MASSACHUSETTS DEPARTMENT OF
ELEMENTARY AND SECONDARY
EDUCATION

Release of November 2022 MCAS Test Information from the High School ELA and Math Retests

November 2022
Massachusetts Department of Elementary and Secondary Education

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I. Document Purpose and Structure

Document Purpose and Structure

Purpose

The purpose of this document is to share with educators and the public information regarding the November 2022 MCAS English Language Arts (ELA) and Mathematics retests, including the reporting category and standard associated with each item. The Department does not currently release items from the November retests. All items continue to be released for the spring grade 10 tests.

Structure

Chapters II and III of this document contain, respectively, information for the November 2022 ELA and Mathematics retests. Each of these chapters has two sections.

The **first section** provides a brief overview of the retest, including test format and item types. The Mathematics Reference Sheet used by students during MCAS Mathematics test sessions appears at the end of the first section of the Mathematics chapter.

The **second section** of each chapter are tables that cross-reference each item on the computer-based test and the paper-based test with its MCAS reporting category and with the *Framework* standard it assesses. The tables show how the items on the test assess standards in the 2017 frameworks.

II. English Language Arts Retest

English Language Arts Retest

The November 2022 English Language Arts retest was administered in two primary 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 students with disabilities who are unable to use a computer, as well as for English learners who are new to the country and are unfamiliar with technology.

The tables at the end of this chapter provide information about each item from both the computer-based and paper-based tests, including reporting category, standard(s) covered, item type, and item description.

A Note about Testing Mode

Most of the operational items on the computer-based and paper-based versions of the ELA retest were the same. 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 ELA content and assessed the same standard as the technology-enhanced item.

Test Sessions and Content Overview

The ELA retest was made up of two separate test sessions. Each session included reading passages, followed by selected-response and essay 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 ELA retest was based on grades 6–12 learning standards in three content strands of the *Massachusetts Curriculum Framework for English Language Arts and Literacy* (2017), listed below.

- Reading
- Writing
- Language

The Massachusetts Curriculum Framework for English Language Arts and Literacy is available on the Department website at www.doe.mass.edu/frameworks/current.html.

ELA test results are reported under three MCAS reporting categories, which are identical to the three framework content strands listed above.

Reference Materials

During both ELA test sessions, the use of bilingual word-to-word dictionaries was allowed for current and former English learner students only. No other reference materials were allowed during any ELA test session.

November 2022 English Language Arts Retest
Computer-Based Operational Items

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
1	*Reading*	RL.9-10.4	SR	Determine how specific words contribute to meaning and characterization in an excerpt.
2	*Reading*	RL.9-10.2	SR	Identify how a concept in an excerpt contributes to the development of its central idea.
3	*Language*	L.9-10.4	SR	Determine the meaning of an unknown word in a paragraph using context.
4	*Reading*	RL.9-10.4	SR	Determine the effect of specific paragraphs on meaning in an excerpt.
5	*Reading*	RL.9-10.3	SR	Analyze an author's use of details to symbolize a specific aspect of characterization.
6	*Reading*	RL.9-10.3	SR	Determine a contrast between two characters in an excerpt.
7	*Reading*	RL.9-10.3	SR	Make an inference about a character in an excerpt and identify a quotation that supports the inference.
8	*Reading*	RL.9-10.2	SR	Analyze the development of a central idea in an excerpt.
9	*Language, Writing*	L.9-10.1, L.9-10.2, L.9-10.3, W.9-10.2, W.9-10.4	ES	Write an essay analyzing the impact of one character on another in an excerpt; use details from the excerpt to develop the essay.
10	*Language*	L.9-10.5	SR	Determine the meaning of figurative language in a poem based on context.
11	*Reading*	RL.9-10.2	SR	Evaluate how a line of a poem relates to later ideas in the poem.
12	*Reading*	RL.9-10.1	SR	Make an inference about a poem based on details in another poem on a similar topic.
13	*Reading*	RL.9-10.2	SR	Compare how authors develop key themes in two poems on similar topics.
14	*Reading*	RI.9-10.3	SR	Select evidence that supports a specific idea presented in an excerpt.
15	*Language*	L.9-10.4	SR	Determine the meaning of an unfamiliar word based on context.
16	*Reading*	RI.9-10.6	SR	Compare the purposes of evidence used by authors in two excerpts on similar topics.
17	*Reading*	RI.9-10.8	SR	Contrast authors' uses of data in two excerpts on similar topics.
18	*Reading*	RI.9-10.8	SR	Compare the uses of evidence by authors in two excerpts on similar topics.
19	*Reading*	RI.9-10.2	SR	Compare the central idea shared by two excerpts on similar topics.
20	*Reading*	RI.9-10.3	SR	Identify a key idea presented by specific evidence in an excerpt; identify evidence from another excerpt on a similar topic that supports the same key idea.
21	*Reading*	RI.9-10.5	SR	Identify the purposes of specific sentences from two excerpts on similar topics.
22	*Language, Writing*	L.9-10.1, L.9-10.2, L.9-10.3, W.9-10.1, W.9-10.4	ES	Write a speech intended to persuade an audience based on evidence presented in two excerpts on similar topics; use information from both excerpts to support your speech.
23	*Reading*	RI.9-10.5	SR	Determine the purpose of specific paragraphs in an article.
24	*Language*	L.9-10.4	SR	Determine the meaning of a word based on context.
25	*Reading*	RI.9-10.3	SR	Select evidence to support an author's conclusion in an article.

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
26	*Reading*	RI.9-10.2	SR	Identify a sentence that summarizes an author's argument about a specific concept from an article.
27	*Reading*	RI.9-10.3	SR	Determine a key distinction based on specific paragraphs of an article.
28	*Language*	L.9-10.4	SR	Determine the meaning of a word based on context.
29	*Reading*	RI.9-10.6	SR	Make an inference based on a sentence in one article; identify a paragraph from another article on a similar topic that supports the same inference.
30	*Reading*	RI.9-10.6	SR	Determine which key ideas are presented in two articles on similar topics.

* ELA item types are selected-response (SR) and essay (ES).

November 2022 English Language Arts Retest
Paper-Based Operational Items

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
1	*Reading*	RL.9-10.4	SR	Determine how specific words contribute to meaning and characterization in an excerpt.
2	*Reading*	RL.9-10.2	SR	Identify how a concept in an excerpt contributes to the development of its central idea.
3	*Language*	L.9-10.4	SR	Determine the meaning of an unknown word in a paragraph using context.
4	*Reading*	RL.9-10.4	SR	Determine the effect of specific paragraphs on meaning in an excerpt.
5	*Reading*	RL.9-10.3	SR	Analyze an author's use of details to symbolize a specific aspect of characterization.
6	*Reading*	RL.9-10.3	SR	Determine a contrast between two characters in an excerpt.
7	*Reading*	RL.9-10.3	SR	Make an inference about a character in an excerpt and identify a quotation that supports the inference.
8	*Reading*	RL.9-10.2	SR	Analyze the development of a central idea in an excerpt.
9	*Language, Writing*	L.9-10.1, L.9-10.2, L.9-10.3, W.9-10.2, W.9-10.4	ES	Write an essay analyzing the impact of one character on another in an excerpt; use details from the excerpt to develop the essay.
10	*Language*	L.9-10.5	SR	Determine the meaning of figurative language in a poem based on context.
11	*Reading*	RL.9-10.2	SR	Evaluate how a line of a poem relates to later ideas in the poem.
12	*Reading*	RL.9-10.1	SR	Make an inference about a poem based on details in another poem on a similar topic.
13	*Reading*	RL.9-10.2	SR	Compare how authors develop key themes in two poems on similar topics.
14	*Reading*	RI.9-10.3	SR	Select evidence that supports a specific idea presented in an excerpt.
15	*Language*	L.9-10.4	SR	Determine the meaning of an unfamiliar word based on context.
16	*Reading*	RI.9-10.6	SR	Compare the purposes of evidence used by authors in two excerpts on similar topics.
17	*Reading*	RI.9-10.8	SR	Contrast authors' uses of data in two excerpts on similar topics.
18	*Reading*	RI.9-10.8	SR	Compare the uses of evidence by authors in two excerpts on similar topics.
19	*Reading*	RI.9-10.2	SR	Compare the central idea shared by two excerpts on similar topics.
20	*Reading*	RI.9-10.3	SR	Identify a key idea presented by specific evidence in an excerpt; identify evidence from another excerpt on a similar topic that supports the same key idea.
21	*Reading*	RI.9-10.5	SR	Identify the purposes of specific sentences from two excerpts on similar topics.
22	*Language, Writing*	L.9-10.1, L.9-10.2, L.9-10.3, W.9-10.1, W.9-10.4	ES	Write a speech intended to persuade an audience based on evidence presented in two excerpts on similar topics; use information from both excerpts to support your speech.
23	*Reading*	RI.9-10.5	SR	Determine the purpose of specific paragraphs in an article.
24	*Language*	L.9-10.4	SR	Determine the meaning of a word based on context.
25	*Reading*	RI.9-10.3	SR	Select evidence to support an author's conclusion in an article.

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
26	*Reading*	RI.9-10.2	SR	Identify a sentence that summarizes an author's argument about a specific concept from an article.
27	*Reading*	RI.9-10.3	SR	Determine a key distinction based on specific paragraphs of an article.
28	*Language*	L.9-10.4	SR	Determine the meaning of a word based on context.
29	*Reading*	RI.9-10.6	SR	Make an inference based on a sentence in one article; identify a paragraph from another article on a similar topic that supports the same inference.
30	*Reading*	RI.9-10.6	SR	Determine which key ideas are presented in two articles on similar topics.

* ELA item types are selected-response (SR) and essay (ES).

III. Mathematics Retest

Mathematics Retest

The November 2022 Mathematics retest was administered in two primary 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 students with disabilities who are unable to use a computer, as well as for English learners who are new to the country and are unfamiliar with technology.

The tables at the end of this chapter provide information about each item from both the computer-based and paper-based tests, including reporting category, standard covered, item type, and item description.

A Note about Testing Mode

Most of the operational items on the computer-based and paper-based versions of the Mathematics retest were the same. 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.

Test Sessions and Content Overview

The Mathematics retest 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 Mathematics retest was based on high school standards in the *Massachusetts Curriculum Framework for Mathematics* (2017). The standards in the 2017 framework are organized under the five major conceptual categories listed below.

- Number and Quantity
- Algebra
- Functions
- Geometry
- Statistics and Probability

The Mathematics retest assessed standards that overlap between the Model Algebra I/Model Geometry and Model Mathematics I/Model Mathematics II courses. The *Massachusetts Curriculum Framework for Mathematics* is available on the Department website at www.doe.mass.edu/frameworks/current.html.

Mathematics test results for grade 10 are reported under four MCAS reporting categories, which are based on the five framework conceptual categories listed above.

Spanish-Language Edition

Since approximately 55% of English learner students in Massachusetts public schools are native Spanish speakers, a Spanish-language edition of the Mathematics retest was made available to eligible Spanish-speaking students. The computer-based version of the Spanish-language edition presented the Spanish translation above the English text for each item. The booklets for the paper-based version of the Spanish-language edition were issued in side-by-side English/Spanish format: pages on the left side of each booklet presented items in Spanish; pages on the right side presented the same items in English.

Reference Materials and Tools

Each student taking the Mathematics retest was provided with a grade 10 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 bilingual word-to-word dictionaries was allowed for current and former English learner students only. No other reference tools or materials were allowed.

MASSACHUSETTS DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION

Massachusetts Comprehensive Assessment System
Grade 10 Mathematics Reference Sheet

CONVERSIONS

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 gallon ≈ 3.785 liters
1 liter ≈ 0.264 gallon
1 liter = 1000 cubic centimeters

1 inch = 2.54 centimeters
1 meter ≈ 39.37 inches
1 mile = 5280 feet
1 mile = 1760 yards
1 mile ≈ 1.609 kilometers
1 kilometer ≈ 0.62 mile

1 pound = 16 ounces
1 pound ≈ 0.454 kilogram
1 kilogram ≈ 2.2 pounds
1 ton = 2000 pounds

AREA (A) FORMULAS

square . . . . . $A = s^2$
rectangle . . . . . $A = lw$
parallelogram . . . . . $A = bh$
triangle . . . . . $A = \frac{1}{2}bh$
trapezoid . . . . . $A = \frac{1}{2}h(b_1 + b_2)$
circle . . . . . $A = \pi r^2$

TOTAL SURFACE AREA (SA) FORMULAS

cube . . . . . $SA = 6s^2$
right square pyramid . . . . $SA = s^2 + 2s\ell$
(ℓ = slant height)
right rectangular prism . . $SA = 2(lw) + 2(hw) + 2(lh)$

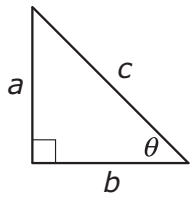
VOLUME (V) FORMULAS

cube . . . . . $V = s^3$
(s = length of an edge)
prism . . . . . $V = Bh$
cylinder . . . . . $V = \pi r^2 h$
cone . . . . . $V = \frac{1}{3}\pi r^2 h$
pyramid . . . . . $V = \frac{1}{3}Bh$
sphere . . . . . $V = \frac{4}{3}\pi r^3$

CIRCLE FORMULAS

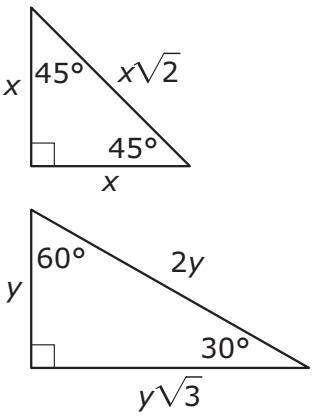
pi . . . . . $\pi \approx 3.14$
circumference . . . . $C = 2\pi r$ OR $C = \pi d$
area . . . . . $A = \pi r^2$

RIGHT TRIANGLES



Pythagorean Theorem
$a^2 + b^2 = c^2$
Trigonometric Ratios
$\sin\theta = \frac{a}{c}$
$\cos\theta = \frac{b}{c}$
$\tan\theta = \frac{a}{b}$

SPECIAL RIGHT TRIANGLES



November 2022 Mathematics Retest
Computer-Based Operational Items

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
1	*Algebra and Functions*	A-APR.A.1	SR	Add two binomials to create an equivalent expression.
2	*Geometry*	G-SRT.B.5	SA	Use proportions to determine an unknown length in a diagram with similar pentagons.
3	*Geometry*	G-GPE.B.4	SA	On a coordinate plane, graph a line segment that is perpendicular to a given line segment, based on given criteria.
4	*Algebra and Functions*	F-IF.C.9	SR	Identify equivalent quadratic functions that represent a relationship between two quantities, given values shown in a table.
5	*Geometry*	G-CO.C.9	SR	Use theorems about lines and angles to find the measure of an angle in a geometric diagram.
6	*Number and Quantity*	N-Q.A.2	CR	Use quantitative reasoning to estimate solutions relating to a real-world problem.
7	*Algebra and Functions*	A-REI.D.10	SR	Identify the coordinates of points that lie on the graph of a linear equation.
8	*Statistics and Probability*	S-ID.B.5	SA	Calculate a marginal relative frequency from a two-way table based on a context.
9	*Geometry*	G-CO.D.12	SR	Interpret the results of the construction of a perpendicular bisector of a segment.
10	*Algebra and Functions*	A-REI.B.4	SR	Determine the solutions of a one-variable quadratic equation in factored form.
11	*Number and Quantity*	N-RN.B.3	SR	Determine whether operations with rational and irrational numbers result in numbers with rational values.
12	*Geometry*	G-CO.A.5	SR	Describe the transformation that maps a square onto another square on a coordinate plane.
13	*Algebra and Functions*	F-LE.A.2	CR	Extend a geometric sequence based on a real-world situation, write a function that represents the sequence, and compare it to a second geometric sequence.
14	*Algebra and Functions*	A-REI.D.12	SA	Graph the solution set of a linear inequality and identify the solution set of a system of linear inequalities graphed on a coordinate plane.
15	*Number and Quantity*	N-RN.A.2	SR	Identify values equivalent to the product of two irrational numbers.
16	*Geometry*	G-GPE.B.5	SR	Identify an equation of the line perpendicular to a given line and that passes through a given point.
17	*Algebra and Functions*	A-SSE.A.2	SR	Factor a quadratic trinomial expression.
18	*Statistics and Probability*	S-ID.C.7	SA	Interpret the slope in a linear model based on a real-world situation and then make a prediction based on the model.
19	*Algebra and Functions*	A-REI.C.6	SA	Determine the x-value of the solution of a system of linear equations.
20	*Geometry*	G-C.A.2	SR	Determine the measure of an arc in a circle which is divided into congruent sections.
21	*Algebra and Functions*	F-IF.B.4	SR	Determine the minimum value of a quadratic function based on the expression that defines it.
22	*Geometry*	G-GPE.B.7	SR	Calculate the area of a parallelogram graphed on a coordinate plane.
23	*Number and Quantity*	N-Q.A.1	SR	Use appropriate units to describe real-world situations.
24	*Geometry*	G-GMD.A.1	SR	Approximate the area of a circle given its diameter.
25	*Statistics and Probability*	S-CP.A.2	SR	Given the probabilities of two independent events, determine the probability of both events occurring.

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
26	*Number and Quantity*	N-Q.A.3	SR	Describe the effects of rounding on a measurement in a real-world situation.
27	*Statistics and Probability*	S-ID.A.1	CR	Interpret real-world data displayed in a box plot by calculating measures of center and analyzing quartiles.
28	*Geometry*	G-SRT.C.8	SR	Use the Pythagorean Theorem to find an unknown length in a real-world problem.
29	*Algebra and Functions*	F-BF.A.2	SR	Create a recursive function that models an arithmetic sequence in a real-world situation.
30	*Geometry*	G-C.A.2	SR	Calculate the measure of an angle within a triangle inscribed in a circle.
31	*Statistics and Probability*	S-ID.A.3	SR	Explain the effect of removing an outlier on the measures of center of a data set.
32	*Geometry*	G-CO.A.2	SA	Graph a triangle on a coordinate plane after a rotation and identify a transformation that is not rigid from its description.
33	*Algebra and Functions*	A-REI.A.1	SR	Identify the mathematical property used to justify a step in the solution of an equation.
34	*Geometry*	G-GMD.A.1	CR	Compare the dimensions of two circles and calculate the radius of a third circle based on a comparison of their areas.
35	*Algebra and Functions*	F-LE.A.3	SA	Compare the values of a linear, a quadratic, and an exponential function as the value of the independent variable increases.
36	*Geometry*	G-CO.C.10	SR	Use a theorem about triangles to show the relationship of sides and side lengths based on a diagram.
37	*Algebra and Functions*	A-CED.A.3	SR	Identify a system of equations and inequalities based on a description.
38	*Algebra and Functions*	F-LE.B.5	SR	Interpret the rate of change of a linear model that describes a real-world situation.
39	*Geometry*	G-SRT.B.4	SR	Use theorems about triangles to compare similar triangles and to calculate unknown side lengths.
40	*Algebra and Functions*	F-IF.A.2	SR	Given a quadratic function that represents a real-world situation, determine the element of the domain that produces a given output.
41	*Algebra and Functions*	A-CED.A.1	SR	Create and solve a one-variable equation based on a real-world situation.
42	*Geometry*	G-SRT.A.2	SR	Identify a true statement regarding the relationship of a triangle and its image after a dilation.

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

November 2022 Mathematics Retest
Paper-Based Operational Items

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
1	*Algebra and Functions*	A-APR.A.1	SR	Add two binomials to create an equivalent expression.
2	*Geometry*	G-SRT.B.5	SA	Use proportions to determine an unknown length in a diagram with similar pentagons.
3	*Geometry*	G-GPE.B.4	SR	Based on given criteria, determine the coordinates of an endpoint of a line segment that is perpendicular to another line segment graphed on a coordinate plane.
4	*Algebra and Functions*	F-IF.C.9	SR	Identify equivalent quadratic functions that represent a relationship between two quantities, given values shown in a table.
5	*Geometry*	G-CO.C.9	SR	Use theorems about lines and angles to find the measure of an angle in a geometric diagram.
6	*Number and Quantity*	N-Q.A.2	CR	Use quantitative reasoning to estimate solutions relating to a real-world problem.
7	*Algebra and Functions*	A-REI.D.10	SR	Identify the coordinates of points that lie on the graph of a linear equation.
8	*Statistics and Probability*	S-ID.B.5	SR	Calculate a marginal relative frequency from a two-way table based on a context.
9	*Geometry*	G-CO.D.12	SR	Interpret the results of the construction of a perpendicular bisector of a segment.
10	*Algebra and Functions*	A-REI.B.4	SR	Determine the solutions of a one-variable quadratic equation in factored form.
11	*Number and Quantity*	N-RN.B.3	SR	Determine whether operations with rational and irrational numbers result in numbers with rational values.
12	*Geometry*	G-CO.A.5	SR	Describe the transformation that maps a square onto another square on a coordinate plane.
13	*Algebra and Functions*	F-LE.A.2	CR	Extend a geometric sequence based on a real-world situation, write a function that represents the sequence, and compare it to a second geometric sequence.
14	*Algebra and Functions*	A-REI.D.12	SR	Identify the graph that represents the solution set of a linear inequality and the solution set of a system of linear inequalities graphed on a coordinate plane.
15	*Number and Quantity*	N-RN.A.2	SR	Identify values equivalent to the product of two irrational numbers.
16	*Geometry*	G-GPE.B.5	SR	Identify an equation of the line perpendicular to a given line and that passes through a given point.
17	*Algebra and Functions*	A-SSE.A.2	SR	Factor a quadratic trinomial expression.
18	*Statistics and Probability*	S-ID.C.7	SA	Interpret the slope in a linear model based on a real-world situation and then make a prediction based on the model.
19	*Algebra and Functions*	A-REI.C.6	SA	Determine the x-value of the solution of a system of linear equations.
20	*Geometry*	G-C.A.2	SR	Determine the measure of an arc in a circle which is divided into congruent sections.
21	*Algebra and Functions*	F-IF.B.4	SR	Determine the minimum value of a quadratic function based on the expression that defines it.
22	*Geometry*	G-GPE.B.7	SR	Calculate the area of a parallelogram graphed on a coordinate plane.
23	*Number and Quantity*	N-Q.A.1	SR	Use appropriate units to describe real-world situations.
24	*Geometry*	G-GMD.A.1	SR	Approximate the area of a circle given its diameter.
25	*Statistics and Probability*	S-CP.A.2	SR	Given the probabilities of two independent events, determine the probability of both events occurring.

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
26	*Number and Quantity*	N-Q.A.3	SR	Describe the effects of rounding on a measurement in a real-world situation.
27	*Statistics and Probability*	S-ID.A.1	CR	Interpret real-world data displayed in a box plot by calculating measures of center and analyzing quartiles.
28	*Geometry*	G-SRT.C.8	SR	Use the Pythagorean Theorem to find an unknown length in a real-world problem.
29	*Algebra and Functions*	F-BF.A.2	SR	Identify a recursive function that models an arithmetic sequence in a real-world situation.
30	*Geometry*	G-C.A.2	SR	Calculate the measure of an angle within a triangle inscribed in a circle.
31	*Statistics and Probability*	S-ID.A.3	SR	Explain the effect of removing an outlier on the measures of center of a data set.
32	*Geometry*	G-CO.A.2	SR	Identify a graph that shows a triangle after a rotation and a transformation that is not rigid from its description.
33	*Algebra and Functions*	A-REI.A.1	SR	Identify the mathematical property used to justify a step in the solution of an equation.
34	*Geometry*	G-GMD.A.1	CR	Compare the dimensions of two circles and calculate the radius of a third circle based on a comparison of their areas.
35	*Algebra and Functions*	F-LE.A.3	SA	Compare the values of a linear, a quadratic, and an exponential function as the value of the independent variable increases.
36	*Geometry*	G-CO.C.10	SR	Use a theorem about triangles to show the relationship of sides and side lengths based on a diagram.
37	*Algebra and Functions*	A-CED.A.3	SR	Identify a system of equations and inequalities based on a description.
38	*Algebra and Functions*	F-LE.B.5	SR	Interpret the rate of change of a linear model that describes a real-world situation.
39	*Geometry*	G-SRT.B.4	SR	Use theorems about triangles to compare similar triangles and to calculate unknown side lengths.
40	*Algebra and Functions*	F-IF.A.2	SR	Given a quadratic function that represents a real-world situation, determine the element of the domain that produces a given output.
41	*Algebra and Functions*	A-CED.A.1	SR	Create and solve a one-variable equation based on a real-world situation.
42	*Geometry*	G-SRT.A.2	SR	Identify a true statement regarding the relationship of a triangle and its image after a dilation.

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