

PSAT 8/9: Math

The Math Test covers a range of math practices, with an emphasis on problem solving, modeling, using tools strategically, and using algebraic structure. Instead of testing on every math topic there is, the PSAT 8/9 asks students to use the math that they will rely on most in all sorts of situations. Questions on the Math Test are designed to mirror the problem solving and modeling they'll do in: College math, science, and social science courses, the jobs that they hold, and their personal lives. For instance, to answer some questions they will need to use one or two steps—because in the real world a single calculation is rarely enough to get the job done.

Quick Facts

- Most math questions will be multiple choice, but some—called grid-ins—ask students to come up with the answer rather than select the answer.
- The Math Test is divided into two portions: Math Test—Calculator and Math Test—No Calculator.
- Some parts of the test include several questions about a single scenario.

Focus The Math Test will focus in depth on two of the areas of math that play the biggest role in a wide range of college majors and careers:

- **Heart of Algebra**, which focuses on the mastery of linear equations and systems.
- **Problem Solving and Data Analysis**, which is about being quantitatively literate.

There will also be some **Passport to Advanced Math** questions; these require the manipulation of complex equations.

What the Math Test Measures

Fluency - The Math Test is a chance to show that students:

- Carry out procedures flexibly, accurately, efficiently, and strategically.
- Solve problems quickly by identifying and using the most efficient solution approaches. This might involve solving a problem by inspection, finding a shortcut, or reorganizing the information you've been given.

Conceptual Understanding Students will demonstrate their grasp of math concepts, operations, and relations. For instance, they might be asked to make connections between properties of linear equations, their graphs, and the contexts they represent.

Applications These real-world problems ask you to analyze a situation, determine the essential elements required to solve the problem, represent the problem mathematically, and carry out a solution.

Calculator Use In the Math Test–Calculator portion of the test, students will be able to focus on complex modeling and reasoning because the calculator can save time. However, the calculator is, like any tool, only as smart as the person using it. The Math Test includes some questions where it's better not to use a calculator, even though students are allowed to. In these cases, students who make use of structure or their ability to reason will probably finish before students who use a calculator. The Math Test–No Calculator portion of the test makes it easier to assess fluency in math and understanding of some math concepts. It also tests well-learned technique and number sense.

Grid-In Questions Although most of the questions on the Math Test are multiple choice, **18% are student-produced response questions**, also known as grid-ins. Instead of choosing a correct answer from a list of options, they will need to solve problems and enter their answers in the grids provided on the answer sheet.

Gridding-In Answers

- Mark no more than one circle in any column.
- Only answers indicated by filling in the circle will be scored (you won't receive credit for anything written in the boxes located above the circles).
- It doesn't matter in which column you begin entering their answers; as long as the responses are recorded within the grid area, you'll receive credit.
- The grid can hold only four decimal places and can only accommodate positive numbers and zero.
- Unless a problem indicates otherwise, answers can be entered on the grid as a decimal or a fraction.
- Fractions like $\frac{3}{24}$ do not need to be reduced to their lowest terms.
- All mixed numbers need to be converted to improper fractions before being recorded in the grid.
- If the answer is a repeating decimal, students must grid the most accurate value the grid will accommodate.

Below is a sample of the instructions students will see on the test

Write answer in boxes.

Grid in result.

Answer: $\frac{7}{12}$

Fraction line

Answer: 2.5

Decimal point

Answer: 201

Either position is correct.

Acceptable ways to grid $\frac{2}{3}$ are:

The image shows three examples of grid-in answers. The first is a fraction $\frac{7}{12}$ with the numerator '7', a fraction line, and the denominator '12'. The second is a decimal '2.5' with a decimal point. The third is the number '201'. Each example shows a grid with bubbles filled in for the digits. Below the decimal example, three more grids show acceptable ways to grid $\frac{2}{3}$ as a decimal: '0.666', '0.6666', and '0.6667'.