

Ivy Global

SAT Mini-Diagnostic Test

Edition 2.6

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This diagnostic was written and edited by the team at Ivy Global, a pioneering education company that delivers a wide range of educational services.

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SAT

This exam is a short diagnostic to help you assess your general strengths and weaknesses for the new SAT.

Directions

- Work on just one section at a time.
- If you complete a section before the end of your allotted time, use the extra minutes to check your work on that section only. Do NOT use the time to work on another section.

Using Your Test Booklet

- No credit will be given for anything written in the test booklet. You may use the test booklet for scratch paper.
- You are not allowed to continue answering questions in a section after the allotted time has run out. This includes marking answers on your answer sheet that you previously noted in your test booklet.
- You are not allowed to fold pages, take pages out of the test booklet, or take any pages home.

Answering Questions

- Each answer must be marked in the corresponding row on the answer sheet.
- Each bubble must be filled in completely and darkly within the lines.



- Be careful to bubble in the correct part of the answer sheet.
- Extra marks on your answer sheet may be marked as incorrect answers and lower your score.
- Make sure you use a No. 2 pencil.

Scoring

- You will receive one point for each correct answer.
- Incorrect answers will NOT result in points deducted. Even if you are unsure about an answer, you should make a guess.

**DO NOT BEGIN THIS TEST
UNTIL YOUR PROCTOR TELLS YOU TO DO SO**

Section 1

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Only answers that are gridded will be scored. You will not receive credit for anything written in the boxes.

Section 1

Reading Test

15 MINUTES, 9 QUESTIONS

Turn to Section 1 of your answer sheet to answer the questions in this section.

DIRECTIONS

Every passage or paired set of passages is accompanied by a number of questions. Read the passage or paired set of passages, then use what is said or implied in what you read and in any given graphics to choose the best answer to each question.

Questions 1-9 are based on the following passage.

Carrie Chapman Catt was a leader of the women’s suffrage movement. This passage is adapted from a speech she made in front of the United States Congress in November 1917, arguing for the passage of the 19th amendment granting all women the right to vote.

Woman suffrage is inevitable. Three distinct causes made it inevitable.

Line
5
10
15
20

First, the history of our country. Ours is a nation born of revolution, of rebellion against a system of government so securely entrenched in the customs and traditions of human society that in 1776 it seemed impregnable. The American Revolutionists boldly proclaimed the heresies: “Taxation without representation is tyranny.” “Governments derive their just powers from the consent of the governed.” The colonists won, and the nation which was established as a result of their victory has held unflinching that these two fundamental principles of democratic government are not only the spiritual source of our national existence but have been our chief historic pride and at all times the sheet anchor of our liberties. Eighty years after the Revolution, Abraham Lincoln welded those two maxims into a new one: “Ours is a government of the people, by the people, and for the people.”

With such a history behind it, how can our nation escape the logic it has never failed to follow, when

its last unenfranchised class calls for the vote? Behold our Uncle Sam floating the banner with one hand, “Taxation without representation is tyranny,” and with the other seizing the billions of dollars paid in taxes by women to whom he refuses “representation.” Behold him again, welcoming the boys of twenty-one and the newly made immigrant citizen to “a voice in their own government” while he denies that fundamental right of democracy to thousands of women public school teachers from whom many of these men learn all they know of citizenship and patriotism, to women college presidents, to women who preach in our pulpits, interpret law in our courts, preside over our hospitals, write books and magazines, and serve in every uplifting moral and social enterprise.

40
45
50

Second, the suffrage for women already established in the United States makes woman suffrage for the nation inevitable. When Elihu Root, as president of the American Society of International Law, at the eleventh annual meeting in Washington, April 26, 1917, said, “The world cannot be half democratic and half autocratic. It must be all democratic or all Prussian. There can be no compromise,” he voiced a general truth. Precisely the same intuition has already taught the blindest and most hostile foe of woman suffrage that our nation cannot long continue a condition under which

CONTINUE

government in half its territory rests upon the consent of half of the people and in the other half upon the consent of all the people; a condition which grants representation to the taxed in half of its territory and denies it in the other half; a condition which permits women in some states to share in the election of the president, senators, and representatives and denies them that privilege in others. It is too obvious to require demonstration that woman suffrage, now covering half our territory, will eventually be ordained in all the nation. No one will deny it. The only question left is when and how will it be completely established.

Third, the leadership of the United States in world democracy compels the enfranchisement of its own women. The maxims of the Declaration were once called “fundamental principles of government.” They are now called “American principles” or even “Americanisms.” They have become the slogans of every movement toward political liberty the world around, of every effort to widen the suffrage for men or women in any land. Not a people, race, or class striving for freedom is there anywhere in the world that has not made our axioms the chief weapon of the struggle. More, all men and women the world around, with farsighted vision into the verities of things, know that the world tragedy of our day is not now being waged over the assassination of an archduke, nor commercial competition, nor national ambitions, nor the freedom of the seas. It is a death grapple between the forces which deny and those which uphold the truths of the Declaration of Independence.

“There is one thing mightier than kings and armies”—aye, than Congresses and political parties—“the power of an idea when its time has come to move.” The time for woman suffrage has come. The woman’s hour has struck. If parties prefer to postpone action longer and thus do battle with this idea, they challenge the inevitable. The idea will not perish; the party which opposes it may. Can you afford the risk? Think it over.

1

Catt’s tone is best described as one of

- A) conviction.
- B) detachment.
- C) glibness.
- D) foreboding.

2

Catt would most likely describe opposition to women’s suffrage as

- A) futile.
- B) ironic.
- C) frightening.
- D) unstoppable.

3

Which of the following best describes the structure of Catt’s arguments in this passage?

- A) Catt summarizes the history of a few violent revolutions, as a subtle warning to those who would stand in the way of woman suffrage.
- B) Catt invokes historical evidence to explain why woman suffrage has already prevailed internationally, implying that the same will happen in the United States.
- C) Catt juxtaposes the compelling rhetoric of great leaders with the grim realities of ever-diminishing liberty and democratic participation.
- D) Catt describes historical and contemporary conditions and invokes popular maxims to show how broadly accepted facts and ideas support her position.


 CONTINUE

4

In the first paragraph, Catt discusses the history of the United States in order to

- A) emphasize that its founders believed that the right to vote was of paramount importance in a democratic society.
- B) demonstrate how much times have changed since its founding.
- C) establish that granting women the right to vote is just as rebellious as the American Revolution.
- D) suggest that woman suffrage was the original intention of the founding fathers.

5

Which situation is most similar to the one described in lines 21-38 (“With such ... enterprise”)?

- A) A company offers a health plan to all of its employees, but only offers paid vacation to senior employees.
- B) A state government imposes a sales tax on certain types of services, but not on others.
- C) An organization claims to be totally committed to equal opportunity, but uses discriminatory hiring practices.
- D) A politician campaigns on a platform of restricting voting rights to certain groups of people.

6

Which of the following provides the best summary of the arguments in the fourth paragraph (lines 39-64)?

- A) The rest of the world has already given women the right to vote, so the States must do so as well.
- B) Half of the states already allow women to vote, creating an imperative to allow suffrage in the other states.
- C) The only alternative to democracy is autocracy, and so we must persevere in expanding the vote.
- D) We must follow the example of well-known leaders such as Elihu Root who have come out in support of suffrage.

7

As it is used in line 63, “established” most nearly means

- A) instituted.
- B) demonstrated.
- C) certified.
- D) proven.


 CONTINUE

8

Catt suggests that it will be in the interests of political parties to support woman suffrage because

- A) the more people who are allowed to vote, the more votes each party will receive.
- B) embracing suffrage for women will establish the United States as a world leader.
- C) opposing suffrage for women will hurt political parties in the long run.
- D) the Founding Fathers intended for all US persons to be allowed to vote eventually.

9

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

- A) Lines 64-66 (“Third ... own women”)
- B) Lines 69-73 (“They have ... land”)
- C) Lines 76-81 (“More ... the seas”)
- D) Lines 91-93 (“The idea ... may”)

STOP

If you complete this section before the end of your allotted time, check your work on this section only. Do NOT use the time to work on another section.

Section 2

Writing and Language Test

10 MINUTES, 9 QUESTIONS

Turn to Section 2 of your answer sheet to answer the questions in this section.

DIRECTIONS

Every passage comes with a set of questions. Some questions will ask you to consider how the writer might revise the passage to improve the expression of ideas. Other questions will ask you to consider correcting potential errors in sentence structure, usage, or punctuation. There may be one or more graphics that you will need to consult as you revise and edit the passage.

Some questions will refer to a portion of the passage that has been underlined. Other questions will refer to a particular spot in a passage or ask that you consider the passage in full.

After you read the passage, select the answers to questions that most effectively improve the passage's writing quality or that adjust the passage to follow the conventions of standard written English. Many questions give you the option to select "NO CHANGE." Select that option in cases where you think the relevant part of the passage should remain as it currently is.

Questions 1-9 are based on the following passage.

The Earth as HVAC

1 The desire both to save on energy bills and cultural pressures to move away from 'dirty' technology drive increasing interest in efficient, sustainable technology. Geothermal heating, ventilation, and air conditioning (HVAC) is one such technology. The phrase "geothermal energy" can refer to the intense heat energy escaping from Earth's hot core, but is also used to describe another source of energy: thermal energy trapped in the ground near Earth's surface.

1

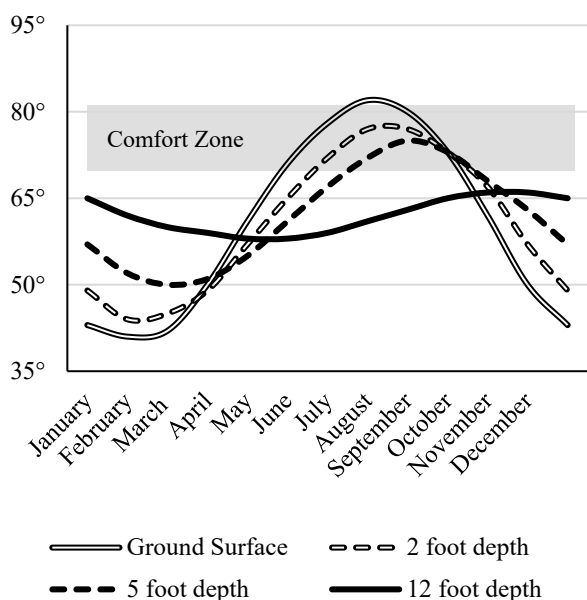
- A) NO CHANGE
- B) The desire to save both on energy bills and cultural pressures
- C) The desire to save on energy bills and both cultural pressures
- D) Both the desire to save on energy bills and cultural pressures

CONTINUE 

Like atmospheric heat, this heat energy comes mainly from the Sun. However, the ground absorbs and loses heat energy more slowly than the air. That means that **2** temperatures are always cooler underground than at the surface.

[1] Geothermal HVAC systems take advantage of **3** that. [2] Moving liquid through the heat exchanger has the effect of making the liquid's temperature closer to the temperature of the surrounding earth. [3] The system's components are fairly simple: a heat pump, which distributes heat around a building; ductwork, to carry hot or cold **4** air; and a heat exchanger, a system of liquid-filled pipes either buried in the ground or placed in a body of water. [4] In winter, heat is removed from the ground through the heat exchanger and delivered to the structure. [5] In summer, the heat is removed from the structure into the earth. **5**

Soil Temperature (in °F) in a Temperate Location by Depth and Season



2

Which choice completes the sentence with accurate information based on the graph?

- A) NO CHANGE
- B) temperatures at the surface are consistently warmer than temperatures underground
- C) temperature are more stable at depths nearer to the surface
- D) temperatures underground are more stable than surface temperatures

3

- A) NO CHANGE
- B) such intense heat energy
- C) those things
- D) these temperature differences

4

- A) NO CHANGE
- B) air and a heat exchanger, a system
- C) air, and a heat exchanger: a system
- D) air, and a heat exchanger, a system

5

To make this paragraph most logical, sentence 2 should be placed

- A) Where it is now.
- B) Before sentence 1.
- C) After sentence 3.
- D) After sentence 5.

6 As a result, different situations require different kinds of systems. Systems can be installed horizontally or vertically. The horizontal method usually requires digging long trenches to hold the heat exchanger pipes. A vertical system requires drilling straight down to much greater depths. Provided the soil is deep enough, trenches are usually less costly to dig than deep boreholes, so this kind of system is ideal for situations where there is plenty of land available. A vertical system can be used when the plot of land is too 7 small. It can also be used if the soil is too shallow for trenching, or if the heat exchanger will be placed in a body of water. Whatever type of system is called 8 for, geothermal heat pumps offer substantial energy savings.

Still, geothermal is not without its critics. Some say that it is not a truly sustainable technology, because it uses electric fans and pumps to move heat. They suggest that it's better to invest in sustainable ways to generate clean electricity. But saving electricity is not 9 supposably an alternative to generating clean electricity: rather, it should be one part of a broader strategy. Geothermal HVAC systems can cut home heating and cooling costs by up to 70%, and those significant benefits make geothermal HVAC a promising step towards a sustainable future.

6

- A) NO CHANGE
- B) Of course,
- C) In contrast,
- D) In conclusion,

7

Which choice most effectively combines the sentences at the underlined portion?

- A) small, and it can also be used if the soil
- B) small, but also if the soil
- C) small, and if the soil
- D) small, if the soil

8

- A) NO CHANGE
- B) up
- C) to
- D) on

9

- A) NO CHANGE
- B) suppose to be
- C) supposedly
- D) supposed to be

STOP

If you complete this section before the end of your allotted time, check your work on this section only. Do NOT use the time to work on another section.

Section 3

Math Test

15 MINUTES, 11 QUESTIONS

Turn to Section 3 of your answer sheet to answer the questions in this section.

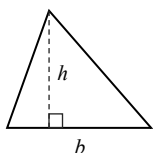
DIRECTIONS

Questions **1-3** and **5-8** ask you to solve a problem, select the best answer among four choices, and fill in the corresponding circle on your answer sheet. Questions **4** and **9-11** ask you to solve a problem and enter your answer in a grid provided on your answer sheet. There are detailed instructions on entering answers into the grid on the following page. You may use your test booklet for scratch work.

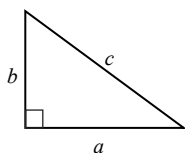
NOTES

1. You **may not** use a calculator for questions 1-4. You **may** use a calculator for questions 5-11.
2. Variables and expressions represent real numbers unless stated otherwise.
3. Figures are drawn to scale unless stated otherwise.
4. Figures lie in a plane unless stated otherwise.
5. The domain of a function f is defined as the set of all real numbers x for which $f(x)$ is also a real number, unless stated otherwise.

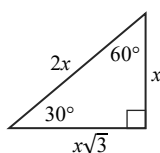
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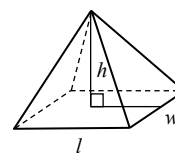
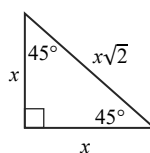
$$A = \frac{1}{2}bh$$



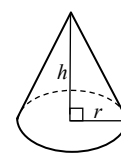
$$a^2 + b^2 = c^2$$



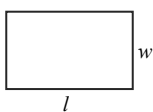
Special Triangles



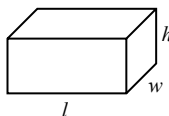
$$V = \frac{1}{3}lwh$$



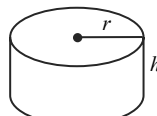
$$V = \frac{1}{3}\pi r^2 h$$



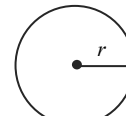
$$A = lw$$



$$V = lwh$$

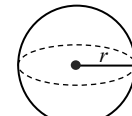


$$V = \pi r^2 h$$



$$A = \pi r^2$$

$$C = 2\pi r$$



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

There are 360° in a circle.

The sum of the angles in a triangle is 180° .

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

CONTINUE

DIRECTIONS

Questions 4 and 9-11 ask you to solve a problem and enter your answer in the grid provided on your answer sheet. When completing grid-in questions:

- You are required to bubble in the circles for your answers. It is recommended, but not required, that you also write your answer in the boxes above the columns of circles. Points will be awarded based only on whether the circles are filled in correctly.
- Fill in only one circle in a column.
- You can start your answer in any column as long as you can fit in the whole answer.
- For questions 4 and 9-11, no answers will be negative numbers.
- Mixed numbers**, such as $4\frac{2}{5}$, must be gridded as decimals or improper fractions, such as 4.4 or as $\frac{22}{5}$. "42/5" will be read as "forty-two over five," not as "four and two-fifths."
- If your answer is a **decimal** with more digits than will fit on the grid, you may round it or cut it off, but you must fill the entire grid.
- If there are **multiple correct solutions** to a problem, all of them will be considered correct. Enter only **one** on the grid.

5	/	1	1		8	.	4		3	/	7			
/	●	○			/	○	○		/	○	●			
.	○	○	○	○	.	○	○	●	○	.	○	○	○	○
0	○	○	○	○	0	○	○	○	○	0	○	○	○	○
1	○	○	●	●	1	○	○	○	○	1	○	○	○	○
2	○	○	○	○	2	○	○	○	○	2	○	○	○	○
3	○	○	○	○	3	○	○	○	○	3	○	●	○	○
4	○	○	○	○	4	○	○	○	●	4	○	○	○	○
5	●	○	○	○	5	○	○	○	○	5	○	○	○	○
6	○	○	○	○	6	○	○	○	○	6	○	○	○	○
7	○	○	○	○	7	○	○	○	○	7	○	○	○	●
8	○	○	○	○	8	○	●	○	○	8	○	○	○	○
9	○	○	○	○	9	○	○	○	○	9	○	○	○	○

.	4	2	2		.	3	2	6		.	1	2	5	
/	○	○			/	○	○			/	○	○		
.	●	○	○	○	.	●	○	○	○	.	●	○	○	○
0	○	○	○	○	0	○	○	○	○	0	○	○	○	○
1	○	○	○	○	1	○	○	○	○	1	○	●	○	○
2	○	○	●	●	2	○	○	●	○	2	○	○	●	○
3	○	○	○	○	3	○	●	○	○	3	○	○	○	○
4	○	●	○	○	4	○	○	○	○	4	○	○	○	○
5	○	○	○	○	5	○	○	○	○	5	○	○	○	●
6	○	○	○	○	6	○	○	○	●	6	○	○	○	○
7	○	○	○	○	7	○	○	○	○	7	○	○	○	○
8	○	○	○	○	8	○	○	○	○	8	○	○	○	○
9	○	○	○	○	9	○	○	○	○	9	○	○	○	○

CONTINUE 



You MAY NOT use a calculator for questions 1-4.

1

If the point $(x, 7)$ lies on the graph of $5x + 2y = 4$, what is the value of x ?

- A) -15
- B) -2
- C) 0
- D) 2

2

If $x > 1$, how many times greater is $4x^2$ than x ?

- A) 4
- B) $4x$
- C) $x(4x - 1)$
- D) $(2x - 1)(2x + 1)$

3

If the ratio of a to b is $5:3$ and the ratio of b to c is $6:2$, what is the ratio of a to c ?

- A) $5:1$
- B) $5:2$
- C) $3:2$
- D) $1:2$

4

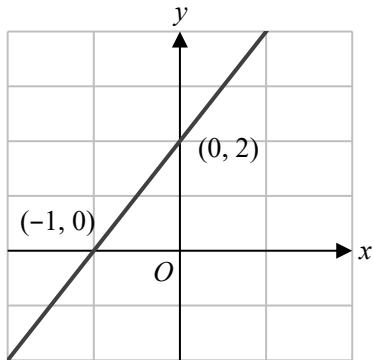
If $f(x) = 3x - 1$ and $g(x) = 4x + 2$, what is the value of $g(f(0) + 2)$?

A gray arrow pointing to the right with the word "CONTINUE" written inside it.
CONTINUE



You MAY use a calculator for questions 5-11.

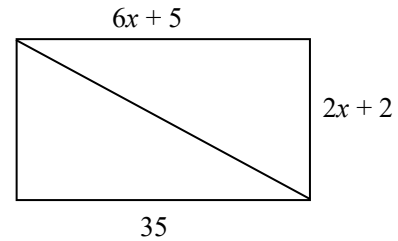
5



If line m is perpendicular to the line shown in the graph above, which of the following is NOT a possible equation for line m ?

- A) $2y + x = 3$
- B) $-6y - 3x = 4$
- C) $2y + 2x = 5$
- D) $4y + 2x = 7$

6



A line is drawn through the diagonal of a rectangle as shown above. What is the length of the diagonal?

- A) 5
- B) 12
- C) 35
- D) 37

CONTINUE



7

Evie's cell phone plan costs \$35 a month with an additional 10 cents per minute for any minutes over 500 minutes per month. If Evie was charged \$37.20 in January, how many minutes did Evie use on her cell phone plan that month?

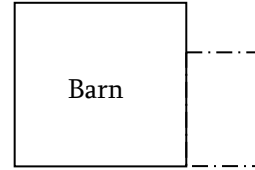
- A) 22
- B) 222
- C) 522
- D) 600

8

If $(ax + 2)(3x - 5b) - bx^2 = -11x^2 + 36x - 20$, what is the value of $a + b$?

- A) -6
- B) -1
- C) 1
- D) 6

9



An 84 meter length of fencing is attached to the side of a barn in order to fence in a rectangular area, as shown in the figure above. If the length of the side of the fence running perpendicular to the barn is half the length of the side of the fence that is running parallel to the barn, what is the area of the fenced off land?



Questions 10 and 11 refer to the following information.

Energy use of appliances is measured in kilowatt-hours, where one kilowatt-hour is equal to one kilowatt used per hour. The table above shows the wattage of some common household appliances.

Appliance	Wattage Per Hour
Refrigerator	700
Electric oven	3000
Air conditioner	1000
Television	200
Floor lamp	50

10

City A charges \$0.14 per kilowatt-hour and City B charges \$0.20 per kilowatt-hour. What is the difference in cost between City B and City A, measured in cents, to use an air conditioner for two hours?

11

Clara's Electricity Usage for June

Appliance	Hours used
Refrigerator	720
Electric oven	5
Air conditioner	60
Floor lamp	280

The table above shows Clara's electricity usage for June. If Clara lives in City B, how much is her electric bill rounded to the nearest dollar for the month of June?

STOP

If you complete this section before the end of your allotted time, check your work on this section only. Do NOT use the time to work on another section.

Fill out your answers on **cloud.ivyglobal.com**
to get a detailed score report.

