SAT First

Test blanc SAT n°1
sujet et corrigé

Un SAT blanc complet au format du SAT numérique, à imprimer. Questions originales écrites par SAT First, corrigé détaillé en français.

FORMAT
98 questions en 4 modules

DURÉE
2 h 14, plus une pause de 10 minutes

READING AND WRITING
54 questions, 64 minutes

MATH
44 questions, 70 minutes

Version en ligne avec chronomètre et score estimé : preparation-sat.fr/test-blanc-sat/
Une question sur votre préparation ? 09 78 45 00 08

Avant de commencer

Conditions du jour du test

Le vrai SAT se passe sur ordinateur, dans l'application Bluebook du College Board. Ce sujet en reprend la structure : deux modules de Reading and Writing, une pause de 10 minutes, puis deux modules de Math. Respectez le temps de chaque module et notez vos réponses sur la grille en fin de sujet.

> Au vrai SAT, le second module de chaque section s'adapte à vos résultats au premier. Ce n'est pas le cas ici. Le score que vous obtiendrez est donc une estimation.

Questions à réponse libre (Math)

Certaines questions de Math n'ont pas de choix proposés : écrivez votre réponse. Une fraction ou un nombre décimal sont acceptés, sans unité.

Formules (rappelées dans Bluebook le jour du test)

- Cercle : $A = \pi r^2$, $C = 2\pi r$
- Rectangle : $A = \ell w$; triangle : $A = (1/2)bh$
- Pythagore : $c^2 = a^2 + b^2$
- Triangles 30°, 60°, 90° : x, $x\sqrt{3}$, $2x$; 45°, 45°, 90° : s, s, $s\sqrt{2}$
- Pavé : $V = \ell wh$; cylindre : $V = \pi r^2 h$; sphère : $V = (4/3)\pi r^3$
- Cône : $V = (1/3)\pi r^2 h$; pyramide : $V = (1/3)\ell wh$
- Un cercle mesure 360°, soit 2π radians ; la somme des angles d'un triangle vaut 180°.

Reading and Writing, module 1

27 questions, 32 minutes

Question 1

Botanist Ynes Mexía did not begin collecting plants until she was in her fifties, yet her work was remarkably _____ : over thirteen years of fieldwork in Mexico and South America, she gathered roughly 145,000 specimens.

Which choice completes the text with the most logical and precise word or phrase?

A fragile
B extensive
C obscure
D uniform

Question 2

The city council's decision to postpone the vote was _____ rather than hasty: members explained that they wanted time to read the engineers' full report before committing public funds to the bridge.

Which choice completes the text with the most logical and precise word or phrase?

A unanimous
B careless
C permanent
D deliberate

Question 3

In her second novel, the author _____ the familiar ghost story. Instead of haunting a house, her spirit haunts a single folk song, passing from one singer to the next across three generations.

Which choice completes the text with the most logical and precise word or phrase?

A imitates
B abandons
C reworks
D ignores

Question 4

Many octopus species can change the color of their skin in a fraction of a second to match their surroundings. Surprisingly, most of these species are thought to be color-blind. Biologists have proposed that light-sensitive proteins found in octopus skin might allow the animals to detect color without relying on their eyes.

Which choice best describes the overall structure of the text?

A It describes an experiment and then explains why its results were rejected.
B It defines a scientific term and then gives several examples of it.
C It compares two species and then argues that one is better camouflaged.
D It presents a puzzling observation and then a possible explanation for it.

Question 5

Historians long assumed that medieval peasants rarely traveled more than a few miles from home. Records kept at pilgrimage sites complicate that picture. At one shrine in northern Spain, registers from the 1300s list visitors from farming villages more than 400 miles away.

Which choice best states the main purpose of the text?

A To compare farming methods in different medieval villages
B To argue that pilgrimage sites were mainly visited by wealthy travelers
C To describe evidence that challenges a common assumption about medieval peasants
D To explain how medieval registers were preserved in Spain

Question 6

Text 1
Some economists argue that remote work reduces productivity because employees lose the informal exchanges that happen in an office.

Text 2
A 2024 study of 1,600 employees at a software company found that working from home raised output on routine, individual tasks but slowed progress on projects that required close collaboration.

Based on the texts, how would the author of Text 2 most likely respond to the claim in Text 1?

A By questioning whether software companies can measure productivity
B By suggesting that the effect of remote work depends on the type of task
C By agreeing that remote work lowers productivity in every situation
D By arguing that informal exchanges have no effect on output

Question 7

Text 1
Scholars have often portrayed the poet Emily Dickinson as a recluse who wrote almost entirely for herself, cut off from any audience.

Text 2
Dickinson's surviving letters show that she sent poems to nearly one hundred correspondents. Some of these readers replied with comments, and she occasionally revised poems after receiving their responses.

Based on the texts, how would the author of Text 2 most likely describe the portrayal in Text 1?

A As correctly explaining why Dickinson published so few poems
B As exaggerating the number of letters Dickinson wrote
C As confusing Dickinson's poems with those of her correspondents
D As overlooking evidence that Dickinson regularly shared her work with readers

Question 8

Cities tend to be warmer than the countryside around them because asphalt and concrete absorb heat during the day and release it at night. In one three-year study, researchers found that buildings covered with green roofs, layers of soil and plants, stayed up to 3°C cooler at roof level in summer than nearby buildings with conventional roofs.

Which choice best states the main idea of the text?

A Toronto is warmer than most other cities in Canada.
B Green roofs can reduce temperatures in a city that is warmer than its surroundings.
C Conventional roofs are cheaper to install than green roofs.
D Asphalt absorbs more heat than any other building material.

Question 9

When the chemist Dana Okafor began studying spider silk, most researchers focused on its strength. Okafor was more interested in how the silk handles water. She showed that some silk threads shrink sharply when they become wet, a property that could be used to design fabrics that tighten or loosen on their own as humidity changes.

Which choice best states the main idea of the text?

A Okafor studied an overlooked property of spider silk that could have practical uses.
B Most researchers believe spider silk cannot be used in fabrics.
C Spider silk loses all of its strength when it becomes wet.
D Okafor proved that spider silk is weaker than researchers had thought.

Question 10

Researcher Lena Ortiz hypothesized that bumblebees prefer flowers that are warmer than the surrounding air, because warm nectar takes less energy for bees to drink.

Which finding, if true, would most directly support Ortiz's hypothesis?

A Bumblebees visited blue flowers more often than yellow flowers.
B Some flowers produce more nectar in the morning than in the evening.
C Bumblebees were most active on warm, sunny afternoons.
D Bumblebees visited heated artificial flowers more often than unheated ones of the same color and shape.

Question 11

In the novel *The Long Field*, Mara is a character who struggles to wait for anything, whether a letter, a harvest or an answer.

Which quotation from the novel most effectively illustrates the claim?

A "Mara checked the mailbox four times before noon, though the carrier never came before three."
B "Mara's brother, unlike her, spent whole afternoons reading by the stove."
C "The field behind the house had been planted with wheat for as long as anyone remembered."
D "Mara knew every name in the village and greeted each neighbor in turn."

Question 12

Average nightly sleep reported by students at one high school

Grade	Hours of sleep
9	8.1
10	7.6
11	7.2
12	6.9

A school nurse argues that students sleep less as they move through high school. In support of this claim, she points out that _____

Which choice most effectively uses data from the table to complete the statement?

A every student in grade 12 slept less than 7 hours.
B students in grade 11 slept more than students in grade 10.
C average sleep fell from 8.1 hours in grade 9 to 6.9 hours in grade 12.
D students in grade 10 slept 7.6 hours on average.

Question 13

Annual rainfall and maize yield at five test farms

Rainfall (mm)	Yield (tons per hectare)
300	2.1
450	3.4
600	4.6
750	4.0
900	3.2

An agronomist concludes that more rain helps maize only up to a point.

Which choice best describes data from the table that support the agronomist's conclusion?

A The farm with 300 mm of rainfall had a yield of 2.1 tons per hectare.
B Yield increased steadily with every increase in rainfall.
C Yield was highest at the farm with 900 mm of rainfall.
D Yield rose as rainfall increased to 600 mm and then declined at higher rainfall levels.

Question 14

A newly discovered fossil was found in rock layers dated to about 120 million years ago. Its skull features closely match those of a group of reptiles that paleontologists had believed first appeared about 90 million years ago. This suggests that _____

Which choice most logically completes the text?

A the group may have originated earlier than scientists had previously thought.
B skull features are not useful for classifying fossils.
C the group of reptiles disappeared about 90 million years ago.
D the rock layers were dated incorrectly by about 30 million years.

Question 15

The city museum reopened in March after two years of _____ new wing displays textiles from West Africa and South Asia.

Which choice completes the text so that it conforms to the conventions of Standard English?

A renovation, its
B renovation, and, its
C renovation its
D renovation; its

Question 16

The 1872 survey team carried three essential _____ a barometer, a compass and a sextant.

Which choice completes the text so that it conforms to the conventions of Standard English?

A instruments;
B instruments, which
C instruments:
D instruments

Question 17

The Harbor Bridge, designed by engineer Sofia _____ completed in 1932 and is still used by about 60,000 vehicles a day.

Which choice completes the text so that it conforms to the conventions of Standard English?

A Lund was
B Lund: was
C Lund; was
D Lund, was

Question 18

The collection of letters written by the two sisters _____ historians a detailed picture of farm life in the 1850s.

Which choice completes the text so that it conforms to the conventions of Standard English?

A gives
B give
C are giving
D have given

Question 19

By the time the rover reached the rim of the crater in 2021, it _____ more than 20 kilometers across the planet's surface.

Which choice completes the text so that it conforms to the conventions of Standard English?

A is traveling
B will travel
C travels
D had traveled

Question 20

After months of fieldwork in the Andes, the two geologists presented _____ findings on glacier retreat at a conference in Lisbon.

Which choice completes the text so that it conforms to the conventions of Standard English?

A its
B it's
C his
D their

Question 21

Having analyzed more than 3,000 soil samples, _____

Which choice completes the text so that it conforms to the conventions of Standard English?

A the research team concluded that the valley had been farmed for centuries.
B it was concluded that the valley had been farmed for centuries.
C centuries of farming in the valley were revealed by the samples.
D the valley was found to have been farmed for centuries.

Question 22

Solar panels become less efficient as they heat up in direct sunlight. _____ engineers are testing coatings that reflect infrared light while letting visible light through.

Which choice completes the text with the most logical transition?

A Similarly,
B For this reason,
C However,
D For example,

Question 23

The first prototype of the drone weighed 4 kilograms and could not stay in the air for more than a minute. _____ the second prototype, built from carbon fiber, weighed less than 2 kilograms.

Which choice completes the text with the most logical transition?

A In addition,
B By contrast,
C As a result,
D Specifically,

Question 24

The village of Santa Elena had no railway connection throughout the nineteenth century. _____ it became the busiest market town in the region, thanks to its position where two river routes met.

Which choice completes the text with the most logical transition?

A For instance,
B Therefore,
C Nevertheless,
D Likewise,

Question 25

While researching a topic, a student has taken the following notes:

- The Taipa Library in Macau was completed in 2023.
- It was designed by architect Mei Lun.
- Its outer walls are made of recycled glass bottles.
- The walls let in natural light during the day.

The student wants to emphasize the material used in the library's walls. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A Mei Lun designed a library that was completed in 2023.
B The Taipa Library in Macau was designed by architect Mei Lun.
C Completed in 2023, the Taipa Library is located in Macau.
D The outer walls of the Taipa Library, completed in 2023, are made of recycled glass bottles.

Question 26

While researching a topic, a student has taken the following notes:

- The blue whale can reach about 30 meters in length.
- The whale shark can reach about 18 meters in length.
- The blue whale is a mammal.
- The whale shark is a fish.

The student wants to compare the lengths of the two animals. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A At about 30 meters, the blue whale can grow roughly 12 meters longer than the whale shark.
B Both the blue whale and the whale shark live in the ocean.
C The whale shark can reach about 18 meters in length.
D The blue whale is a mammal, while the whale shark is a fish.

Question 27

While researching a topic, a student has taken the following notes:

- In 2025, ecologist Rafael Osei studied hedgehogs in 40 English gardens.
- He placed small holes in garden fences.
- Gardens with holes in their fences had twice as many hedgehog visits.
- The holes let hedgehogs travel between gardens to find food.

The student wants to present the study's finding to an audience unfamiliar with it. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A Hedgehogs travel between gardens to find food.

B A 2025 study of 40 English gardens found that cutting small holes in fences, which let hedgehogs move between gardens, doubled hedgehog visits.

C In 2025, holes were placed in garden fences in England.

D Rafael Osei is an ecologist who studied hedgehogs.

Reading and Writing, module 2

27 questions, 32 minutes

Question 28

Critics who had dismissed the composer's early symphonies as derivative were eventually forced to _____ their judgment when newly found sketchbooks showed that she had developed her signature harmonies years before her supposed models.

Which choice completes the text with the most logical and precise word or phrase?

A recant
B reaffirm
C publicize
D anticipate

Question 29

The report's conclusions about household spending in the region are _____ at best: they rest on interviews with only twelve families, all of whom live in the same neighborhood.

Which choice completes the text with the most logical and precise word or phrase?

A tenuous
B redundant
C compelling
D exhaustive

Question 30

Rather than _____ the gaps in the historical record, the biographer marks them openly, telling readers exactly where the evidence ends and where her own speculation begins.

Which choice completes the text with the most logical and precise word or phrase?

A paper over
B point out
C look into
D dwell on

Question 31

For decades, ecologists treated dead trees in managed forests as waste to be removed. A survey of Finnish forests, however, found that nearly a quarter of the region's threatened species depend on decaying wood for food or shelter. Some forest agencies now leave a share of fallen trunks in place, arguing that what once looked like untidiness is in fact a habitat.

Which choice best describes the overall structure of the text?

A It presents a long-held view, describes a finding that undermines it, and notes a resulting change in practice.

B It describes a forest management technique and then lists its economic costs.

C It explains how wood decays and then describes the species that cause decay.

D It compares forests in two countries and then recommends one approach.

Question 32

The painter Clara Vance rarely signed her canvases. For a century, many of her works were attributed to her teacher. Recent analysis of brushwork and pigment, however, has allowed curators to identify at least thirty paintings as hers. These attributions have changed how scholars describe her teacher's career as well, since several of his most praised works now appear to be hers.

Which choice best describes the function of the underlined sentence in the text as a whole?

A It introduces a second painter whose work was misattributed.

B It points out a further consequence of the new attributions described earlier.

C It questions the reliability of the analysis of brushwork and pigment.

D It explains why Vance chose not to sign her canvases.

Question 33

Text 1

Urban planner Ivo Meyer argues that adding bike lanes reduces car traffic. When a city builds a protected network, he says, residents who once drove short distances switch to bicycles.

Text 2

A study of eight European cities found that new bike lanes reduced car traffic only when they connected to form a continuous network. Isolated lanes, even protected ones, had little measurable effect on how people traveled.

Based on the texts, how would the authors of Text 2 most likely respond to Meyer's argument?

A They would agree with it only for cities where the lanes form a connected network.

B They would accept it fully, since protected lanes always change travel habits.

C They would argue that the cost of bike lanes outweighs their benefits.

D They would reject it because bike lanes never reduce car traffic.

Question 34

Text 1
The novelist Joan Arden described her books as purely imagined. In interviews she insisted that none of her characters were based on real people.

Text 2
Letters held by Arden's family reveal that several of her characters share names, jobs and even specific phrases with neighbors from the town where she grew up. The resemblances are too close to be accidental.

Based on the texts, how would the author of Text 2 most likely view Arden's statements in Text 1?

A As proof that Arden never visited her hometown after leaving it
B As consistent with the letters held by her family
C As contradicted by evidence of close links between her characters and real people
D As a sign that Arden's neighbors were unaware of her novels

Question 35

The lighthouse keeper had kept the same log for thirty-one years. Each night he recorded the wind, the passing ships and the hour he lit the lamp. When the light was automated, he was told the log was no longer needed. He kept writing anyway, noting storms that no one would read about, as though the habit itself had become a kind of watch.

Which choice best states the main idea of the text?

A The keeper continues a long routine even after it has lost its official purpose.
B The keeper records only the storms that damage ships.
C The keeper is relieved that the lighthouse no longer needs his attention.
D The keeper writes the log so that others will learn about the lighthouse.

Question 36

Marine biologist Priya Nair hypothesizes that a species of reef fish chooses where to settle by following the sounds produced by healthy coral reefs.

Which finding, if true, would most directly weaken Nair's hypothesis?

A Young fish settled more often near speakers playing recordings of healthy reefs.
B Young fish settled just as often near speakers playing silence as near speakers playing recordings of healthy reefs.
C The fish are found on reefs in several oceans.
D Healthy reefs produce louder sounds than damaged reefs.

Question 37

Some historians claim that the 1903 expansion of the town's library was driven mainly by demand from factory workers rather than by wealthy donors.

Which finding would most directly support the historians' claim?

A Most of the books purchased in 1903 were novels.
B The expanded library included a reading room named after a local banker.
C The library's opening hours were extended in 1910.
D A 1902 petition asking for a larger library was signed by more than 900 factory employees.

Question 38

Share of survey respondents who walk to work, by distance from home to work

Distance	2015	2025
Under 1 km	62%	71%
1 to 3 km	24%	35%
3 to 5 km	9%	10%

A transportation analyst claims that the rise in walking to work between 2015 and 2025 was concentrated among people living within 3 km of their workplace.

Which choice best describes data from the table that support the analyst's claim?

A The share who walk was higher in 2025 than in 2015 for every distance.
B Fewer people walked 3 to 5 km than walked under 1 km in both years.
C The share who walk rose by 9 and 11 percentage points for the two shortest distances but by only 1 point for 3 to 5 km.
D In 2025, 71% of people living under 1 km from work walked there.

Question 39

Germination of tomato seeds stored at different temperatures for one year

Storage temperature	Seeds tested	Seeds that germinated
4°C	200	184
15°C	200	162
25°C	200	118

A seed bank manager concludes that cooler storage helps tomato seeds remain viable.

Which choice most effectively uses data from the table to support the manager's conclusion?

A More than half of the seeds germinated at every temperature.
B 200 seeds were tested at each temperature.
C 162 seeds stored at 15°C germinated.
D 92% of seeds stored at 4°C germinated, compared with 59% of those stored at 25°C.

Question 40

In laboratory tests, a new drought-resistant variety of wheat produced as much grain as standard wheat when water was plentiful, and 30 percent more when water was scarce. Field trials, however, were conducted only in regions with average rainfall. As a result, the field trials _____

Which choice most logically completes the text?

A demonstrate that the variety needs more water than standard wheat.
B may not show the variety's main advantage, which appeared under dry conditions.
C prove that the new variety performs worse than standard wheat in the field.
D show that laboratory tests are always more reliable than field trials.

Question 41

Archaeologists found grains of barley inside cooking pots at a site in Jordan dated to about 11,000 years ago. The grains were smaller and thinner than those of domesticated barley, and no farming tools were found at the site. The researchers concluded that the people living there _____

Which choice most logically completes the text?

A traded farming tools with other settlements.
B did not eat any kind of grain.
C likely gathered wild barley rather than growing it themselves.
D were the first people anywhere to domesticate barley.

Question 42

Marine biologist Ana _____ argues that sharks return to the same feeding grounds each spring.

Which choice completes the text so that it conforms to the conventions of Standard English?

A Ruiz, who spent a decade tagging sharks off the coast of Baja California
B Ruiz who spent a decade tagging sharks off the coast of Baja California,
C Ruiz, who spent a decade tagging sharks off the coast of Baja California,
D Ruiz; who spent a decade tagging sharks off the coast of Baja California;

Question 43

The first clinical trial of the vaccine produced promising _____ the sample, however, included only 48 participants.

Which choice completes the text so that it conforms to the conventions of Standard English?

A results;
B results
C results, and;
D results,

Question 44

Among the objects recovered from the sixteenth-century shipwreck _____ a bronze astrolabe, two ceramic jars and a set of brass weights.

Which choice completes the text so that it conforms to the conventions of Standard English?

A was
B has been
C were
D is

Question 45

The volunteer program trains participants to identify invasive plant species, _____ their locations on a shared map and remove them without damaging native plants.

Which choice completes the text so that it conforms to the conventions of Standard English?

A recording
B recorded
C record
D to have recorded

Question 46

Ornithologists counted the _____ nests along the cliffs each June and found that the colony had nearly doubled since 2010.

Which choice completes the text so that it conforms to the conventions of Standard English?

A puffins
B puffins's
C puffins'
D puffin's

Question 47

Built in 1889 for the World's Fair and once criticized by many Parisian artists, _____

Which choice completes the text so that it conforms to the conventions of Standard English?

A many artists later changed their opinion of the tower.
B the Eiffel Tower now draws millions of visitors a year.
C millions of visitors now come to see the Eiffel Tower each year.
D visitors now climb the Eiffel Tower by the millions.

Question 48

The festival will feature films from Dakar, _____ and Hanoi, Vietnam.

Which choice completes the text so that it conforms to the conventions of Standard English?

A Senegal; Lima, Peru,
B Senegal, Lima; Peru;
C Senegal, Lima, Peru,
D Senegal; Lima, Peru;

Question 49

The committee had expected the new parking fees to reduce traffic in the old town. _____ the number of cars entering the area fell by only 2 percent in the first year, while the number of delivery vans actually rose.

Which choice completes the text with the most logical transition?

A Similarly,
B Moreover,
C Consequently,
D Instead,

Question 50

The new bridge design uses 40 percent less steel than the previous one. _____ it can be built for roughly 15 million dollars less, according to the city's estimate.

Which choice completes the text with the most logical transition?

A By contrast,
B In other words,
C Nevertheless,
D As a result,

Question 51

Few people outside the region had heard of the folk singer before 1965. _____ one recording of her songs, made on a portable tape machine in her kitchen, had been passed among collectors for years.

Which choice completes the text with the most logical transition?

A Thus,
B For this reason,
C Still,
D Finally,

Question 52

While researching a topic, a student has taken the following notes:

- Researchers wanted to know whether city crows recognize individual humans.
- They wore a specific mask while trapping and banding crows.
- Years later, crows scolded people wearing that mask but ignored people wearing other masks.
- The study took place in Seattle.

The student wants to explain how the researchers tested their question. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A The researchers wore a specific mask while trapping crows, then later observed how crows reacted to people wearing that mask or others.

B Crows in Seattle scolded people wearing a specific mask.

C The researchers wanted to know whether crows recognize individual humans.

D The study of crows took place in Seattle.

Question 53

While researching a topic, a student has taken the following notes:

- The Atacama Desert in Chile receives less than 15 mm of rain per year in some areas.
- The Sahara receives about 25 to 100 mm per year in many areas.
- Both deserts are used by astronomers for observatories.

The student wants to contrast the rainfall of the two deserts. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A The Sahara receives some rain each year.

B Both the Atacama and the Sahara are used for observatories.

C The Atacama Desert is located in Chile.

D Parts of the Atacama receive less than 15 mm of rain a year, while much of the Sahara receives 25 to 100 mm.

Question 54

While researching a topic, a student has taken the following notes:

- In 1956, Chien-Shiung Wu and colleagues carried out an experiment on the decay of cobalt-60 atoms.
- Physicists had long assumed that nature does not distinguish between left and right in such processes.
- Wu's results, published in 1957, showed that, in this decay, nature does distinguish between them.

The student wants to emphasize the significance of Wu's results for an audience unfamiliar with physics. Which choice most effectively uses relevant information from the notes to accomplish this goal?

A Wu's experiment, published in 1957, overturned a long-held assumption in physics by showing that nature can distinguish left from right.

B Physicists had long assumed something about left and right.

C Chien-Shiung Wu worked with colleagues on an experiment in 1956.

D The experiment studied the decay of cobalt-60 atoms.

Math, module 1

22 questions, 35 minutes, calculatrice autorisée

Question 55

If 3x + 7 = 22, what is the value of x?

A 7
B 9.7
C 5
D 15

Question 56

A line in the xy-plane has a slope of −2 and crosses the y-axis at (0, 4). Which equation defines this line?

A $y = -2x + 4$
B $y = -2x - 4$
C $y = 2x + 4$
D $y = 4x - 2$

Question 57

$x + y = 10$
$x - y = 4$
If (x, y) is the solution to the system of equations above, what is the value of x?

Réponse : _____

Question 58

Which of the following describes all solutions to $2x - 5 > 9$?

A $x > 2$
B $x < 7$
C $x > 7$
D $x > 14$

Question 59

A taxi charges a fixed fee of $3 plus $2 for each kilometer driven. What is the total cost, in dollars, of an 8-kilometer ride?

Réponse : _____

Question 60

The function f is defined by f(x) = 4x − 3. What is the value of f(5)?

A 23
B 20
C 12
D 17

Question 61

Line k is parallel to the line y = 3x + 1 and passes through the point (2, 5). Which equation defines line k?

A y = 3x − 1
B y = (1/3)x + 5
C y = −3x + 11
D y = 3x + 5

Question 62

A plumber uses the equation C = 50 + 12h to estimate the cost C, in dollars, of a job that takes h hours. What is the best interpretation of 12 in this context?

A The total cost of a job is $12.
B The cost increases by $12 for each additional hour of work.
C The fixed fee for every job is $12.
D The plumber works 12 hours per job.

Question 63

Which expression is equivalent to $(x + 3)^2$?

A $x^2 + 9$
B $x^2 + 6x + 9$
C $x^2 + 3x + 9$
D $x^2 + 6x + 6$

Question 64

What is the sum of the solutions to $x^2 - 5x + 6 = 0$?

Réponse : _____

Question 65

The function g is defined by $g(x) = x^2 - 4$. What is the value of $g(-3)$?

A -13
B 5
C -5
D 13

Question 66

A town had a population of 500 in 2020, and its population doubles every 3 years. Which function gives the population P(t) of the town t years after 2020?

A $P(t) = 500(2)^{t/3}$
B $P(t) = 500(2)^{3t}$
C $P(t) = 500(3)^{t/2}$
D $P(t) = 500 + 2t$

Question 67

Which expression is equivalent to $6x^3 / (2x)$, for $x \neq 0$?

A $12x^4$
B $3x^2$
C $4x^2$
D $3x^3$

Question 68

If $f(x) = 2^x$, what is the value of $f(5)$?

Réponse : _____

Question 69

What are the coordinates of the vertex of the parabola $y = (x - 4)^2 + 1$?

A $(-4, 1)$
B $(4, 1)$
C $(1, 4)$
D $(4, -1)$

Question 70

If $x^2 = 49$ and $x < 0$, what is the value of x?

Réponse : _____

Question 71

What is 30% of 250?

A 75
B 83
C 7.5
D 25

Question 72

What is the mean of the data set 4, 8, 10, 14?

A 8
B 36
C 9
D 10

Question 73

A recipe uses 3 cups of flour for every 2 cups of sugar. How many cups of sugar are needed for 9 cups of flour?

Réponse : _____

Question 74

A rectangle has a length of 8 centimeters and a width of 5 centimeters. What is its area, in square centimeters?

A 80
B 13
C 40
D 26

Question 75

A right triangle has legs of length 6 and 8. What is the length of the hypotenuse?

A √28
B 10
C 14
D 48

Question 76

A circle has a radius of 3. What is the circumference of the circle?

A 6π
B 9π
C 3π
D 12π

Math, module 2

22 questions, 35 minutes, calculatrice autorisée

Question 77

A line in the xy-plane passes through the points (2, 7) and (6, 19). What is the y-intercept of the line?

A 3
B 1
C 7
D −5

Question 78

2x + 3y = 12
4x − y = 10
If (x, y) is the solution to the system of equations above, what is the value of x + y?

Réponse : _____

Question 79

ax + 2y = 5
3x + 6y = 8
In the system of equations above, a is a constant. For which value of a does the system have no solution?

A −1
B 6
C 3
D 1

Question 80

A student has $40 to spend. She buys one calculator for $7 and some notebooks that cost $3 each. What is the greatest number of notebooks she can buy?

Réponse : _____

Question 81

Line m is perpendicular to the line $y = -(1/2)x + 4$ and passes through the point (1, 3). Which equation defines line m?

A $y = 2x + 1$
B $y = 2x + 3$
C $y = (1/2)x + 5/2$
D $y = -2x + 5$

Question 82

For a linear function f, f(2) = 5 and f(6) = 13. What is the value of f(10)?

A 17
B 21
C 25
D 18

Question 83

The temperature T, in degrees Fahrenheit, of a cup of tea m minutes after it is poured is modeled by $T = 72 - 1.5m$ for $0 \leq m \leq 20$. According to the model, after how many minutes will the temperature be 45 degrees?

A 18
B 30
C 27
D 12

Question 84

If $x/3 + x/6 = 5$, what is the value of x?

A 15
B 30
C 5
D 10

Question 85

In the equation $x^2 + 6x + c = 0$, c is a constant. For what value of c does the equation have exactly one real solution?

Réponse : _____

Question 86

What is the sum of the solutions to $2x^2 - 7x + 3 = 0$?

Réponse : _____

Question 87

The function $f(x) = 3(1.04)^x$ models the mass, in grams, of a bacterial culture x hours after an experiment begins. Which statement best describes the meaning of 1.04 in this context?

A The mass increases by 4% each hour.

B The initial mass is 1.04 grams.

C The mass increases by 104% each hour.

D The mass increases by 1.04 grams each hour.

Question 88

Which expression is equivalent to $(x^2 - 9)/(x - 3)$, for $x \neq 3$?

A $x + 3$

B $x + 9$

C $x - 3$

D $x^2 - 3$

Question 89

What is the maximum value of $y = -2(x - 1)^2 + 8$?

A 1

B −2

C 8

D 10

Question 90

The function f is defined by $f(x) = x^2 + bx + 5$, where b is a constant. If $f(2) = 3$, what is the value of b?

Réponse : _____

Question 91

A car worth $20,000 loses 15% of its value each year. What is its value, in dollars, after 2 years?

A 14,000
B 14,450
C 13,500
D 17,000

Question 92

The graphs of $y = x^2$ and $y = 2x + 3$ intersect at two points. What is the product of the x-coordinates of these two points?

Réponse : _____

Question 93

The price of a jacket was increased by 20%. Later, the new price was decreased by 20%. The final price is what percent of the original price?

A 80%
B 96%
C 100%
D 104%

Question 94

	Online	In person	Total
Grade 11	**45**	**35**	**80**
Grade 12	**50**	**70**	**120**
Total	**95**	**105**	**200**

The table shows how 200 students prefer to take a review course. If a student is chosen at random from the grade 11 students, what is the probability that the student prefers online?

A 19/40
B 9/16
C 45/200
D 9/19

Question 95

A data set of 9 test scores has a mean of 70 and a median of 72. The lowest score, 22, is removed from the data set. Which statement must be true about the 8 remaining scores?

A The mean and the median are both unchanged.
B The median is less than 72.
C The mean is greater than 70.
D The mean is less than 70.

Question 96

In right triangle ABC, angle C is the right angle and sin A = 3/5. What is the value of cos A?

A 4/5
B 5/4
C 5/3
D 3/4

Question 97

The equation of a circle in the xy-plane is $x^2 + y^2 - 6x + 4y - 12 = 0$. What is the radius of the circle?

Réponse : _____

Question 98

A right circular cylinder has a radius of 3 centimeters and a height of 10 centimeters. Its volume is kπ cubic centimeters. What is the value of k?

A 30
B 90
C 60
D 300

Grille de réponses

Notez la lettre choisie ou votre réponse.

1		2		3		4	
5		6		7		8	
9		10		11		12	
13		14		15		16	
17		18		19		20	
21		22		23		24	
25		26		27		28	
29		30		31		32	
33		34		35		36	
37		38		39		40	
41		42		43		44	
45		46		47		48	
49		50		51		52	
53		54		55		56	
57		58		59		60	
61		62		63		64	
65		66		67		68	
69		70		71		72	
73		74		75		76	
77		78		79		80	
81		82		83		84	
85		86		87		88	
89		90		91		92	
93		94		95		96	
97		98					

Corrigé détaillé

La bonne réponse, puis l'explication. Le domaine indiqué vous oriente vers la fiche méthode correspondante sur preparation-sat.fr/fiches-methode-sat/.

Question 1 : B (Craft and Structure)
Le texte justifie le mot manquant par un chiffre très élevé (145 000 spécimens). Seul « extensive » (vaste, étendu) exprime cette ampleur. « fragile », « obscure » et « uniform » ne sont pas soutenus par le texte.

Question 2 : D (Craft and Structure)
« rather than hasty » annonce un mot opposé à « précipité ». La suite (prendre le temps de lire le rapport) confirme une décision réfléchie : « deliberate ». « careless » dit l'inverse ; « permanent » et « unanimous » ne répondent pas à l'opposition.

Question 3 : C (Craft and Structure)
L'autrice garde le genre (une histoire de fantôme) mais en change un élément central (la chanson au lieu de la maison). Elle le transforme : « reworks ». « abandons » et « ignores » contredisent la présence du fantôme ; « imitates » ne rend pas la nouveauté.

Question 4 : D (Craft and Structure)
Le texte pose une énigme (des animaux daltoniens qui imitent les couleurs) puis propose une hypothèse (des protéines sensibles à la lumière dans la peau). Il n'y a ni expérience rejetée, ni comparaison d'espèces, ni définition.

Question 5 : C (Craft and Structure)
Le texte rappelle une idée reçue (les paysans voyageaient peu) puis cite des registres qui la remettent en cause. C'est le but principal. Les autres choix évoquent des sujets absents ou secondaires.

Question 6 : B (Craft and Structure)
Le texte 2 montre un effet positif sur les tâches individuelles et négatif sur les tâches collaboratives. Il nuance donc l'affirmation générale du texte 1 : tout dépend du type de tâche.

Question 7 : D (Craft and Structure)
Le texte 2 apporte une preuve (les lettres envoyées à une centaine de lecteurs) qui contredit l'image d'une poétesse isolée. Il reproche donc au texte 1 d'ignorer cette preuve.

Question 8 : B (Information and Ideas)
Le texte part du problème (les villes plus chaudes) et présente un résultat : les toits végétalisés restent plus frais. Les autres choix sont soit trop absolus (« any other »), soit absents du texte.

Question 9 : A (Information and Ideas)
Le texte oppose l'intérêt habituel (la résistance) à celui d'Okafor (la réaction à l'eau) et ouvre sur une application. Rien n'indique que la soie soit plus faible ou perde toute sa résistance.

Question 10 : D (Information and Ideas)
Pour soutenir l'hypothèse, il faut isoler la chaleur : des fleurs identiques sauf la température. La bonne réponse le fait. L'activité par temps chaud ne prouve pas une préférence pour des fleurs plus chaudes.

Question 11 : A (Information and Ideas)
L'affirmation porte sur l'impatience de Mara. Vérifier quatre fois une boîte aux lettres en sachant que le facteur passe plus tard l'illustre directement. Les autres citations ne parlent pas d'attente.

Question 12 : C (Information and Ideas)
Il faut une donnée qui montre une baisse au fil des années : de 8,1 h à 6,9 h. Les autres réponses ne donnent qu'une valeur, généralisent une moyenne à chaque élève ou sont fausses.

Question 13 : D (Information and Ideas)
« Jusqu'à un certain point » suppose une hausse puis une baisse. Le rendement monte jusqu'à 600 mm (4,6 t) puis baisse (4,0 puis 3,2). Le rendement n'est pas maximal à 900 mm et ne monte pas sans cesse ; une valeur isolée ne montre aucune tendance.

Question 14 : A (Information and Ideas)
Un membre du groupe existe 30 millions d'années plus tôt que prévu : le groupe est donc peut-être plus ancien. Rien dans le texte ne permet de douter de la datation ni de l'utilité du crâne.

Question 15 : D (Standard English Conventions)
Deux propositions indépendantes se suivent. Il faut un point, un point-virgule, ou une virgule suivie de « and ». « ; its » est correct. La virgule seule crée une faute (comma splice).

Question 16 : C (Standard English Conventions)
Une phrase complète annonce une liste : on utilise les deux-points. Le point-virgule doit séparer deux propositions complètes, ce que la liste n'est pas.

Question 17 : D (Standard English Conventions)
« designed by engineer Sofia Lund » est une incise ouverte par une virgule : elle doit être fermée par une virgule avant le verbe « was ».

Question 18 : A (Standard English Conventions)
Le sujet est « The collection », au singulier. « of letters written by the two sisters » est un complément qui ne change pas l'accord. Il faut « gives ».

Question 19 : D (Standard English Conventions)
L'action est achevée avant un autre moment du passé (« By the time … reached ») : on emploie le past perfect « had traveled ».

Question 20 : D (Standard English Conventions)
Le pronom renvoie à « the two geologists », au pluriel : « their ». « it's » est la contraction de « it is ».

Question 21 : A (Standard English Conventions)
Le participe « Having analyzed » doit se rapporter à ceux qui ont analysé. Le sujet qui suit doit donc être « the research team ». Sinon, c'est la vallée ou les siècles qui auraient analysé les échantillons.

Question 22 : B (Expression of Ideas)
La deuxième phrase est une réponse au problème posé dans la première : c'est une conséquence. « For this reason » est la seule transition de cause à effet.

Question 23 : B (Expression of Ideas)
Les deux phrases opposent deux prototypes (lourd puis léger) : « By contrast ». Rien n'indique que le second soit la conséquence du premier.

Question 24 : C (Expression of Ideas)
On attendrait qu'un village sans train reste isolé, or il devient un grand marché : c'est une opposition à une attente. « Nevertheless » convient.

Question 25 : D (Expression of Ideas)
Le but est de mettre en avant le matériau des murs. Seule la bonne réponse cite les bouteilles de verre recyclé.

Question 26 : A (Expression of Ideas)
Comparer les longueurs demande les deux mesures et leur écart (30 m contre 18 m, soit 12 m). Opposer mammifère et poisson compare les classes d'animaux, pas la taille.

Question 27 : B (Expression of Ideas)
Pour un public qui ne connaît pas l'étude, il faut le contexte (2025, 40 jardins), la méthode (les trous) et le résultat (deux fois plus de visites). Seule la bonne réponse réunit les trois.

Question 28 : A (Craft and Structure)
Les carnets prouvent l'originalité de la compositrice : les critiques doivent revenir sur leur avis. « recant » signifie se rétracter. « reaffirm » dit l'inverse.

Question 29 : A (Craft and Structure)
Un échantillon de douze familles d'un même quartier rend les conclusions fragiles : « tenuous ». « compelling » et « exhaustive » vont à l'opposé ; « redundant » (redondant) n'a pas de rapport.

Question 30 : A (Craft and Structure)
« Rather than » oppose le mot manquant au fait de signaler ouvertement les lacunes. Il faut donc une expression qui veut dire les masquer : « paper over ». « point out » est justement ce qu'elle fait.

Question 31 : A (Craft and Structure)
Trois temps : une idée ancienne (le bois mort est un déchet), un résultat qui la contredit (un quart des espèces menacées en dépend), puis un changement de pratique. Les autres choix décrivent un autre texte.

Question 32 : B (Craft and Structure)
La phrase soulignée tire une conséquence supplémentaire des nouvelles attributions : la carrière du maître est réévaluée. Elle ne remet pas en cause l'analyse et n'explique pas l'absence de signature.

Question 33 : A (Craft and Structure)
Le texte 2 confirme l'effet des pistes à une condition : qu'elles forment un réseau continu. Meyer parle justement d'un réseau protégé. Les auteurs seraient donc d'accord sous cette condition. Ils ne disent pas que les pistes n'ont jamais d'effet.

Question 34 : C (Craft and Structure)
Le texte 2 montre des ressemblances précises entre personnages et voisins réels. L'auteur jugerait donc les déclarations d'Arden démenties par les faits.

Question 35 : A (Information and Ideas)
Le passage insiste sur la persistance de l'habitude malgré l'automatisation (« He kept writing anyway »). Rien ne parle de soulagement ; il note des tempêtes « that no one would read about », donc pas pour informer les autres.

Question 36 : B (Information and Ideas)
Si les poissons s'installent autant près du silence que près des sons de récif, les sons n'orientent pas leur choix : l'hypothèse est affaiblie. Un constat montrant que les poissons préfèrent les sons de récif la soutiendrait au contraire.

Question 37 : D (Information and Ideas)
Il faut une preuve que la demande venait des ouvriers avant l'agrandissement : une pétition de 1902 signée par 900 ouvriers. La salle au nom d'un banquier irait plutôt dans le sens des donateurs.

Question 38 : C (Information and Ideas)
L'affirmation compare les hausses selon la distance. Seule la bonne réponse montre que la hausse est forte sous 3 km (+9 et +11 points) et faible au-delà (+1 point). Les autres choix sont vrais mais ne montrent pas où se concentre la hausse.

Question 39 : D (Information and Ideas)
184/200 = 92 % à 4 °C et 118/200 = 59 % à 25 °C : la comparaison montre que le froid conserve mieux. Les autres choix ne comparent pas les températures.

Question 40 : B (Information and Ideas)
L'avantage de la variété apparaît quand l'eau manque. Des essais menés avec une pluie moyenne risquent donc de ne pas le montrer. Le texte ne permet pas de conclure à de moins bons résultats.

Question 41 : C (Information and Ideas)
Des grains de type sauvage et l'absence d'outils agricoles suggèrent une cueillette d'orge sauvage. Les grains dans les marmites prouvent qu'ils en mangeaient, et rien ne parle de commerce.

Question 42 : C (Standard English Conventions)
« who spent a decade tagging sharks… California » est une incise non essentielle : elle s'ouvre et se ferme par une virgule. Le point-virgule ne peut pas séparer un sujet de son verbe.

Question 43 : A (Standard English Conventions)
Deux propositions complètes, la seconde contenant « however » en incise. Il faut un point-virgule ou un point. La virgule seule relierait fautivement deux phrases.

Question 44 : C (Standard English Conventions)
Phrase inversée : le vrai sujet suit le verbe, c'est une liste de trois objets (pluriel). Il faut « were ». Le complément « Among the objects » placé en tête n'est pas le sujet.

Question 45 : C (Standard English Conventions)
Trois actions coordonnées après « to » : « identify », « record », « remove ». Le parallélisme impose la base verbale « record ».

Question 46 : C (Standard English Conventions)
Il s'agit des nids de plusieurs macareux (une colonie) : possessif pluriel « puffins' ». « puffin's » renvoie à un seul oiseau, « puffins » n'est pas possessif.

Question 47 : B (Standard English Conventions)
« Built in 1889 … and once criticized » décrit la tour : le sujet qui suit doit être « the Eiffel Tower ». Dans les autres choix, ce sont les visiteurs ou les artistes qui auraient été construits en 1889.

Question 48 : D (Standard English Conventions)
Quand les éléments d'une liste contiennent déjà des virgules (ville, pays), on les sépare par des points-virgules, y compris avant le dernier élément.

Question 49 : D (Expression of Ideas)
Le résultat est contraire à ce qui était attendu : « Instead » introduit ce qui s'est passé à la place. « Consequently » supposerait que la baisse minime découle de l'attente.

Question 50 : D (Expression of Ideas)
Utiliser moins d'acier entraîne un coût plus faible : relation de cause à conséquence, « As a result ». « In other words » reformulerait la même idée, or le coût est une idée nouvelle.

Question 51 : C (Expression of Ideas)
La deuxième phrase nuance la première : la chanteuse était peu connue, et pourtant un enregistrement circulait. « Still » (malgré tout) exprime cette concession.

Question 52 : A (Expression of Ideas)
« Comment ils ont testé » demande la méthode : le masque porté lors de la capture, puis l'observation des réactions. Les réponses fausses donnent la question de recherche ou le résultat, pas la méthode.

Question 53 : D (Expression of Ideas)
Opposer les pluies demande les deux chiffres reliés par un connecteur d'opposition (« while »). Seule la bonne réponse le fait.

Question 54 : A (Expression of Ideas)
Souligner l'importance revient à montrer ce que le résultat a changé : une idée ancienne renversée. La bonne réponse le dit en termes simples ; les autres restent descriptives.

Question 55 : C (Algebra)
On retire 7 des deux côtés : $3x = 15$, puis on divise par 3 : $x = 5$.

Question 56 : A (Algebra)
Une droite s'écrit $y = mx + b$, avec m la pente et b l'ordonnée à l'origine. Ici $m = -2$ et $b = 4$: $y = -2x + 4$.

Question 57 : 7 (Algebra)
En additionnant les deux équations, y s'élimine : $2x = 14$, donc $x = 7$ (et $y = 3$).

Question 58 : C (Algebra)
On ajoute 5 : $2x > 14$, puis on divise par 2 (nombre positif, le sens ne change pas) : $x > 7$.

Question 59 : 19 (Algebra)
Coût = 3 + 2 × 8 = 3 + 16 = 19 dollars.

Question 60 : D (Algebra)
On remplace x par 5 : f(5) = 4 × 5 − 3 = 20 − 3 = 17.

Question 61 : A (Algebra)
Deux droites parallèles ont la même pente : 3. On cherche b avec 5 = 3 × 2 + b, donc b = −1 : y = 3x − 1.

Question 62 : B (Algebra)
12 multiplie h : c'est la hausse du coût pour chaque heure en plus. 50 est le forfait fixe.

Question 63 : B (Advanced Math)
$(x + 3)^2 = x^2 + 2 \times 3 \times x + 3^2 = x^2 + 6x + 9$. L'oubli du double produit 6x est l'erreur la plus fréquente.

Question 64 : 5 (Advanced Math)
$x^2 − 5x + 6 = (x − 2)(x − 3)$: les solutions sont 2 et 3, leur somme vaut 5.

Question 65 : B (Advanced Math)
$(−3)^2 = 9$, et 9 − 4 = 5. Attention : le carré d'un nombre négatif est positif.

Question 66 : A (Advanced Math)
Un doublement tous les 3 ans donne un facteur 2 élevé à la puissance t/3 : après 3 ans, l'exposant vaut 1 et la population vaut 1 000.

Question 67 : B (Advanced Math)
6 ÷ 2 = 3 et $x^3 ÷ x = x^2$: on obtient $3x^2$.

Question 68 : 32 (Advanced Math)
$2^5 = 2 \times 2 \times 2 \times 2 \times 2 = 32$.

Question 69 : B (Advanced Math)
Sous la forme $y = (x − h)^2 + k$, le sommet est (h, k). Ici h = 4 et k = 1.

Question 70 : -7 ou −7 (Advanced Math)
$x^2 = 49$ a deux solutions, 7 et −7. La condition x < 0 ne garde que −7.

Question 71 : A (Problem-Solving and Data Analysis)
30 % de 250 = 0,30 × 250 = 75.

Question 72 : C (Problem-Solving and Data Analysis)
Somme : 4 + 8 + 10 + 14 = 36. Moyenne : 36 ÷ 4 = 9.

Question 73 : 6 (Problem-Solving and Data Analysis)
9 tasses de farine, c'est 3 fois la recette (9 ÷ 3 = 3). Il faut donc 3 × 2 = 6 tasses de sucre.

Question 74 : C (Geometry and Trigonometry)
Aire d'un rectangle = longueur × largeur = 8 × 5 = 40 cm^2. 26 est le périmètre.

Question 75 : B (Geometry and Trigonometry)
Théorème de Pythagore : $6^2 + 8^2 = 36 + 64 = 100$, donc l'hypoténuse vaut $\sqrt{100} = 10$.

Question 76 : A (Geometry and Trigonometry)
Circonférence = $2\pi r = 2 \times \pi \times 3 = 6\pi$. 9π est l'aire (πr^2).

Question 77 : B (Algebra)
Pente : $(19 - 7) \div (6 - 2) = 3$. Avec (2, 7) : $7 = 3 \times 2 + b$, donc $b = 1$. La droite est $y = 3x + 1$.

Question 78 : 5 (Algebra)
De la seconde équation : $y = 4x - 10$. On remplace : $2x + 3(4x - 10) = 12$, soit $14x = 42$, $x = 3$, puis $y = 2$. Donc $x + y = 5$.

Question 79 : D (Algebra)
Pas de solution quand les droites sont parallèles et distinctes : les coefficients de x et y doivent être proportionnels, $a/3 = 2/6$, donc $a = 1$. Les constantes (5 et 8) ne suivent pas ce rapport, les droites ne sont donc pas confondues.

Question 80 : 11 (Algebra)
$7 + 3n \leq 40$, donc $3n \leq 33$ et $n \leq 11$. Elle peut acheter au plus 11 cahiers (avec 12, la dépense serait de 43 dollars).

Question 81 : A (Algebra)
Deux droites perpendiculaires ont des pentes dont le produit vaut -1 : la pente de m est 2. Avec (1, 3) : $3 = 2 \times 1 + b$, donc $b = 1$.

Question 82 : B (Algebra)
Pente : $(13 - 5) \div (6 - 2) = 2$, donc $f(x) = 2x + b$ avec $5 = 4 + b$, $b = 1$. $f(10) = 21$.

Question 83 : A (Algebra)
$72 - 1{,}5m = 45$, donc $1{,}5m = 27$ et $m = 18$ minutes.

Question 84 : D (Algebra)
$x/3 = 2x/6$, donc $x/3 + x/6 = 3x/6 = x/2$. Si $x/2 = 5$, $x = 10$.

Question 85 : 9 (Advanced Math)
Une seule solution réelle quand le discriminant est nul : $6^2 - 4 \times 1 \times c = 0$, soit $36 - 4c = 0$ et $c = 9$.

Question 86 : 3.5 ou 7/2 (Advanced Math)
La somme des solutions d'une équation $ax^2 + bx + c = 0$ vaut $-b/a = 7/2$. On peut vérifier : les solutions sont 3 et 1/2.

Question 87 : A (Advanced Math)
Un facteur $1{,}04 = 1 + 0{,}04$: la masse est multipliée par 1,04 chaque heure, soit une hausse de 4 %. La masse initiale est 3 grammes.

Question 88 : A (Advanced Math)
$x^2 - 9 = (x - 3)(x + 3)$. On simplifie par $(x - 3)$: il reste $x + 3$.

Question 89 : C (Advanced Math)
$-2(x-1)^2$ est toujours négatif ou nul, et vaut 0 quand x = 1. Le maximum de y est donc 8.

Question 90 : -3 ou −3 (Advanced Math)
f(2) = 4 + 2b + 5 = 9 + 2b. Si 9 + 2b = 3, alors 2b = −6 et b = −3.

Question 91 : B (Advanced Math)
Perdre 15 % revient à multiplier par 0,85 chaque année : $20\,000 \times 0{,}85^2 = 20\,000 \times 0{,}7225 = 14\,450$. 14 000 correspond à une baisse de 30 % d'un coup, ce qui est faux.

Question 92 : -3 ou −3 (Advanced Math)
$x^2 = 2x + 3$, donc $x^2 - 2x - 3 = 0$, soit $(x-3)(x+1) = 0$. Les abscisses sont 3 et −1, leur produit vaut −3.

Question 93 : B (Problem-Solving and Data Analysis)
1,20 × 0,80 = 0,96 : le prix final vaut 96 % du prix initial. Une hausse puis une baisse du même pourcentage ne s'annulent pas.

Question 94 : B (Problem-Solving and Data Analysis)
On se limite aux élèves de grade 11 : 45 sur 80, soit 45/80 = 9/16. 45/200 rapporte à tous les élèves, ce qui ne répond pas à la question.

Question 95 : C (Problem-Solving and Data Analysis)
Somme initiale : 9 × 70 = 630. Sans 22 : 608 ÷ 8 = 76, la moyenne augmente. La médiane ne peut pas baisser : elle reste à 72 ou augmente.

Question 96 : A (Geometry and Trigonometry)
Avec sin A = 3/5, on prend un côté opposé de 3 et une hypoténuse de 5. Le côté adjacent vaut $\sqrt{25-9} = 4$, donc cos A = 4/5.

Question 97 : 5 (Geometry and Trigonometry)
On complète les carrés : $(x-3)^2 - 9 + (y+2)^2 - 4 - 12 = 0$, soit $(x-3)^2 + (y+2)^2 = 25$. Le rayon vaut $\sqrt{25} = 5$.

Question 98 : B (Geometry and Trigonometry)
Volume d'un cylindre = $\pi r^2 h = \pi \times 9 \times 10 = 90\pi$. Donc k = 90.

> Pour estimer votre score et voir vos résultats par domaine, passez ce test en ligne : preparation-sat.fr/test-blanc-sat/. Un conseiller SAT First peut aussi analyser vos résultats avec vous au 09 78 45 00 08.