RIDE Rhode Island Department of Education

Release of Spring 2025 RICAS Test Items

from the

Grade 4 Mathematics Paper-Based Test

July 2025
Rhode Island Department of Education

This document was prepared by the
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Overview of Grade 4 Mathematics Test

The spring 2025 grade 4 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 4 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 4 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 4 Mathematics test was based on standards in the five domains for grade 4 in the *Massachusetts Curriculum Framework for Mathematics* (2017). The five 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 4 Mathematics test was provided with a ruler.

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.

Grade 4 Mathematics

SESSION 1

This session contains 10 questions.

*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.

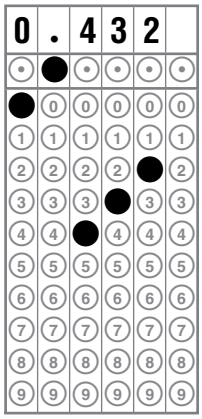
For other questions, you will need to fill in an answer grid. Directions for completing questions with answer grids are provided on the next page.

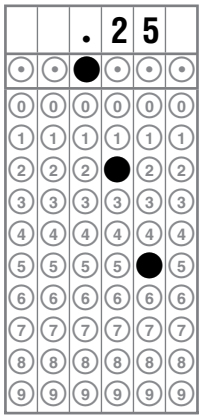
If a question asks you to show or explain your work, you must do so to receive full credit. Write your response in the space provided. Only responses written within the provided space will be scored.

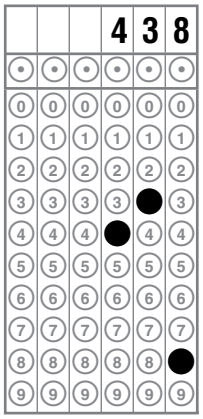
Directions for Completing Questions with Answer Grids

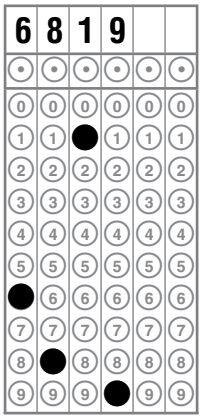
1. Work the question and find an answer.
2. Enter your answer in the answer boxes at the top of the answer grid.
3. Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.
4. Under each answer box, fill in the circle that matches the number or symbol you wrote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

Examples









1 A student wrote this comparison.

$$\boxed{?} > \frac{5}{2}$$

Which of these fractions belongs in the $\boxed{?}$ to make the student's comparison true?

Ⓐ $\frac{4}{2}$

Ⓑ $\frac{10}{4}$

Ⓒ $\frac{3}{5}$

Ⓓ $\frac{21}{6}$

2 Which of these numbers are prime numbers?

Select the **two** correct answers.

Ⓐ 4

Ⓑ 7

Ⓒ 18

Ⓓ 25

Ⓔ 43

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

3 A cafe owner recorded how many desserts were sold on Saturday.

- $\frac{5}{8}$ of the desserts sold were pies.
- $\frac{1}{8}$ of the desserts sold were cakes.
- The remaining desserts sold were cookies.

A. Which equation can be used to find the **total** fraction of desserts sold that were either pies or cakes?

Mark your answer by filling in the correct circle on the next page.

A $\frac{5}{8} + \frac{1}{8} = \frac{48}{16}$

B $\frac{5}{8} + \frac{1}{8} = \frac{6}{16}$

C $\frac{5}{8} + \frac{1}{8} = \frac{22}{8}$

D $\frac{5}{8} + \frac{1}{8} = \frac{6}{8}$

B. Of **all** the desserts sold on Saturday, what fraction were **cookies**? Show or explain how you got your answer.

C. Of all the desserts sold on Saturday, $\frac{4}{10}$ of the desserts were sold in the first two hours.

A worker at the cafe created this equation to represent the fraction of all the desserts sold in the first two hours.

$$\frac{3}{4} + \frac{1}{6} = \frac{4}{10}$$

Is the worker's equation correct? Show or explain how you got your answer.

D. At the beginning of the day on Saturday, the cafe had $6\frac{1}{8}$ pies to sell. At the end of the day, the cafe had $2\frac{3}{8}$ pies remaining.

What is the total amount of pie the cafe sold on Saturday? Show or explain how you got your answer.

Write your answers on the next page.

3 A. Ⓐ $\frac{5}{8} + \frac{1}{8} = \frac{48}{16}$

Ⓑ $\frac{5}{8} + \frac{1}{8} = \frac{6}{16}$

Ⓒ $\frac{5}{8} + \frac{1}{8} = \frac{22}{8}$

Ⓓ $\frac{5}{8} + \frac{1}{8} = \frac{6}{8}$

4 The floor of a room is in the shape of a rectangle. The floor has a length of 15 feet and a width of 12 feet.

What is the perimeter of the floor of the room?

Ⓐ 27 feet

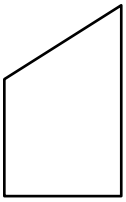
Ⓑ 27 square feet

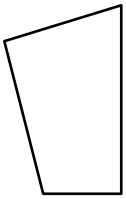
Ⓒ 54 feet

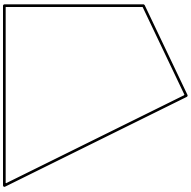
Ⓓ 54 square feet

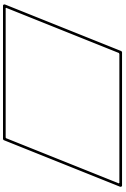
5 Which of these shapes appear to have **at least** one pair of parallel sides?

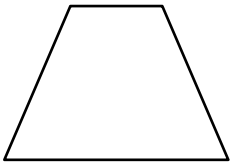
Select the **three** correct answers.

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

Ⓔ 

6 Which of these numbers is 231,198 rounded to the nearest **thousand**?

Ⓐ 230,000

Ⓑ 231,000

Ⓒ 232,000

Ⓓ 240,000

This question has two parts.

7 **Part A**

Which of these numbers in expanded form are shown with an equivalent number in word form?

Select the **three** correct answers.

Ⓐ (6 × 10,000) + (3 × 100) + (8 × 10) + (1 × 1)
sixty thousand, three hundred eighty-one

Ⓑ (6 × 10,000) + (3 × 100) + (8 × 10) + (1 × 1)
sixty-three thousand, eight hundred one

Ⓒ 60,000 + 3,000 + 800 + 1
six thousand, three hundred eighty-one

Ⓓ 60,000 + 3,000 + 800 + 1
sixty-three thousand, eight hundred one

Ⓔ (6 × 1,000) + (3 × 100) + (8 × 10) + (1 × 1)
six thousand, three hundred eighty-one

Ⓕ (6 × 1,000) + (3 × 100) + (8 × 10) + (1 × 1)
sixty thousand, three hundred eighty-one

Part B

Which of these statements are true?

Select the **three** correct answers.

Ⓐ Thirteen thousand, eight hundred thirty-one is **less than** 13,084.

Ⓑ Thirteen thousand, eight hundred thirty-one is **greater than** 13,084.

Ⓒ Thirteen thousand, seven is **less than** 13,084.

Ⓓ Thirteen thousand, seven is **greater than** 13,084.

Ⓔ Thirteen thousand, one hundred six is **less than** 13,084.

Ⓕ Thirteen thousand, one hundred six is **greater than** 13,084.

8 A teacher has 36 jars of paint to use in art class. The number of jars is 4 times the number of students in the class.

Which of these equations can be used to find y, the number of students in the class?

Select the **three** correct answers.

Ⓐ $36 \div 4 = y$

Ⓑ $4 \times y = 36$

Ⓒ $y \div 4 = 36$

Ⓓ $36 \times y = 4$

Ⓔ $36 \div y = 4$

9 What is the measure of an angle that turns through $\frac{1}{4}$ of a circle?

Ⓐ 15°

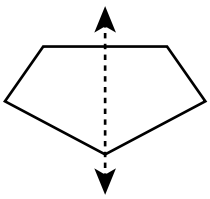
Ⓑ 90°

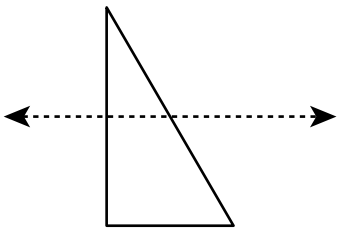
Ⓒ 270°

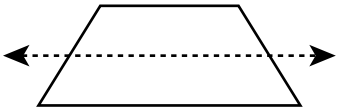
Ⓓ 345°

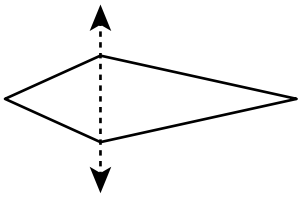
10 Which of these figures show a line that is a line of symmetry?

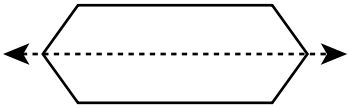
Select the **two** correct answers.

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

Ⓔ 

Grade 4 Mathematics

SESSION 2

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Directions

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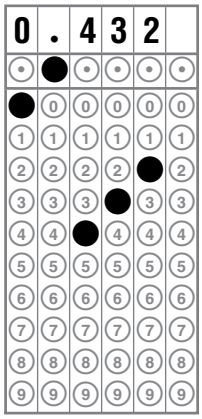
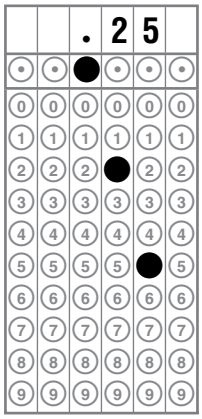
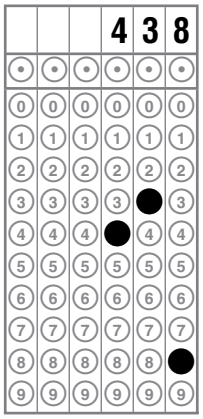
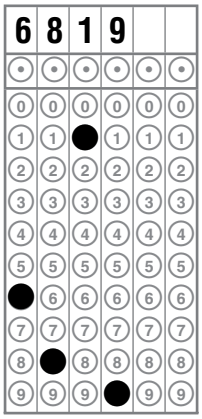








11 There are 5 jugs on a table. Each jug is filled with $\frac{3}{4}$ gallon of water.

What is the total number of gallons of water in all of the jugs?

Ⓐ $\frac{15}{4}$

Ⓑ $\frac{23}{4}$

Ⓒ $\frac{3}{20}$

Ⓓ $\frac{15}{20}$

12 An equation is shown.

$$70{,}368 - 2{,}419 = w$$

What value of w makes the equation true?

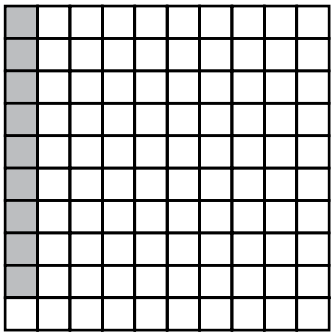
Ⓐ 67,849

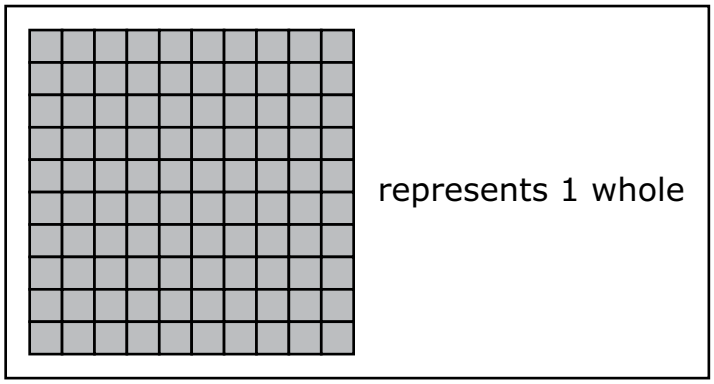
Ⓑ 67,949

Ⓒ 68,151

Ⓓ 68,949

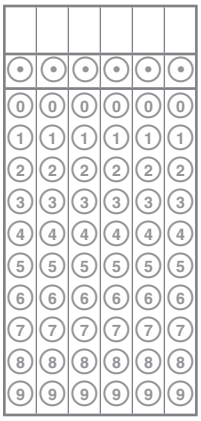
13 The shaded part of this model represents a decimal number that is less than 1.





Write a decimal number that is **less than** the decimal number represented in the model.

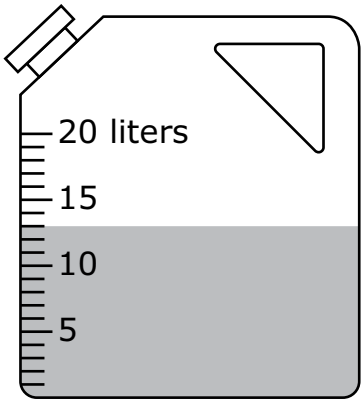
Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.



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

14 A gardener cut grass with a lawnmower and then raked and bagged leaves.

A. Before cutting the grass, the gardener added fuel to the lawnmower from a container. This picture shows the amount of fuel, in liters, **remaining** in the container after adding fuel to the lawnmower.



What is the total amount of fuel, in liters, remaining in the container?

B. The gardener used 2 liters of fuel to cut the grass.

What is the total amount of fuel, in **milliliters**, the gardener used to cut the grass? Show or explain how you got your answer.

C. It took the gardener 3 hours and 45 minutes to rake the leaves.

What is the total amount of time, in **minutes**, it took the gardener to rake the leaves? Show or explain how you got your answer.

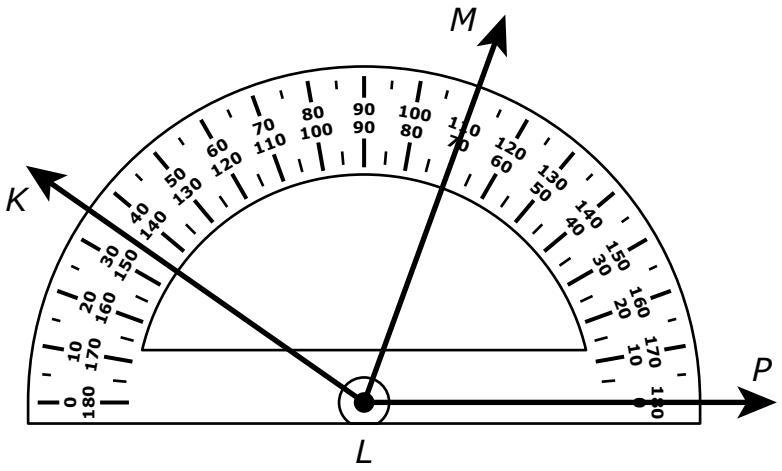
D. The gardener placed the leaves into three large plastic bags: a black bag, a green bag, and a white bag.

- The mass of the black bag was 8 kilograms.
- The mass of the green bag was 7,900 grams.
- The mass of the white bag was **less than** the mass of the black bag but **more than** the mass of the green bag.

What could be the mass, in **grams**, of the **white** bag? Show or explain how you got your answer.

14

15 Angles *PLM* and *KLP* are shown on this protractor.



Which of these statements are true?

Select the **two** correct answers.

Ⓐ The measure of angle *PLM* is 35 degrees.

Ⓑ The measure of angle *PLM* is 70 degrees.

Ⓒ The measure of angle *PLM* is 110 degrees.

Ⓓ The measure of angle *KLP* is 45 degrees.

Ⓔ The measure of angle *KLP* is 145 degrees.

Ⓕ The measure of angle *KLP* is 155 degrees.

16 Which of these numbers are factors of 64?

Select the **three** correct answers.

Ⓐ 6

Ⓑ 8

Ⓒ 16

Ⓓ 24

Ⓔ 64

Ⓕ 128

17 A decimal number is shown.

0.49

Which fraction is equivalent to the decimal number?

Ⓐ $\frac{49}{1}$

Ⓑ $\frac{4}{9}$

Ⓒ $\frac{49}{10}$

Ⓓ $\frac{49}{100}$

18 What is the quotient of this expression?

4,527 ÷ 3

Ⓐ 1,509

Ⓑ 1,519

Ⓒ 1,566

Ⓓ 1,590

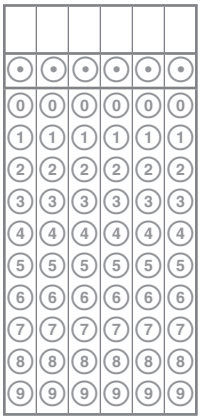
19 A student wrote this subtraction pattern.

234, 225, 216, 207, . . .

The student uses the same rule each time to find the next number in the pattern.

What is the next number in the student's pattern?

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



20 Which of these statements are correct?

Select the **three** correct answers.

Ⓐ 257 × 5 = 1,235 is true.

Ⓑ 257 × 5 = 1,235 is false.

Ⓒ 384 × 9 = 3,456 is true.

Ⓓ 384 × 9 = 3,456 is false.

Ⓔ 601 × 7 = 4,207 is true.

Ⓕ 601 × 7 = 4,207 is false.

Grade 4 Mathematics
Spring 2025 Released Operational Items

PBT Item No.	Page No.	Reporting Category	Standard	Item Type*	Item Description	Correct Answer (SR)**
1	4	*Number and Operations–Fractions*	4.NF.A.2	SR	Identify a fraction that will make a comparison statement with another fraction true.	D
2	4	*Operations and Algebraic Thinking*	4.OA.B.4	SR	Identify whether given numbers are prime.	B,E
3	5–6	*Number and Operations–Fractions*	4.NF.B.3	CR	Solve word problems by identifying an equation that shows the sum of two fractions, justifying if a given equation is correct or not, adding and subtracting fractions, and subtracting mixed numbers.	
4	7	*Measurement and Data*	4.MD.A.3	SR	Determine the perimeter and the units used to measure perimeter of a rectangle.	C
5	7	*Geometry*	4.G.A.1	SR	Identify shapes that have a pair of parallel sides.	A,D,E
6	8	*Number and Operations in Base Ten*	4.NBT.A.3	SR	Round a six-digit whole number to the nearest thousand.	B
7	9	*Number and Operations in Base Ten*	4.NBT.A.2	SR	Match numbers written in expanded form to their equivalent numbers written in word form, and compare numbers written in word form to a number in standard form.	A,D,E; B,C,F
8	10	*Operations and Algebraic Thinking*	4.OA.A.2	SR	Choose multiplication and division equations that can be used to solve a word problem involving a multiplicative comparison.	A,B,E
9	10	*Measurement and Data*	4.MD.C.5	SR	Give the measure of an angle that turns through a portion of a circle.	B
10	11	*Geometry*	4.G.A.3	SR	Determine whether lines on geometric figures represent lines of symmetry.	A,E
11	14	*Number and Operations–Fractions*	4.NF.B.4	SR	Solve a word problem by multiplying a fraction and a whole number.	A
12	14	*Number and Operations in Base Ten*	4.NBT.B.4	SR	Subtract a four-digit whole number from a five-digit whole number.	B
13	15	*Number and Operations–Fractions*	4.NF.C.7	SA	Write a decimal that is less than a number shown on a visual model.	Any decimal less than 0.09.
14	16–17	*Measurement and Data*	4.MD.A.1	CR	Identify a liquid measurement in liters from a diagram, convert liters to milliliters, convert hours and minutes to only minutes, and compare masses given in different metric units.	
15	18	*Measurement and Data*	4.MD.C.6	SR	Determine measures of angles using a protractor.	B,E
16	19	*Operations and Algebraic Thinking*	4.OA.B.4	SR	Identify factors of a given two-digit number.	B,C,E
17	20	*Number and Operations–Fractions*	4.NF.C.6	SR	Determine which fraction is equivalent to a given decimal.	D
18	20	*Number and Operations in Base Ten*	4.NBT.B.6	SR	Determine the whole number quotient of a four-digit dividend and a one-digit divisor.	A
19	21	*Operations and Algebraic Thinking*	4.OA.C.5	SA	Determine the next term of a pattern given the first four terms of the pattern.	198
20	21	*Number and Operations in Base Ten*	4.NBT.B.5	SR	Determine if the given products of a three-digit number and a one-digit number are correct.	B,C,E

* 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 4 Mathematics
Spring 2025 Unreleased Operational Items

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
21	*Number and Operations–Fractions*	4.NF.C.5	SR	Determine which fraction is equivalent to a given fraction with a denominator of 100.
22	*Number and Operations in Base Ten*	4.NBT.B.4	SA	Given one three-digit addend and the four-digit sum, determine the missing addend.
23	*Measurement and Data*	4.MD.C.7	SR	Create an equation that can be used to determine the unknown measure of an angle, given the measure of another angle and the sum of the two angles' measures.
24	*Operations and Algebraic Thinking*	4.OA.C.5	SR	Identify the next shape in a given pattern.
25	*Number and Operations in Base Ten*	4.NBT.B.5	SA	Find the product of two two-digit whole numbers.
26	*Number and Operations–Fractions*	4.NF.C.7	SR	Identify correct comparisons of decimals given in tenths and hundredths.
27	*Number and Operations in Base Ten*	4.NBT.A.1	SR	Determine which division equations are correct based on the place values of the digits in the dividend and divisor.
28	*Number and Operations–Fractions*	4.NF.C.5	SR	Determine which expression is equivalent to a given expression by creating equivalent fractions with denominators of 10 and 100.
29	*Operations and Algebraic Thinking*	4.OA.A.3	CR	Solve multi-step word problems by using addition, multiplication, and division of whole numbers and by writing and solving an equation.
30	*Number and Operations–Fractions*	4.NF.B.4	SR	Determine which fraction model represents the product of a whole number and a unit fraction.
31	*Measurement and Data*	4.MD.B.4	SR	Solve a word problem with addition of fractions by using data from a dot plot.
32	*Operations and Algebraic Thinking*	4.OA.A.1	SR	Determine which written statements of multiplicative comparison represent a given multiplication equation.
33	*Geometry*	4.G.A.2	CR	Classify figures based on the presence or absence of perpendicular, parallel, or congruent sides; explain how a right angle determines the classification of a figure; and justify a mathematical name for a given figure.
34	*Operations and Algebraic Thinking*	4.OA.A.1	SR	Determine which equation with a variable for the unknown can be used to solve a given word problem involving multiplicative comparison.
35	*Number and Operations in Base Ten*	4.NBT.A.3	SR	Determine which six-digit whole numbers round to a given value when rounded to the nearest hundred thousand.
36	*Number and Operations–Fractions*	4.NF.A.2	SR	Determine which mixed numbers have a value that is between two given mixed numbers.
37	*Measurement and Data*	4.MD.A.2	SR	Solve a word problem involving weight.
38	*Number and Operations–Fractions*	4.NF.A.1	SR	Identify a fraction model that represents a fraction that is equivalent to a given fraction and identify equivalent fractions that are greater than 1.
39	*Number and Operations–Fractions*	4.NF.B.3	SR	Identify the correct equation for a real-world problem involving addition of fractions with like denominators and with a sum greater than one.
40	*Measurement and Data*	4.MD.C.5	SR	Given an angle measurement, identify the correct statement about the part of a circle the angle turns through.

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