

# SAT Math Foundation Worksheet

8 original questions, working space and separate answer explanations. Version 2026-10-27.

## Scope

Selected SAT Math foundations.

This is an untimed foundation study sample, not an official examination or complete mock test. Author-reviewed learning materials; independent educator review and learner calibration remain pending.

## How to use this worksheet

Work through the questions before opening the answer section. Write your calculation or the reason for your choice. After checking the explanation, return to the linked lesson for any unfamiliar distinction.

<https://openexam.site/exams/sat-math/worksheets/>

### QUESTION 1 / Linear equations

If  $3x + 4 = 19$ , what is the value of  $x$ ?

- A.  $19/3$
- B.  $23/3$
- C. 5
- D.  $5/3$

Working / reasoning:

Item linear-001 | Lesson: <https://openexam.site/exams/sat-math/learn/linear/>

### QUESTION 2 / Exponents & expressions

For  $x > 0$ ,  $x^4 \cdot x^5 = x^n$ . What is  $n$ ?

Your answer: \_\_\_\_\_

Working / reasoning:

Item exponents-005 | Lesson: <https://openexam.site/exams/sat-math/learn/exponents/>

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QUESTION 3 / Ratios & units

A cyclist travels 36 kilometers in 3 hour(s) at a constant speed. How many kilometers will the cyclist travel in 5 hours?

- A. 5
- B. 12
- C. 60
- D. 36

Working / reasoning:

Item ratios-010 | Lesson: <https://openexam.site/exams/sat-math/learn/ratios/>

QUESTION 4 / Geometry essentials

Two similar rectangles have a side-length ratio of 1:6. The smaller has area 7. What is the area of the larger?

Your answer: \_\_\_\_\_

Working / reasoning:

Item geometry-015 | Lesson: <https://openexam.site/exams/sat-math/learn/geometry/>

QUESTION 5 / Lines & slope

A line has slope 7 and passes through (2, 22). What is its y-intercept?

- A. -8
- B. 4
- C. 8
- D. 36

Working / reasoning:

Item slope-018 | Lesson: <https://openexam.site/exams/sat-math/learn/slope/>

QUESTION 6 / Quadratic structure

What is the larger solution of  $(x - 3)(x + 4) = 0$ ?

- A. -1
- B. 3
- C. 4
- D. -3

Working / reasoning:

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Item quadratics-001 | Lesson: <https://openexam.site/exams/sat-math/learn/quadratics/>

QUESTION 7 / Percent change

What is 20% of 200?

- A. 10
- B. 160
- C. 4000
- D. 40

Working / reasoning:

Item percents-005 | Lesson: <https://openexam.site/exams/sat-math/learn/percents/>

QUESTION 8 / From areas to volumes

A cylinder has diameter 12 cm and height 8 cm. Its volume is  $c\pi \text{ cm}^3$ . What is  $c$ ?

Your answer: \_\_\_\_\_

Working / reasoning:

Item sat2-solid-measures-1-4 | Lesson: <https://openexam.site/exams/sat-math/learn/solid-measures/>

# SAT Math: Answers & Explanations

Compare the method or rule as well as the final answer. These explanations are study aids, not official scoring guidance.

QUESTION 1 / linear-001

Answer: 5

1. Subtract 4 from both sides:  $3x = 15$ .
2. Divide both sides by 3:  $x = 5$ .
3. Check:  $3(5) + 4 = 19$ .

QUESTION 2 / exponents-005

Answer: 9

1. The bases are the same and the powers are multiplied.
2. Add the exponents rather than multiplying them.
3.  $n = 4 + 5 = 9$ .

QUESTION 3 / ratios-010

Answer: 60

1. The speed is  $36/3 = 12$  kilometers per hour.
2. Multiply the rate by 5 hours.
3. The distance is 60 kilometers.

QUESTION 4 / geometry-015

Answer: 252

1. The length scale factor is 6.
2. The area factor is its square, 36.
3. The larger area is  $7 \times 36 = 252$ .

QUESTION 5 / slope-018

Answer: 8

1. Use  $y = mx + b$ .
2. Substitute the known point:  $22 = 7(2) + b$ .
3. Subtract 14:  $b = 8$ .

QUESTION 6 / quadratics-001

Answer: 3

1. A product is zero if at least one factor is zero.
2. The roots are  $x = 3$  and  $x = -4$ .
3. The larger root is 3.

QUESTION 7 / percents-005

Answer: 40

1. 20% equals  $20/100 = 1/5$ .
2. Multiply 200 by  $1/5$ .
3. The result is 40.

QUESTION 8 / sat2-solid-measures-1-4

Answer: 288

1. The radius is half the diameter, 6 cm.
2.  $\text{Volume} = \pi r^2 h = \pi(6)^2(8)$ .
3. The coefficient is 288; volume has cubic units.

## References and scope notes

The questions and teaching explanations are original catalog materials. References support the selected concepts; they are not endorsements or a reproduced official examination bank.

Official mathematics skills

<https://satsuite.collegeboard.org/practice/student-question-bank/math>

Siyavula Grade 10 mathematics

<https://www.siyavula.com/read>

Slope and slope-intercept form

<https://www.youtube.com/watch?v=wKJ3DH9qz1w>

Quadratic equations by factoring

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<https://www.youtube.com/watch?v=P7RXL2O56Cw>

SAT official Geometry and Trigonometry scope

<https://satsuite.collegeboard.org/sat/whats-on-the-test/math/types/geometry-trigonometry>

OpenExamPrep SAT Math archived topic research

<https://open-exam-prep.com/study-guides/sat-math>

Content version 2026-10-27. Source catalog SHA-256: 6ee80944cc05ff3d62ab348aa29cb8f7a18811de7f7d62ab01282b55a886addf

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