Rhode Island RICAS
2023 Grade 3 Math

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RIDE Rhode Island Department of Education

Release of Spring 2023 RICAS Test Items

from the

Grade 3 Mathematics Paper-Based Test

June 2023
Rhode Island Department of Education

Overview of Grade 3 Mathematics Test

The spring 2023 grade 3 Mathematics test was a next-generation assessment that 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 3 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.pearsonsupport.com/released-items.

Test Sessions and Content Overview

The grade 3 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 3 Mathematics test was based on standards in the five domains for grade 3 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 paper-based version of the grade 3 Mathematics test was provided with a plastic ruler. An image of the ruler is not reproduced in this document.

During both Mathematics test sessions, the use of bilingual word-to-word dictionaries was allowed for current and former English learner students only. No calculators, other reference tools, or materials were allowed.

Grade 3 Mathematics
SESSION 1

This session contains 11 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.

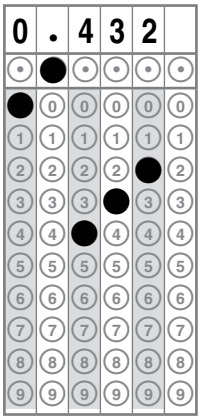
For other questions, you will need to fill in an answer grid. Directions for completing questions with answer grids are provided on the next page.

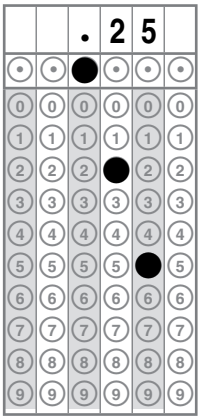
If a question asks you to show or explain your work, you must do so to receive full credit. Write your response in the space provided. Only responses written within the provided space will be scored.

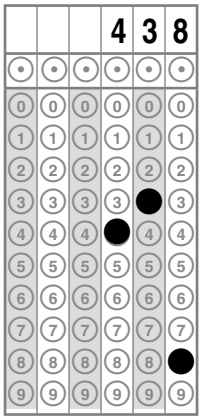
Directions for Completing Questions with Answer Grids

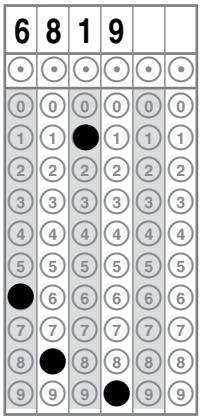
1. Work the question and find an answer.
2. Enter your answer in the answer boxes at the top of the answer grid.
3. Print only one number or symbol in each box. Do not leave a blank box in the middle of an answer.
4. Under each answer box, fill in the circle that matches the number or symbol you wrote 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 Kevin has 54 toy cars. He put all of them into rows of 6 cars each.

How many rows of toy cars does Kevin have?

Ⓐ 6

Ⓑ 7

Ⓒ 8

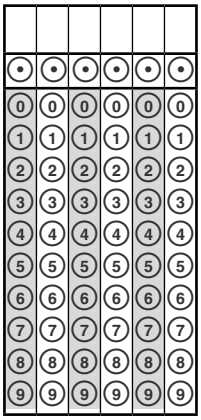
Ⓓ 9

2 A number pattern is shown.

7, 13, 19, 25, 31, 37, ?

If the pattern continues, what is the next number in the pattern?

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

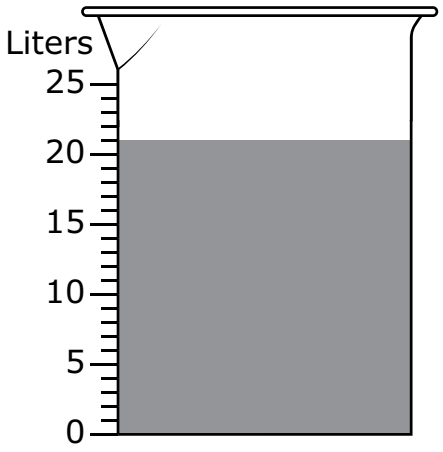


3 A gardener collected water from 7 different buckets in one large container.

- Each bucket had 3 liters of water.
- The gardener poured the water in all the buckets into the large container.

Which of these diagrams shows the total amount of water, in liters, in the large container after the gardener poured the water from the buckets into it?

Ⓐ



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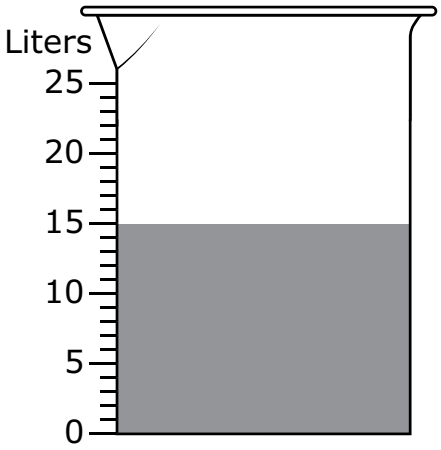

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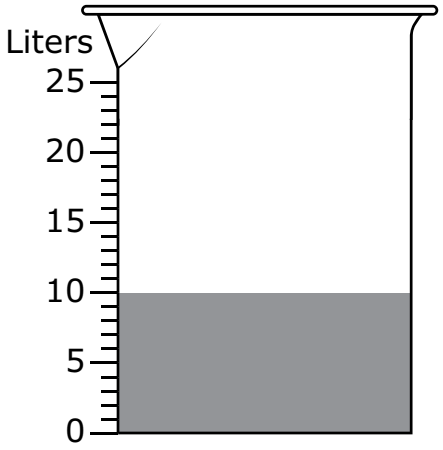

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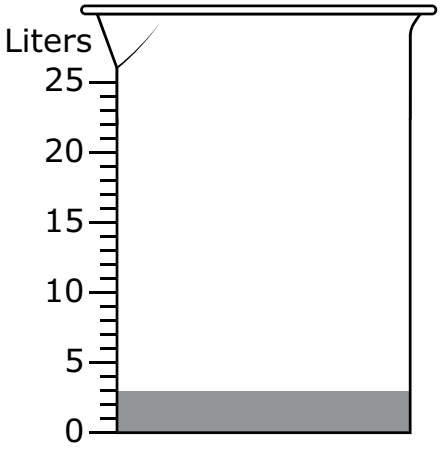


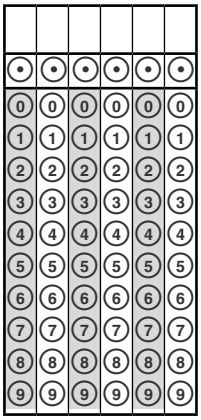
4 A teacher wrote these equations. The value of c is the same in each equation.

$$13 \times 8 = c$$

$$c = \boxed{?} \times 13$$

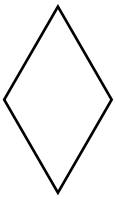
What value belongs in the $\boxed{?}$ to make the equation true?

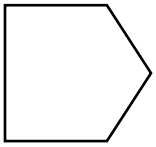
Enter your answer in the answer boxes at the top of the answer grid **and** completely fill the matching circles.

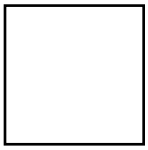


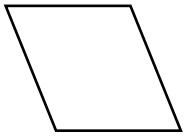
5 Which of these shapes appear to have **at least** one right angle?

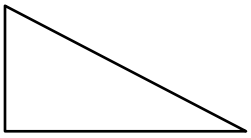
Select the **three** correct answers.

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

Ⓔ 

6 Which of these comparisons is true?

Ⓐ $\frac{3}{6} > \frac{4}{6}$

Ⓑ $\frac{5}{6} > \frac{5}{4}$

Ⓒ $\frac{5}{8} > \frac{5}{6}$

Ⓓ $\frac{6}{8} > \frac{5}{8}$

This question has three parts.

7 A student is rounding each number shown in the list in this box to the nearest **hundred**.

559, 637, 651, 648, 586

The student says, "Every number in the list rounds to 600."

Part A

Which number in the list makes the student's statement false? Explain how you know your answer is correct.

Enter your answer and your explanation in the space provided.

Part B

Write a **different** number that rounds to 600 when rounded to the nearest hundred. Do not repeat a number from the list.

Enter your answer in the space provided.

Part C

What is the **least** number that rounds to 600 when rounded to the nearest hundred? Explain how you got your answer.

Enter your answer and your explanation in the space provided.

8 An index card is cut into 2 equal parts.

What fraction of the total area of the index card is **one** part?

Ⓐ $\frac{1}{1}$

Ⓑ $\frac{2}{1}$

Ⓒ $\frac{1}{2}$

Ⓓ $\frac{2}{2}$

9 This table shows the numbers of different types of sandwiches a restaurant sold for lunch.

Lunch Sandwiches Sold

Sandwich	Number Sold
Egg Salad	6
Grilled Cheese	12
Peanut Butter and Jelly	10

Which picture graph shows the information in the table? Be sure to use the key.

Key
Each ▢ = 2 sandwiches.

Ⓐ **Lunch Sandwiches Sold**

Sandwich	Number Sold
Egg Salad	▢▢▢
Grilled Cheese	▢▢▢▢▢▢
Peanut Butter and Jelly	▢▢▢▢▢

Ⓑ **Lunch Sandwiches Sold**

Sandwich	Number Sold
Egg Salad	▢▢▢▢▢▢
Grilled Cheese	▢▢▢▢▢▢▢▢ ▢▢▢▢
Peanut Butter and Jelly	▢▢▢▢▢▢▢▢ ▢▢

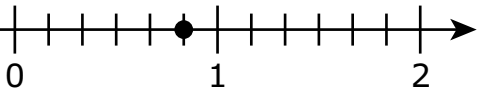
Ⓒ **Lunch Sandwiches Sold**

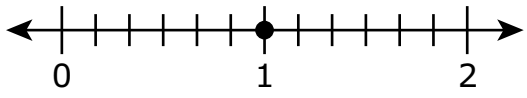
Sandwich	Number Sold
Egg Salad	▢▢
Grilled Cheese	▢▢▢▢
Peanut Butter and Jelly	▢▢▢

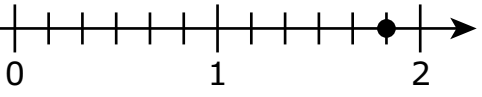
Ⓓ **Lunch Sandwiches Sold**

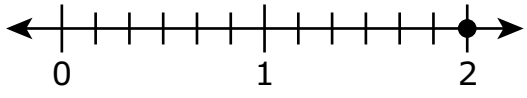
Sandwich	Number Sold
Egg Salad	▢▢▢
Grilled Cheese	▢▢▢▢▢▢
Peanut Butter and Jelly	▢▢▢▢

10 Which of these number lines shows a point that represents the location of the fraction $\frac{6}{6}$?

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

11 Avery put 16 pictures into 2 groups. She put the same number of pictures into each group.

Which equation can be used to find p, the total number of pictures in each group?

Ⓐ $16 + 2 = p$

Ⓑ $16 \times 2 = p$

Ⓒ $16 \div 2 = p$

Ⓓ $16 - 2 = p$

Grade 3 Mathematics

SESSION 2

This session contains 9 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.

12 Brittany collected 351 box tops. Emily collected 198 box tops.

How many more box tops did Brittany collect than Emily?

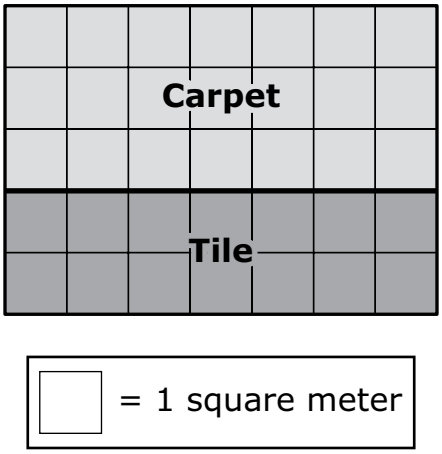
Ⓐ 153

Ⓑ 247

Ⓒ 263

Ⓓ 549

13 This drawing shows how a builder used both carpet and tile to cover the floor of a room with no gaps or overlaps.



Which expression can be used to find the total area, in square meters, of the floor of the room?

Ⓐ $(2 + 7) \times (3 + 7)$

Ⓑ $(4 \times 3) + (3 \times 2)$

Ⓒ $(5 \times 2) \times (2 \times 3)$

Ⓓ $(3 \times 7) + (2 \times 7)$

14 Which of these shapes has the same number of angles as a rhombus?

Ⓐ triangle

Ⓑ hexagon

Ⓒ pentagon

Ⓓ rectangle

15 Which of these fractions is equivalent to $\frac{2}{4}$?

Ⓐ $\frac{2}{3}$

Ⓑ $\frac{3}{4}$

Ⓒ $\frac{6}{6}$

Ⓓ $\frac{4}{8}$

16 Which of these expressions has a value **less than** 10?

Ⓐ $5 \times 1 \times 2$

Ⓑ $5 \times 2 \times 2$

Ⓒ $10 \times 2 \times 1$

Ⓓ $10 \times 0 \times 2$

17 Which of these equations are true?

Select the **three** correct answers.

Ⓐ $40 \div 5 = 8$

Ⓑ $40 \div 5 = 9$

Ⓒ $72 \div 8 = 9$

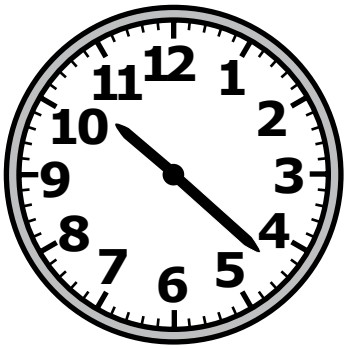
Ⓓ $72 \div 8 = 7$

Ⓔ $81 \div 9 = 8$

Ⓕ $81 \div 9 = 9$

This question has three parts.

18 On Saturday morning, it started snowing at the time shown on this clock.



Part A

At what time did it start snowing on Saturday morning? Be sure to use a.m. or p.m. in your answer.

Enter your answer in the space provided.

Part B

It stopped snowing on Saturday at the time shown on this clock.

What was the total number of minutes that it snowed on Saturday? Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

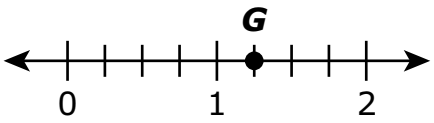
Part C

On Sunday, it started snowing at 11:35 a.m. It snowed for 83 minutes.

At what time did it stop snowing on Sunday? Be sure to use a.m. or p.m. in your answer. Show or explain how you got your answer.

Enter your answer and your work or explanation in the space provided.

19 Point *G* is shown on this number line.



Which of these fractions describes the location of point *G* on the number line?

Ⓐ $\frac{1}{4}$

Ⓑ $\frac{5}{4}$

Ⓒ $\frac{1}{8}$

Ⓓ $\frac{5}{8}$

20 Which of these equations are true?

Select the **three** correct answers.

Ⓐ $5 \times 80 = 40$

Ⓑ $5 \times 80 = 400$

Ⓒ $3 \times 20 = 60$

Ⓓ $3 \times 20 = 600$

Ⓔ $90 \times 6 = 480$

Ⓕ $90 \times 6 = 540$

Grade 3 Mathematics
Spring 2023 Released Operational Items

PBT Item No.	Page No.	Reporting Category	Standard	Item Type*	Item Description	Correct Answer**
1	4	*Operations and Algebraic Thinking*	3.OA.A.3	SR	Solve a word problem involving division of two whole numbers.	D
2	4	*Operations and Algebraic Thinking*	3.OA.D.9	SA	Identify the rule to find the next number in an addition pattern.	43
3	5	*Measurement and Data*	3.MD.A.2	SR	Solve a one-step multiplication word problem with liquid volume in metric units.	A
4	6	*Operations and Algebraic Thinking*	3.OA.B.5	SA	Determine the value of the variable in an equation using the Commutative Property of Multiplication.	8
5	7	*Geometry*	3.G.A.1	SR	Identify shapes with right angles.	B,C,E
6	7	*Number and Operations—Fractions*	3.NF.A.3	SR	Choose the statement that correctly compares two fractions with the same numerator or denominator.	D
7	8–9	*Number and Operations in Base Ten*	3.NBT.A.1	CR	Determine and justify which numbers round to the same 100 and provide different numbers that will also round the same way.	
8	10	*Geometry*	3.G.A.2	SR	Given the number of equal parts in a figure, determine what fraction one part is of the area of the whole figure.	C
9	11	*Measurement and Data*	3.MD.B.3	SR	Identify a scaled picture graph that represents the three categories of data in a given table.	A
10	12	*Number and Operations—Fractions*	3.NF.A.3	SR	Identify a point on a number line that shows the location of a given fraction that is equivalent to a whole number.	B
11	12	*Operations and Algebraic Thinking*	3.OA.A.2	SR	Determine which equation can be used to solve a word problem involving division of whole numbers.	C
12	15	*Number and Operations in Base Ten*	3.NBT.A.2	SR	Solve a real-world problem by subtracting two three-digit whole numbers.	A
13	15	*Measurement and Data*	3.MD.C.7	SR	Identify the expression that can be used to find the total area of a given tiled rectangle using the distributive property.	D
14	16	*Geometry*	3.G.A.1	SR	Determine which shape has the same number of angles as a given shape.	D
15	16	*Number and Operations—Fractions*	3.NF.A.3	SR	Determine which fraction is equivalent to a given fraction.	D
16	17	*Operations and Algebraic Thinking*	3.OA.C.7	SR	Determine which multiplication expression with three factors has a value less than a given value using the properties of operations.	D
17	17	*Operations and Algebraic Thinking*	3.OA.C.7	SR	Identify division equations that are true.	A,C,F
18	18–19	*Measurement and Data*	3.MD.A.1	CR	Tell time on an analog clock, determine an interval of time given time on a digital clock, and solve a word problem by adding a time interval in minutes larger than one hour that changes from A.M. to P.M.	

PBT Item No.	Page No.	Reporting Category	Standard	Item Type*	Item Description	Correct Answer**
19	20	*Number and Operations–Fractions*	3.NF.A.2	SR	Identify the fraction greater than one that describes where a given point is plotted on a number line.	B
20	20	*Number and Operations in Base Ten*	3.NBT.A.3	SR	Identify products of one-digit whole numbers and multiples of ten.	B,C,F

* 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 3 Mathematics
Spring 2023 Unreleased Operational Items

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
21	*Measurement and Data*	3.MD.C.7	SR	Identify the equation that can be used to find the area of a given rectangle that is tiled.
22	*Measurement and Data*	3.MD.B.4	SR	Select an appropriate ruler and measure an item to the nearest fourth of an inch.
23	*Operations and Algebraic Thinking*	3.OA.B.6	SR	Determine the multiplication equation that can be used to help solve a given division equation with a variable for the unknown.
24	*Measurement and Data*	3.MD.A.1	SR	Determine the time on a given analog clock.
25	*Operations and Algebraic Thinking*	3.OA.D.8	CR	Use different strategies and reasoning to solve two-step word problems with addition and multiplication of whole numbers.
26	*Operations and Algebraic Thinking*	3.OA.A.3	SR	Solve a word problem given the relationship between two given whole number amounts.
27	*Number and Operations in Base Ten*	3.NBT.A.2	SR	Compare three-digit whole numbers given in a table by subtracting.
28	*Operations and Algebraic Thinking*	3.OA.B.5	SA	Use the distributive property to complete a multiplication equation.
29	*Measurement and Data*	3.MD.C.5	SR	Identify the correct statement about estimating the area of a given figure, made of two squares, based on reasoning about the size of the squares.
30	*Number and Operations in Base Ten*	3.NBT.A.3	SR	Solve a real-world problem by finding the product of a one-digit number and a multiple of 10.
31	*Operations and Algebraic Thinking*	3.OA.A.1	SR	Determine the multiplication expressions that can be used to model a given rectangular array.
32	*Operations and Algebraic Thinking*	3.OA.D.9	SR	Given the first number and the rule of a pattern, determine a common characteristic of all the numbers in the pattern.
33	*Measurement and Data*	3.MD.D.8	SA	Given a real-world problem, determine the length of one side of a square given the square's perimeter.
34	*Operations and Algebraic Thinking*	3.OA.A.4	SR	Determine which multiplication and division equations are true when the unknown quantity is replaced with a given value.
35	*Number and Operations–Fractions*	3.NF.A.1	CR	Determine the fraction represented by a fraction model, justify your answer, and then create a fraction model of a fraction greater than one.
36	*Number and Operations–Fractions*	3.NF.A.2	SR	Identify the point that represents a unit fraction on a number line.
37	*Number and Operations–Fractions*	3.NF.A.1	SR	Determine the fraction that is represented by a given fraction model.
38	*Number and Operations in Base Ten*	3.NBT.A.1	SR	Round whole numbers to the nearest 10.
39	*Geometry*	3.G.A.2	SR	Determine the unit fraction that describes the area of one part of a given shape that is partitioned into equal parts.
40	*Measurement and Data*	3.MD.C.6	SR	Determine the area of given figures by counting the unit squares.

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