RIDE Rhode Island Department of Education

Release of Spring 2025 RICAS Test Items

from the

Grade 5 Mathematics Paper-Based Test

July 2025
Rhode Island Department of Education

This document was prepared by the
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Overview of Grade 5 Mathematics Test

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.

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, multiple-select, or short-answer items that tested the same Mathematics content and assessed the same standard as the technology-enhanced item.

This document displays released items from the paper-based test. Released items from the computer-based test are available on the RICAS Resource Center website at ricas.onlinehelp.cognia.org/released-items/.

Test Sessions and Content Overview

The grade 5 Mathematics test was made up of two separate test sessions. Each session included selected-response, short-answer, and constructed-response questions. On the paper-based test, the selected-response questions were multiple-choice items and multiple-select items, in which students select the correct answer(s) from among several answer options.

Standards and Reporting Categories

The grade 5 Mathematics test was based on standards in the five major domains for grade 5 in the *Massachusetts Curriculum Framework for Mathematics* (2017). The five major domains are listed below.

- Operations and Algebraic Thinking
- Number and Operations in Base Ten
- Number and Operations—Fractions
- Measurement and Data
- Geometry

The *Massachusetts Curriculum Framework for Mathematics* is available on the Department website at www.doe.mass.edu/frameworks/current.html.

Mathematics test results are reported under five MCAS reporting categories, which are identical to the five framework domains listed above.

The tables at the conclusion of this document provide the following information about each released and unreleased operational item: reporting category, standard(s) covered, item type, and item description. The correct answers for released selected-response and short-answer questions are also displayed in the released item table.

Reference Materials and Tools

Each student taking the grade 5 Mathematics test was provided with a ruler and a grade 5 Mathematics Reference Sheet. A copy of the reference sheet can be found on the next page of this document.

During both Mathematics test sessions, the use of authorized bilingual word-to-word dictionaries and glossaries was allowed for students who are currently or were ever reported as English learners. No calculators, other reference tools, or materials were allowed.

Rhode Island Comprehensive Assessment System
Grade 5 Mathematics Reference Sheet

CONVERSIONS

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 mile = 5280 feet
1 mile = 1760 yards

1 pound = 16 ounces
1 ton = 2000 pounds

AREA (*A*) FORMULAS

square . . . . . $A = s \times s$
(s = length of a side)

rectangle . . . . . $A = b \times h$
(b = length of base; h = height)
OR
$A = l \times w$
(l = length; w = width)

VOLUME (*V*) FORMULAS

right rectangular prism . . . . $V = l \times w \times h$
(l = length; w = width; h = height)
OR
$V = B \times h$
(B = area of base; h = height)

Grade 5 Mathematics

SESSION 1

This session contains 10 questions.

You may use your reference sheet during this session.
*You may **not** use a calculator during this session.*

Directions

Read each question carefully and then answer it as well as you can. You must record all answers in this Test & Answer Booklet.

For some questions, you will mark your answers by filling in the circles in your Test & Answer Booklet. Make sure you darken the circles completely. Do not make any marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely.

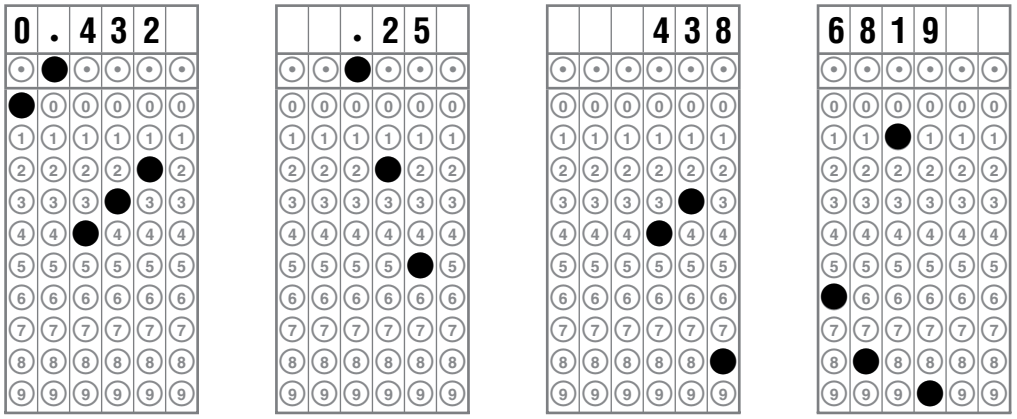
For other questions, you will need to fill in an answer grid. Directions for completing questions with answer grids are provided on the next page.

If a question asks you to show or explain your work, you must do so to receive full credit. Write your response in the space provided. Only responses written within the provided space will be scored.

Directions for Completing Questions with Answer Grids

1. Work the question and find an answer.
2. Enter your answer in the answer boxes at the top of the answer grid.
3. Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.
4. Under each answer box, fill in the circle that matches the number or symbol you wrote above. Make a solid mark that completely fills the circle.
5. Do not fill in a circle under an unused answer box.
6. Fractions cannot be entered into an answer grid and will not be scored. Enter fractions as decimals.
7. If you need to change an answer, be sure to erase your first answer completely.
8. See below for examples of how to correctly complete an answer grid.

Examples



1 The drama club sold 378 tickets to a school play for $12 each.

What is the total amount of money the drama club collected by selling tickets to the play?

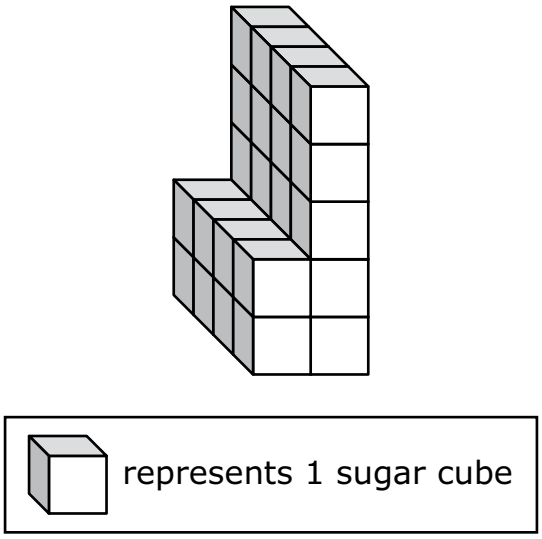
Ⓐ $3,426

Ⓑ $3,436

Ⓒ $4,426

Ⓓ $4,536

2 A figure is made out of sugar cubes, with no gaps or overlaps, as shown.



What is the total volume, in sugar cubes, of the figure?

Ⓐ 22 sugar cubes

Ⓑ 28 sugar cubes

Ⓒ 35 sugar cubes

Ⓓ 40 sugar cubes

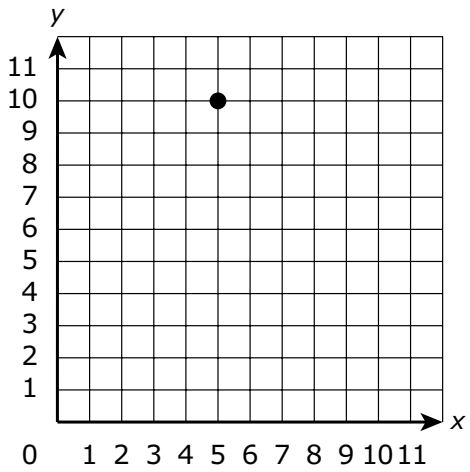
3 The first four terms of two numerical patterns are shown in this table.

x	*y*
1	2
2	4
3	6
4	8
?	?

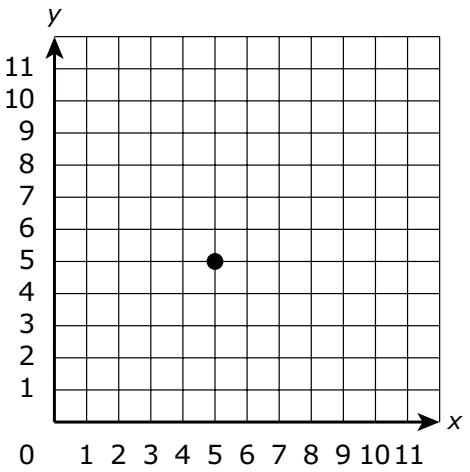
The corresponding terms of the two patterns can be written as ordered pairs (x, y).

Which coordinate plane shows an ordered pair that represents the **fifth** term in each pattern?

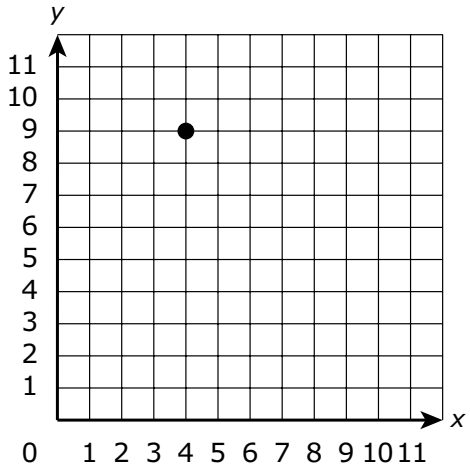
Ⓐ



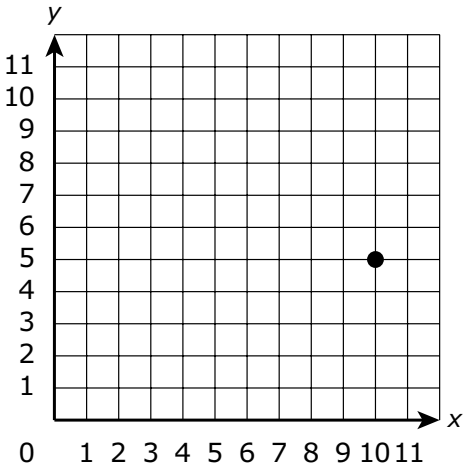
Ⓑ



Ⓒ



Ⓓ



4 In a science experiment, Corine rounded the mass of a chemical to the nearest hundredth of a gram. The rounded mass of the chemical is 21.65 grams.

Which of the following could be the actual mass of the chemical?

Ⓐ 21.655 grams

Ⓑ 21.647 grams

Ⓒ 21.644 grams

Ⓓ 21.605 grams

5 The value of the 6 in 262.51 is how many times the value of the 6 in 190.6?

Ⓐ $\frac{1}{10}$

Ⓑ $\frac{1}{100}$

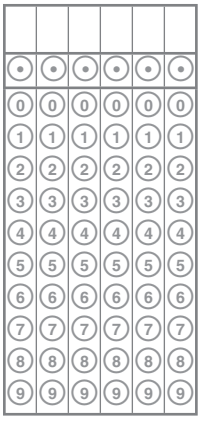
Ⓒ 10

Ⓓ 100

6 Find the quotient.

$$703 \div 19$$

Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.



This question has four parts. Be sure to label each part of your response.

7 An artist uses pieces of wire to create sculptures. The lengths of five different pieces of wire are shown in this table.

Lengths of Wire

Piece	Length
R	30 inches
S	4 yards
T	9 feet
Y	90 inches
Z	$\frac{3}{2}$ feet

A. What is the length, in **inches**, of piece T?

B. What is the difference, in **feet**, between the length of piece S and the length of piece T? Show or explain how you got your answer.

C. The artist wants to create a design that requires a total length of 10 feet of wire. The artist will attach piece Y to piece Z, with no gaps or overlaps.

Will the new piece formed by attaching piece Y to piece Z have a total length of 10 feet? Show or explain how you got your answer.

D. The artist wants to build a sculpture that uses a total length of $14\frac{1}{2}$ feet of wire. The artist will attach pieces of wire with no gaps or overlaps.

Which pieces of wire can the artist attach to have a total length of **exactly** $14\frac{1}{2}$ feet? Show or explain how you got your answer.

Write your answers on the next page.

7

8 Which of the following statements are true?

Select the **three** correct answers.

Ⓐ All rectangles are squares.

Ⓑ All squares are rectangles.

Ⓒ All squares are rhombuses.

Ⓓ All rhombuses are rectangles.

Ⓔ All rhombuses are parallelograms.

Ⓕ All parallelograms are rhombuses.

9 Which of the following expressions is equivalent to $\frac{9}{12}$?

Ⓐ 9×12

Ⓑ $12 \div 9$

Ⓒ $9 \div 12$

Ⓓ $12 - 9$

10 A teacher wrote this expression on the board.

$$(34 - 16) \times 12$$

Which statement about the teacher's expression is true?

Ⓐ The value of the teacher's expression is 12 times as large as the value of 12×16.

Ⓑ The value of the teacher's expression is 12 times as large as the value of $34 - 16$.

Ⓒ The value of the teacher's expression is 16 times as large as the value of $34 - 16$.

Ⓓ The value of the teacher's expression is 16 times as large as the value of 12×16.

Grade 5 Mathematics

SESSION 2

This session contains 10 questions.

You may use your reference sheet during this session.
*You may **not** use a calculator during this session.*

Directions

Read each question carefully and then answer it as well as you can. You must record all answers in this Test & Answer Booklet.

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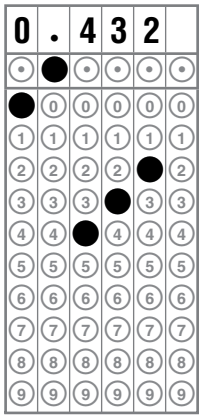
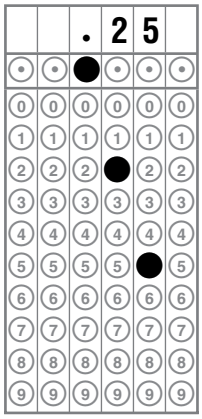
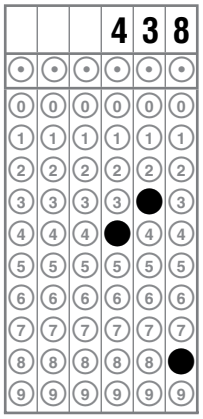
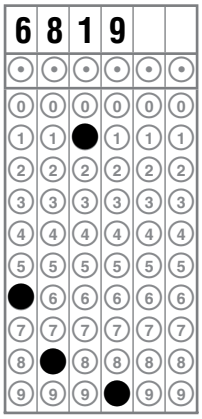
8. See below for examples of how to correctly complete an answer grid.

Examples









11 Madeline wants to save $1512. To reach her goal, she will save the same amount of money each month for 12 months.

What is the total amount of money Madeline should save each month to reach her goal?

Ⓐ $101

Ⓑ $126

Ⓒ $301

Ⓓ $326

12 Which of the following is equivalent to this expression?

$$(4 \times 9) - 8$$

Ⓐ 8 less than the sum of 4 and 9

Ⓑ 4 times the product of 9 and 8

Ⓒ 4 times the difference of 9 and 8

Ⓓ 8 less than the product of 4 and 9

13 A student created two patterns.

- Pattern P starts with the number 3 and uses the rule "add 3."
- Pattern W starts with the number 1 and uses the rule "add 1."

Which of the following statements describes the relationship between the corresponding terms in Pattern P and Pattern W?

Ⓐ Each term in Pattern W is $\frac{1}{3}$ the value of the corresponding term in Pattern P.

Ⓑ Each term in Pattern P is $\frac{1}{3}$ the value of the corresponding term in Pattern W.

Ⓒ Each term in Pattern W is 3 times the value of the corresponding term in Pattern P.

Ⓓ Each term in Pattern P is 3 greater than the value of the corresponding term in Pattern W.

This question has four parts. Be sure to label each part of your response.

14 A. A teacher wrote three expressions.

$\frac{10}{8} \times \frac{5}{8}$ $\frac{8}{8} \times \frac{5}{8}$ $\frac{3}{8} \times \frac{5}{8}$

Which expression has a product **greater than** $\frac{5}{8}$?

B. Then, the teacher wrote this expression.

$15 \times \frac{2}{3}$

Is the product of the expression greater than, less than, or equal to $\frac{2}{3}$? Explain your reasoning.

C. Next, the teacher asked a student to find the products of these expressions.

$30 \times \frac{5}{4}$ $30 \times \frac{3}{4}$

Without multiplying, determine which of these expressions has a product **greater than** 30. Explain how you know your answer is correct.

D. Finally, the teacher wrote this equation.

$$\frac{13}{7} \times \boxed{?} = \frac{13}{7}$$

Write **two** fractions that can replace the $\boxed{?}$ to make the equation true. Explain how you know your answers are correct.

Write your answers on the next page.

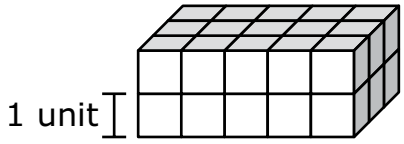
14

15 Two of these right rectangular prisms will be put together to make a new solid figure.

Which two of the prisms will have a **total** volume that is greater than 70 cubic units **and** less than 76 cubic units when put together?

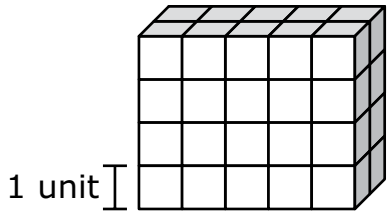
Select the **two** correct answers.

Ⓐ



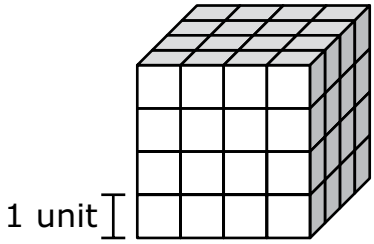
Prism A

Ⓑ



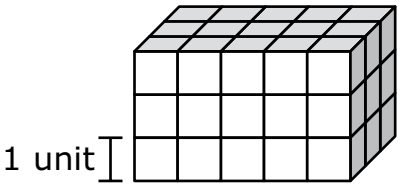
Prism B

Ⓒ



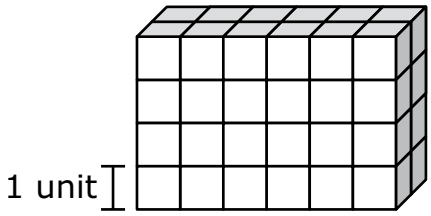
Prism C

Ⓓ



Prism D

Ⓔ



Prism E

16 Which of the following statements about the angles of a triangle is true?

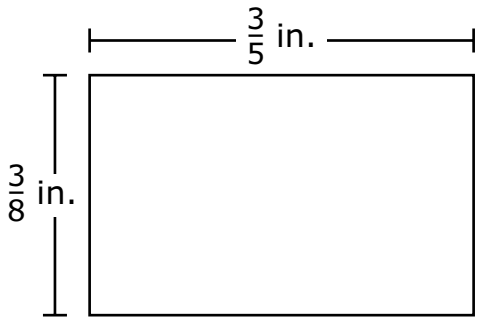
Ⓐ A triangle can have 2 right angles.

Ⓑ A triangle can have 3 acute angles.

Ⓒ A triangle can have 2 obtuse angles.

Ⓓ A triangle can have 1 acute, 1 obtuse, and 1 right angle.

17 A rectangle has a length of $\frac{3}{5}$ inch (in.) and a width of $\frac{3}{8}$ inch, as shown in this diagram.



What is the area, in square inches, of the rectangle?

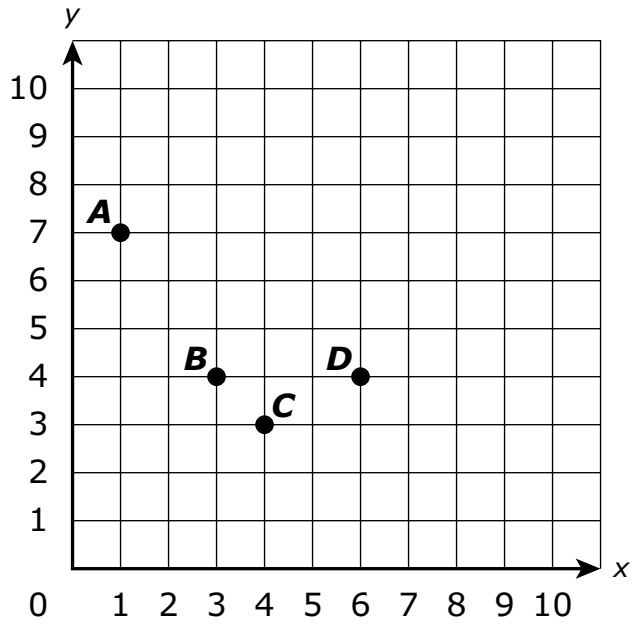
Ⓐ $\frac{3}{40}$ square inch

Ⓑ $\frac{6}{40}$ square inch

Ⓒ $\frac{9}{40}$ square inch

Ⓓ $\frac{39}{40}$ square inch

18 Each point on this coordinate plane represents the location of a building in a town.



The location of the elementary school is represented by the point (4,3).

Which point represents the location of the elementary school?

Ⓐ point *A*

Ⓑ point *B*

Ⓒ point *C*

Ⓓ point *D*

This question has two parts.

19 **Part A**

Which of the following equations show the decimal numbers 68.495 and 68.459 written in expanded form?

Select the **two** correct answers.

Ⓐ $68.495 = 6 \times 10 + 8 \times 1 + \frac{495}{100}$

Ⓑ $68.495 = 6 \times 10 + 8 \times 1 + \frac{4}{10} + \frac{95}{100}$

Ⓒ $68.495 = 6 \times 10 + 8 \times 1 + \frac{4}{10} + \frac{95}{1000}$

Ⓓ $68.459 = 6 \times 10 + 8 \times 1 + \frac{4}{1} + \frac{5}{10} + \frac{9}{100}$

Ⓔ $68.459 = 6 \times 10 + 8 \times 1 + \frac{4}{1} + \frac{5}{100} + \frac{9}{1000}$

Ⓕ $68.459 = 6 \times 10 + 8 \times 1 + \frac{4}{10} + \frac{5}{100} + \frac{9}{1000}$

Part B

Compare the numbers 68.495 and 68.459.

Which of the following correctly compare the two numbers?

Select the **two** correct answers.

Ⓐ $68.459 < 68.495$

Ⓑ $68.459 > 68.495$

Ⓒ $68.495 < 68.459$

Ⓓ $68.495 > 68.459$

Ⓔ $68.495 = 68.459$

20 An expression is shown.

$$14 \div \frac{1}{10}$$

What is the value of the expression?

Ⓐ $\frac{1}{140}$

Ⓑ $\frac{14}{10}$

Ⓒ 14

Ⓓ 140

Grade 5 Mathematics
Spring 2025 Released Operational Items

PBT Item No.	Page No.	Reporting Category	Standard	Item Type*	Item Description	Correct Answer (SR)**
1	5	*Number and Operations in Base Ten*	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	5	*Measurement and Data*	5.MD.C.4	SR	Determine the volume of a figure by counting cubes with dimensions in non-standard units.	B
3	6	*Operations and Algebraic Thinking*	5.OA.B.3	SR	Identify the graph of an ordered pair on a coordinate plane that represents a term in two given number patterns.	A
4	7	*Number and Operations in Base Ten*	5.NBT.A.4	SR	Determine which decimal would round to a given amount when rounded to the nearest hundredth.	B
5	7	*Number and Operations in Base Ten*	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	8	*Number and Operations in Base Ten*	5.NBT.B.6	SA	Determine the quotient of a three-digit dividend and a two-digit divisor.	37
7	9–10	*Measurement and Data*	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	11	*Geometry*	5.G.B.4	SR	Identify the statements that correctly classify quadrilaterals in a hierarchy.	B,C,E
9	11	*Number and Operations–Fractions*	5.NF.B.3	SR	Interpret a fraction as the division of the numerator by the denominator.	C
10	11	*Operations and Algebraic Thinking*	5.OA.A.2	SR	Identify the statement that describes a given numerical expression with parentheses without evaluating it.	B
11	14	*Number and Operations in Base Ten*	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	14	*Operations and Algebraic Thinking*	5.OA.A.2	SR	Identify the word form of a given numerical expression.	D
13	15	*Operations and Algebraic Thinking*	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	16–17	*Number and Operations–Fractions*	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.	
15	18	*Measurement and Data*	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.	A,D
16	19	*Geometry*	5.G.B.4	SR	Determine which statement about the angles of a triangle is true based on the types of angles.	B
17	19	*Number and Operations–Fractions*	5.NF.B.4	SR	Determine the area of a rectangle with fractional side lengths.	C
18	20	*Geometry*	5.G.A.2	SR	Determine which point on a coordinate plane corresponds to a given ordered pair.	C
19	21	*Number and Operations in Base Ten*	5.NBT.A.3	SR	Match decimal numbers in number form with decimals in expanded form and compare two decimal numbers to thousandths.	C,F;A,D
20	22	*Number and Operations–Fractions*	5.NF.B.7	SR	Determine the quotient of a whole number divided by a unit fraction.	D

* 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. Sample responses and scoring guidelines for any constructed-response items will be posted to the Department's website later this year.

Grade 5 Mathematics
Spring 2025 Unreleased Operational Items

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
21	*Number and Operations–Fractions*	5.NF.A.1	SR	Determine the sum of two fractions with unlike denominators.
22	*Operations and Algebraic Thinking*	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	*Number and Operations–Fractions*	5.NF.B.6	SR	Solve a real-world problem by finding the product of a mixed number and a fraction.
24	*Number and Operations–Fractions*	5.NF.B.4	SR	Determine the product of a fraction and a whole number.
25	*Geometry*	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	*Number and Operations in Base Ten*	5.NBT.B.7	SR	Determine the product, sum, and difference of three different expressions with decimal numbers.
27	*Number and Operations–Fractions*	5.NF.B.7	SR	Determine the word problem that can be solved by dividing a unit fraction by a whole number.
28	*Measurement and Data*	5.MD.C.3	SR	Identify a method to determine the volume of a right rectangular prism using unit cubes.
29	*Number and Operations in Base Ten*	5.NBT.B.7	SA	Solve a word problem by dividing a decimal by a whole number.
30	*Measurement and Data*	5.MD.B.2	SR	Determine which line plot represents 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	*Geometry*	5.G.B.3	SR	Identify which shapes always have a set of given attributes.
32	*Number and Operations in Base Ten*	5.NBT.A.4	SA	Round a given decimal number to the nearest tenth.
33	*Number and Operations in Base Ten*	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	*Number and Operations–Fractions*	5.NF.B.7	SR	Find the quotient of a fraction and a whole number in a real-world context.
35	*Number and Operations in Base Ten*	5.NBT.B.5	SA	Determine the product of two three-digit numbers.
36	*Number and Operations–Fractions*	5.NF.B.3	SR	Solve word problems involving division of two whole numbers leading to answers that are fractions.
37	*Number and Operations in Base Ten*	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	*Number and Operations–Fractions*	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.
39	*Geometry*	5.G.B.3	SR	Identify which of a set of given shapes are parallelograms.
40	*Measurement and Data*	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).