RIDE Rhode Island Department of Education

Release of Spring 2024 RICAS Test Information—Spanish

from the

Grade 8 Mathematics Test

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Rhode Island Department of Education

This document was prepared by the
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Overview of Grade 8 Mathematics Test

The spring 2024 grade 8 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 8 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.

The Department is not releasing items from the spring 2024 RICAS grades 3–8 tests. Released items from previous years' computer-based tests are available on the RICAS Resource Center website at ricas.pearsonsupport.com/released-items.

Test Sessions and Content Overview

The grade 8 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 8 Mathematics test was based on standards in the five domains for grade 8 in the *Massachusetts Curriculum Framework for Mathematics* (2017). The five domains are listed below.

- The Number System
- Expressions and Equations
- Functions
- Geometry
- Statistics and Probability

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 four MCAS reporting categories, which are based on the five framework domains listed above.

The tables at the conclusion of this document provide the following information about each operational item: reporting category, standard(s) covered, item type, and item description.

Reference Materials and Tools

Each student taking the grade 8 Mathematics test was provided with a ruler and a grade 8 Mathematics Reference Sheet. A copy of the reference sheet can be found on the next page of this document.

During Session 2, each student had sole access to a calculator. Calculator use was not allowed during Session 1.

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 other reference tools or materials were allowed.

Rhode Island Comprehensive Assessment System
Grado 8 Hoja de referencia para matemáticas

CONVERSIONES

1 taza = 8 onzas líquidas
1 pinta = 2 tazas
1 cuarto de galón = 2 pintas
1 galón = 4 cuartos de galón
1 galón ≈ 3.785 litros
1 litro ≈ 0.264 galón
1 litro = 1000 centímetros cúbicos

1 pulgada = 2.54 centímetros
1 metro ≈ 39.37 pulgada
1 milla = 5280 pies
1 milla = 1760 yardas
1 milla ≈ 1.609 kilómetros
1 kilómetro ≈ 0.62 milla

1 libra = 16 onzas
1 libra ≈ 0.454 kilogramos
1 kilogramo ≈ 2.2 libras
1 tonelada = 2000 libras

FÓRMULAS DE ÁREA (*A*)

cuadrado . . . . . $A = s^2$

rectángulo . . . . . $A = bh$

o

$A = lw$

paralelogramo . . . . . $A = bh$

triángulo . . . . . $A = \frac{1}{2}bh$

trapezoide . . . . . $A = \frac{1}{2}h(b_1 + b_2)$

círculo . . . . . $A = \pi r^2$

FÓRMULAS DE CÍRCULO

área. . . . . $A = \pi r^2$

circunferencia . . . . . $C = 2\pi r$

o

$C = \pi d$

FÓRMULAS DE VOLUMEN (*V*)

cubo . . . . . $V = s^3$

(s = longitud de una arista)

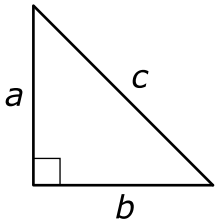
esfera . . . . . $V = \frac{4}{3}\pi r^3$

cono . . . . . $V = \frac{1}{3}\pi r^2 h$

cilindro recto de
base circular . . . . . $V = \pi r^2 h$

prisma recto . . . . . $V = Bh$

TEOREMA DE PITÁGORAS



$a^2 + b^2 = c^2$

Grade 8 Mathematics
Spring 2024 Computer-Based Operational Items

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
1	*The Number System and Expressions and Equations*	8.NS.A.2	SR	Determine between which pair of integers a square root of a given number lies.
2	*The Number System and Expressions and Equations*	8.EE.C.8	SR	Determine the coordinates of the solution of a system of equations.
3	*Functions*	8.F.A.3	SR	Determine which statement about a linear equation is true.
4	*Geometry*	8.G.B.6	SR	Given a right triangle, identify an equation that relates its side lengths.
5	*Statistics and Probability*	8.SP.A.1	CR	Given a set of data in a table, create a scatterplot, determine if there are outliers in the data, describe the association represented by the data, and make a prediction based on the data.
6	*The Number System and Expressions and Equations*	8.EE.A.3	SR	Convert a number in scientific notation to standard notation.
7	*Functions*	8.F.A.2	SR	Determine which equation of a line has a graph with the same y-intercept as the line represented by a table of values.
8	*The Number System and Expressions and Equations*	8.EE.A.2	SA	Complete the first two steps of the correct solution to find the value of x in an equation in the form $x^3 = p$.
9	*The Number System and Expressions and Equations*	8.NS.A.1	SR	Identify numbers as rational or irrational.
10	*The Number System and Expressions and Equations*	8.EE.B.5	SR	Determine which graph represents a proportional relationship in a given context.
11	*The Number System and Expressions and Equations*	8.NS.A.2	SA	Use a number line to show the approximate value of an irrational number.
12	*The Number System and Expressions and Equations*	8.EE.A.4	CR	Compare, multiply, add, and divide numbers expressed in scientific notation, using a real-world context.
13	*The Number System and Expressions and Equations*	8.EE.B.6	SR	Determine which equation represents a line graphed on a coordinate plane.
14	*Geometry*	8.G.A.1	SA	Graph the image of a triangle after a reflection and compare the sides, angles, areas, and perimeters of the triangle and its image.
15	*The Number System and Expressions and Equations*	8.EE.A.2	SA	Evaluate the square root of a small perfect square in a real-world context.
16	*Functions*	8.F.A.1	SR	Identify which tables contain values that represent functions.
17	*The Number System and Expressions and Equations*	8.NS.A.1	SA	Convert a fraction to a decimal.
18	*The Number System and Expressions and Equations*	8.EE.C.7	SR	Solve a linear equation using the distributive property and combining like terms.
19	*Geometry*	8.G.A.4	SR	Identify a transformation that will result in an image that is similar, but not congruent, to the original figure.
20	*The Number System and Expressions and Equations*	8.EE.A.3	SR	Convert the product of two numbers expressed in standard notation into the form of a single digit multiplied by an integer power of 10.
21	*Statistics and Probability*	8.SP.A.3	SR	Determine which statement describes the slope of a graph in a given real-world context.
22	*Geometry*	8.G.B.7	SR	Determine the length of the hypotenuse, given a right triangle in a real-world scenario.
23	*Functions*	8.F.A.2	SR	Compare functions represented algebraically and in a table and interpret each function's y-intercept.
24	*The Number System and Expressions and Equations*	8.EE.B.5	SR	Determine which equation represents a proportional relationship in a real-world context.

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
25	*Functions*	8.F.B.4	CR	Solve multi-step problems involving interpreting a given graph, finding the rate of change, and constructing a function based on a given real-world context.
26	*Statistics and Probability*	8.SP.A.4	SR	Determine a percentage to compare data in a two-way table.
27	*Geometry*	8.G.C.9	SA	Order three-dimensional shapes (cylinder, sphere and cone) according to their volumes.
28	*The Number System and Expressions and Equations*	8.EE.C.7	SR	Determine the number of solutions for two different one-variable equations.
29	*Functions*	8.F.A.1	SR	Identify which table contains values that represent y as a function of x.
30	*Geometry*	8.G.A.3	SA	Graph the image of a triangle on a coordinate plane after a sequence of transformations.
31	*The Number System and Expressions and Equations*	8.EE.C.8	SR	Determine the x-value in the solution of a linear system of equations.
32	*Geometry*	8.G.A.5	CR	Determine the measures of angles shown in a diagram consisting of parallel lines intersected by a transversal.
33	*Functions*	8.F.B.5	SR	Given a graph of a function, determine which statements about the function are true.
34	*The Number System and Expressions and Equations*	8.EE.A.1	SA	Use and apply properties of integer exponents to simplify a numerical expression and to identify an expression that is equivalent to a given expression.
35	*Statistics and Probability*	8.SP.A.2	SR	Describe the direction and strength of a linear relationship, given a scatter plot and line of best fit.
36	*Geometry*	8.G.A.3	SR	Determine the coordinates of a point on a figure after a dilation.
37	*Geometry*	8.G.A.2	SR	Determine the sequence of transformations that can be used to demonstrate the congruence of two triangles drawn on the coordinate plane.
38	*Statistics and Probability*	8.SP.A.4	SR	Use relative frequencies from a two-way frequency table to solve a real-world problem.
39	*Geometry*	8.G.B.8	SR	Determine the distance between two points on a coordinate plane using the Pythagorean Theorem.
40	*Functions*	8.F.A.1	SR	Determine if a table contains values that represent y as a function of x and identify how that relationship is shown in the table.

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

Grade 8 Mathematics
Spring 2024 Paper-Based Operational Items

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
1	*The Number System and Expressions and Equations*	8.NS.A.2	SR	Determine between which pair of integers a square root of a given number lies.
2	*The Number System and Expressions and Equations*	8.EE.C.8	SR	Determine the coordinates of the solution of a system of equations.
3	*Functions*	8.F.A.3	SR	Determine which statement about a linear equation is true.
4	*Geometry*	8.G.B.6	SR	Given a right triangle, identify an equation that relates its side lengths.
5	*Statistics and Probability*	8.SP.A.1	CR	Given a set of data in a table, create a scatterplot, determine if there are outliers in the data, describe the association represented by the data, and make a prediction based on the data.
6	*The Number System and Expressions and Equations*	8.EE.A.3	SR	Convert a number in scientific notation to standard notation.
7	*Functions*	8.F.A.2	SR	Determine which equation of a line has a graph with the same y-intercept as the line represented by a table of values.
8	*The Number System and Expressions and Equations*	8.EE.A.2	SR	Identify the first two steps of the correct solution to find the value of x in an equation in the form $x^3 = p$.
9	*The Number System and Expressions and Equations*	8.NS.A.1	SR	Identify rational numbers.
10	*The Number System and Expressions and Equations*	8.EE.B.5	SR	Determine which graph represents a proportional relationship in a given context.
11	*The Number System and Expressions and Equations*	8.NS.A.2	SR	Determine which number line shows the approximate value of an irrational number.
12	*The Number System and Expressions and Equations*	8.EE.A.4	CR	Compare, multiply, add, and divide numbers expressed in scientific notation, using a real-world context.
13	*The Number System and Expressions and Equations*	8.EE.B.6	SR	Determine which equation represents a line graphed on a coordinate plane.
14	*Geometry*	8.G.A.1	SR	Identify the graph that shows the image of a triangle after a reflection and determine which statements about the sides, angles, areas, and perimeters of the triangle and its image are true.
15	*The Number System and Expressions and Equations*	8.EE.A.2	SA	Evaluate the square root of a small perfect square in a real-world context.
16	*Functions*	8.F.A.1	SR	Identify which tables contain values that represent functions.
17	*The Number System and Expressions and Equations*	8.NS.A.1	SA	Convert a fraction to a decimal.
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22	*Geometry*	8.G.B.7	SR	Determine the length of the hypotenuse, given a right triangle in a real-world scenario.
23	*Functions*	8.F.A.2	SR	Compare functions represented algebraically and in a table and interpret each function's y-intercept.
24	*The Number System and Expressions and Equations*	8.EE.B.5	SR	Determine which equation represents a proportional relationship in a real-world context.

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