place more than 60 years ago, but some of those that lived through it are still feeling its impacts today.

8 Such long-term effects have ominous implications for the millions of people around the world who are exposed regularly to extreme air pollution. In a recent article, Douglas Dockery and Arden Pope—two of the foremost researchers on air pollution and health—noted that conditions during a 2013 air pollution event in Harbin, China were “remarkably similar to those from London during the 1952 Great Smog.”

9 Unfortunately, such extreme air pollution is both a widespread and growing problem. Beijing suffered some of its worst recorded air pollution at the end of 2015. And for all of the attention that air quality in China has received since the Beijing Olympics, none of its cities even makes the list of the top 20 most polluted in the world. Much of the urban population in emerging Asia, the Middle East and Africa regularly face more extreme levels of air pollution. Our results suggest that the negative health impacts of these exposures will last for many years to come.

Write an essay in which you explain how Jamie T. Mullins builds an argument to persuade his audience that air pollution is a serious problem with severe impacts on human health. In your essay, analyze how Mullins uses one or more of the features listed in the directions on the previous page (or features of your own choice) to strengthen the logic and persuasiveness of his argument. Be sure that your analysis focuses on the most relevant features of the passage.

Your essay should not explain whether you agree with Mullins’s claims, but rather explain how Mullins builds an argument to persuade his audience.
The Scoring System
Part 2

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

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

<table>
<thead>
<tr>
<th>SAT Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Scores (10 to 40)</td>
</tr>
<tr>
<td>• Reading Test</td>
</tr>
<tr>
<td>• Writing and Language Test</td>
</tr>
<tr>
<td>• Math Test</td>
</tr>
<tr>
<td>Area Scores (200 to 800)</td>
</tr>
<tr>
<td>• Evidence-Based Reading and Writing</td>
</tr>
<tr>
<td>• Math</td>
</tr>
<tr>
<td>Composite Score (400 to 1600)</td>
</tr>
<tr>
<td>• Math (Area Score) + Evidence-Based Reading and Writing (Area Score)</td>
</tr>
<tr>
<td>Essay Scores (1 to 4)</td>
</tr>
<tr>
<td>• Reading</td>
</tr>
<tr>
<td>• Analysis</td>
</tr>
<tr>
<td>• Writing</td>
</tr>
</tbody>
</table>

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

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

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

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

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

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

For live scoring and scaling, please visit [cloud.ivyglobal.com](http://cloud.ivyglobal.com).