

Computer-Based Released Items

Grade 5 MCAS Mathematics

Spring 2025

The spring 2025 grade 5 Mathematics test was administered in two formats: a computer-based version and a paper-based version. Most students took the computer-based test. The paper-based test was offered as an accommodation for eligible students who were unable to use a computer. More information can be found on the MCAS Test Administration Resources page at www.doe.mass.edu/mcas/admin.html.

The Department of Elementary and Secondary Education is releasing items from both versions of the test to provide information about the knowledge and skills that students are expected to demonstrate.

- Released items from the **computer-based test** are available online at mcas.onlinehelp.cognia.org/released-items.
- Released items from the **paper-based test** are available in PDF format on the Department's website at www.doe.mass.edu/mcas/release.html.

This document provides information about each released item from the *computer-based test*, including the following: reporting category, standard covered, item type, item description, and correct answer (for selected-response and short-answer items only). This information is also provided for unreleased operational items. Sample responses and scoring guidelines for constructed-response items will be posted at www.doe.mass.edu/mcas/student/.

A Note about Testing Mode

Most of the operational items on the grade 5 Mathematics test were the same, regardless of whether a student took the computer-based version or the paper-based version. In places where a technology-enhanced item was used on the computer-based test, an adapted version of the item was created for use on the paper test. These adapted paper items were multiple-choice or multiple-select items that tested the same Mathematics content and assessed the same standard as the technology-enhanced item.

Grade 5 Mathematics
Spring 2025 Computer-Based Released Operational Items

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description	Correct Answer (SR)**
1	<i>Number and Operations in Base Ten</i>	5.NBT.B.5	SR	Determine the product of a multiplication problem with a three-digit whole number and a two-digit whole number.	D
2	<i>Measurement and Data</i>	5.MD.C.4	SR	Determine the volume of a figure by counting cubes with dimensions in non-standard units.	B
3	<i>Operations and Algebraic Thinking</i>	5.OA.B.3	SA	Create an ordered pair from two corresponding terms in two given number patterns and graph the ordered pair on a coordinate plane.	<i>see page 6</i>
4	<i>Number and Operations in Base Ten</i>	5.NBT.A.4	SR	Determine which decimal would round to a given amount when rounded to the nearest hundredth.	B
5	<i>Number and Operations in Base Ten</i>	5.NBT.A.1	SR	Determine the relationship of the value of a digit in one number compared to that digit in another number.	D
6	<i>Number and Operations in Base Ten</i>	5.NBT.B.6	SA	Determine the quotient of a three-digit dividend and a two-digit divisor.	37
7	<i>Measurement and Data</i>	5.MD.A.1	CR	Complete conversions between yards, feet, and inches and solve word problems involving addition and subtraction with conversion of lengths in both whole-number and fractional units.	
8	<i>Geometry</i>	5.G.B.4	SR	Identify the statements that correctly classify quadrilaterals in a hierarchy.	B,C,E
9	<i>Number and Operations-Fractions</i>	5.NF.B.3	SR	Interpret a fraction as the division of the numerator by the denominator.	C
10	<i>Operations and Algebraic Thinking</i>	5.OA.A.2	SR	Complete a statement that describes a given numerical expression with parentheses without evaluating it.	<i>see page 6</i>
11	<i>Number and Operations in Base Ten</i>	5.NBT.B.6	SR	Solve a word problem by finding the quotient of a four-digit dividend and a two-digit divisor.	B
12	<i>Operations and Algebraic Thinking</i>	5.OA.A.2	SR	Identify the word form of a given numerical expression.	D
13	<i>Operations and Algebraic Thinking</i>	5.OA.B.3	SR	Given the rules and starting values of two number patterns, describe the relationship of the corresponding terms of the two patterns.	A
14	<i>Number and Operations-Fractions</i>	5.NF.B.5	CR	Identify a product greater than one factor based on the size of the other factor, determine factors that will give a product that is equal to the other factor, and reason about the size of products based on the size of the factors.	

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description	Correct Answer (SR)**
15	<i>Measurement and Data</i>	5.MD.C.5	SR	Determine the volume of two right rectangular prisms that, when combined, create a prism with a total volume that falls within a given range.	<i>see page 6</i>
16	<i>Geometry</i>	5.G.B.4	SR	Determine which statement about the angles of a triangle is true based on the types of angles.	B
17	<i>Number and Operations-Fractions</i>	5.NF.B.4	SR	Determine the area of a rectangle with fractional side lengths.	C
18	<i>Geometry</i>	5.G.A.2	SR	Determine which point on a coordinate plane corresponds to a given ordered pair.	C
19	<i>Number and Operations in Base Ten</i>	5.NBT.A.3	SR	Match decimal numbers in expanded form with decimals in number form and compare two decimal numbers to thousandths.	<i>see page 7</i>
20	<i>Number and Operations-Fractions</i>	5.NF.B.7	SA	Determine the quotient of a whole number divided by a unit fraction.	<i>see page 7</i>

* Mathematics item types are selected-response (SR), short-answer (SA), and constructed-response (CR).

** Answers are provided here for selected-response and short-answer items only. Pages 6–7 of this document provide correct answers for technology-enhanced (TE) items. Sample responses and scoring guidelines for constructed-response items will be posted at www.doe.mass.edu/mcas/student/default.html.

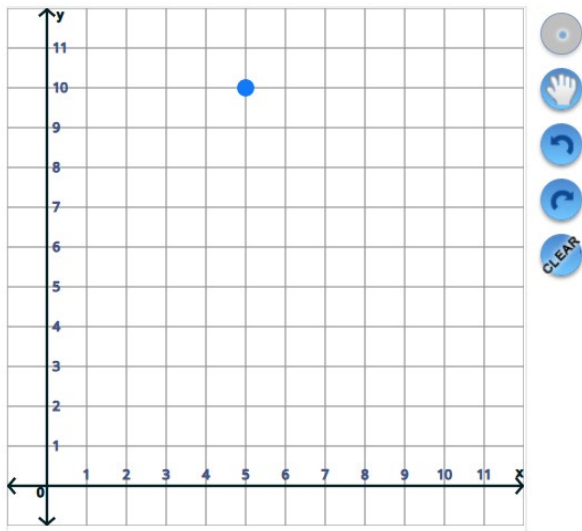
Grade 5 Mathematics
Spring 2025 Computer-Based Unreleased Operational Items

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
21	<i>Number and Operations–Fractions</i>	5.NF.A.1	SA	Determine the sum of two fractions with unlike denominators.
22	<i>Operations and Algebraic Thinking</i>	5.OA.A.1	CR	Identify and correct an error in the computation of a numerical expression and place parentheses to make the numerical expression equivalent to a different given value.
23	<i>Number and Operations–Fractions</i>	5.NF.B.6	SR	Solve a real-world problem by finding the product of a mixed number and a fraction.
24	<i>Number and Operations–Fractions</i>	5.NF.B.4	SR	Determine the product of a fraction and a whole number.
25	<i>Geometry</i>	5.G.A.1	SR	Describe the relationships between the coordinates of a given point graphed on a coordinate plane and the origin in terms of the x - and y -axes.
26	<i>Number and Operations in Base Ten</i>	5.NBT.B.7	SR	Determine the product, sum, and difference of three different expressions with decimal numbers.
27	<i>Number and Operations–Fractions</i>	5.NF.B.7	SR	Determine the word problem that can be solved by dividing a unit fraction by a whole number.
28	<i>Measurement and Data</i>	5.MD.C.3	SR	Identify a method to determine the volume of a right rectangular prism using unit cubes.
29	<i>Number and Operations in Base Ten</i>	5.NBT.B.7	SA	Solve a word problem by dividing a decimal by a whole number.
30	<i>Measurement and Data</i>	5.MD.B.2	SA	Complete a line plot using a given list of data and use information found in a given line plot to add fractions and mixed numbers with like denominators to solve a word problem.
31	<i>Geometry</i>	5.G.B.3	SR	Identify which shapes always have a set of given attributes.
32	<i>Number and Operations in Base Ten</i>	5.NBT.A.4	SA	Round a given decimal number to the nearest tenth.
33	<i>Number and Operations in Base Ten</i>	5.NBT.A.2	CR	Use the patterns in the number of zeros and the decimal point in decimal numbers to find products and quotients when multiplying and dividing by a power of 10.
34	<i>Number and Operations–Fractions</i>	5.NF.B.7	SR	Find the quotient of a fraction and a whole number in a real-world context.
35	<i>Number and Operations in Base Ten</i>	5.NBT.B.5	SA	Determine the product of two three-digit numbers.
36	<i>Number and Operations–Fractions</i>	5.NF.B.3	SA	Solve word problems involving division of two whole numbers leading to answers that are fractions.
37	<i>Number and Operations in Base Ten</i>	5.NBT.A.1	SR	Compare the value of a digit in one decimal number to the value of that digit in another decimal number.
38	<i>Number and Operations–Fractions</i>	5.NF.A.2	SR	Solve a word problem by finding the difference of a mixed number and a fraction with unlike denominators, including regrouping.

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
39	<i>Geometry</i>	5.G.B.3	SR	Identify which of a set of given shapes are parallelograms.
40	<i>Measurement and Data</i>	5.MD.C.5	SR	Identify the expression that can be used to find the volume of a right rectangular prism that is filled with unit cubes.

* Mathematics item types are: selected-response (SR), short-answer (SA), and constructed-response (CR).

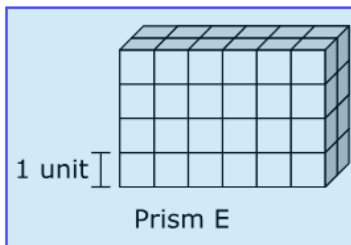
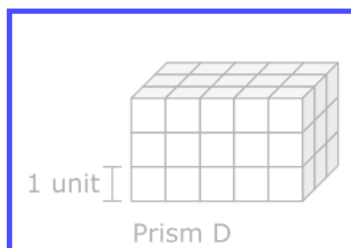
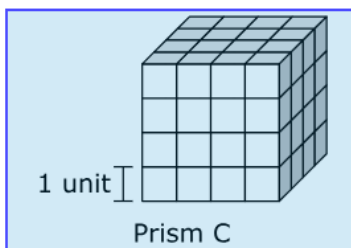
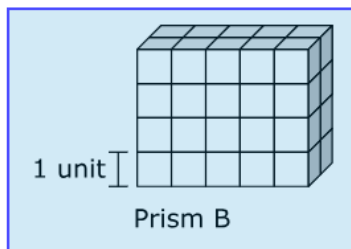
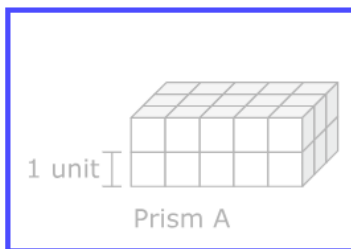
Correct Answer for CBT Item #3: Technology-Enhanced Item



Correct Answer for CBT Item #10: Technology-Enhanced Item

The value of the teacher's expression is times as large as the value of .

Correct Answer for CBT Item #15: Technology-Enhanced Item



Correct Answer for CBT Item #19: Technology-Enhanced Item

Part A

68.459

$6 \times 10 + 8 \times 1 + \frac{4}{10} + \frac{5}{100} + \frac{9}{1000}$

68.495

$6 \times 10 + 8 \times 1 + \frac{4}{10} + \frac{95}{1000}$

Part B

68.495

>

68.459

OR

68.459

<

68.495

Correct Answer for CBT Item #20: Technology-Enhanced Item

140

OR

$\frac{140}{1}$