



MASSACHUSETTS

Department of Elementary  
and Secondary Education

Release of  
MCAS Test Information  
from the  
November 2025 High School  
ELA and Math Retests

January 2026

Massachusetts Department of  
Elementary and Secondary Education



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 2025 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 2025 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.

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## II. English Language Arts Retest

# English Language Arts Retest

The November 2025 English Language Arts (ELA) retest 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](http://www.doe.mass.edu/mcas/admin.html).

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](http://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 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 materials were allowed during any ELA test session.

**November 2025 English Language Arts Retest  
Computer-Based Operational Items**

<b>CBT Item No.</b>	<b>Reporting Category</b>	<b>Standard</b>	<b>Item Type*</b>	<b>Item Description</b>
1	<i>Reading</i>	RL.9-10.3	SR	Identify a character's feelings based on a specific paragraph from an excerpt.
2	<i>Language</i>	L.9-10.4	SR	Determine the meaning of a word in a specific paragraph of an excerpt.
3	<i>Reading</i>	RL.9-10.3	SR	Determine how the tone of a character in one paragraph contrasts with the tone of another character in a different paragraph of an excerpt.
4	<i>Language</i>	L.9-10.3	SR	Determine the purpose of dashes in two excerpts on similar topics.
5	<i>Reading</i>	RL.9-10.5	SR	Determine how specific paragraphs in two excerpts on similar topics create a sense of surprise.
6	<i>Reading</i>	RL.9-10.1	SR	Make an inference about a character based on a specific paragraph of an excerpt and identify a sentence from another excerpt that suggests a similar inference about another character.
7	<i>Reading</i>	RL.9-10.1	SR	Determine the narrative element developed by specific details from two excerpts on similar topics.
8	<i>Language, Writing</i>	L.9-10.1, L.9-10.2, L.9-10.3, W.9-10.2, W.9-10.4	ES	Write an essay that analyzes how the character traits of the narrators in two excerpts on similar topics are revealed; use details from both excerpts to develop the essay.
9	<i>Reading</i>	RL.9-10.3	SR	Determine what specific lines of a poem suggest about a character.
10	<i>Reading</i>	RL.9-10.1	SR	Identify a detail from a poem that best conveys a specific idea.
11	<i>Reading</i>	RL.9-10.5	SR	Determine how the authors of two poems on similar topics show the passage of time.
12	<i>Reading</i>	RL.9-10.2	SR	Identify a theme that is shared between two poems.
13	<i>Reading</i>	RL.9-10.4	SR	Determine whether the details from two poems on similar topics contribute to one mood or another mood.
14	<i>Language</i>	L.9-10.4	SR	Determine the meaning of a word in a specific paragraph of an article based on the definition of its root word.
15	<i>Reading</i>	RI.9-10.5	SR	Determine the purpose of two paragraphs in an article.
16	<i>Reading</i>	RI.9-10.1	SR	Determine the author's intended audience in an article.
17	<i>Language</i>	L.9-10.4	SR	Determine the meaning of a word in a specific sentence of an article.
18	<i>Reading</i>	RI.9-10.5	SR	Identify a statement that describes how two articles on similar topics use headings.
19	<i>Reading</i>	RI.9-10.8	SR	Identify a paragraph from one article that supports a claim made in a sentence from another article on a similar topic.
20	<i>Reading</i>	RI.9-10.3	SR	Determine which quotations from two articles on similar topics demonstrate characteristics of a key idea.
21	<i>Reading</i>	RI.9-10.5	SR	Compare the authors' uses of details to support and develop claims in two articles on similar topics.
22	<i>Language, Writing</i>	L.9-10.1, L.9-10.2, L.9-10.3, W.9-10.1, W.9-10.4	ES	Write a letter to a specific audience arguing for a specific action; use details from both articles to support the argument.
23	<i>Reading</i>	RL.9-10.5	SR	Analyze the author's use of language in a paragraph of an excerpt.
24	<i>Reading</i>	RL.9-10.5	SR	Determine the effect of a sentence in an excerpt.

<b>CBT Item No.</b>	<b>Reporting Category</b>	<b>Standard</b>	<b>Item Type*</b>	<b>Item Description</b>
25	<i>Language</i>	L.9-10.4	SR	Identify a phrase that provides the best context clue for understanding the meaning of a different phrase in a paragraph of an excerpt.
26	<i>Reading</i>	RL.9-10.1	SR	Make an inference based on a sentence from a specific paragraph of an excerpt.
27	<i>Reading</i>	RL.9-10.2	SR	Determine the purpose of a specific paragraph of an excerpt.
28	<i>Reading</i>	RL.9-10.2	SR	Identify a quotation from an excerpt that suggests an idea similar to the idea in a quotation from another excerpt on a related topic.
29	<i>Reading</i>	RL.9-10.2	SR	Make an inference about two authors' relationships with similar animals in two excerpts on related topics and identify a detail from each excerpt that supports the inference.
30	<i>Language</i>	L.9-10.2	SR	Identify the purpose of dashes in two sentences from two excerpts on related topics.

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

**November 2025 English Language Arts Retest**  
**Paper-Based Operational Items**

<b>PBT Item No.</b>	<b>Reporting Category</b>	<b>Standard</b>	<b>Item Type*</b>	<b>Item Description</b>
1	<i>Reading</i>	RL.9-10.3	SR	Identify a character's feelings based on a specific paragraph from an excerpt.
2	<i>Language</i>	L.9-10.4	SR	Determine the meaning of a word in a specific paragraph of an excerpt.
3	<i>Reading</i>	RL.9-10.3	SR	Determine how the tone of a character in one paragraph contrasts with the tone of another character in a different paragraph of an excerpt.
4	<i>Language</i>	L.9-10.3	SR	Determine the purpose of dashes in two excerpts on similar topics.
5	<i>Reading</i>	RL.9-10.5	SR	Determine how specific paragraphs in two excerpts on similar topics create a sense of surprise.
6	<i>Reading</i>	RL.9-10.1	SR	Make an inference about a character based on a specific paragraph of an excerpt and identify a sentence from another excerpt that suggests a similar inference about another character.
7	<i>Reading</i>	RL.9-10.1	SR	Determine the narrative element developed by specific details from two excerpts on similar topics.
8	<i>Language, Writing</i>	L.9-10.1, L.9-10.2, L.9-10.3, W.9-10.2, W.9-10.4	ES	Write an essay that analyzes how the character traits of the narrators in two excerpts on similar topics are revealed; use details from both excerpts to develop the essay.
9	<i>Reading</i>	RL.9-10.3	SR	Determine what specific lines of a poem suggest about a character.
10	<i>Reading</i>	RL.9-10.1	SR	Identify a detail from a poem that best conveys a specific idea.
11	<i>Reading</i>	RL.9-10.5	SR	Determine how the authors of two poems on similar topics show the passage of time.
12	<i>Reading</i>	RL.9-10.2	SR	Identify a theme that is shared between two poems.
13	<i>Reading</i>	RL.9-10.4	SR	Determine whether the details from two poems on similar topics contribute to one mood or another mood.
14	<i>Language</i>	L.9-10.4	SR	Determine the meaning of a word in a specific paragraph of an article based on the definition of its root word.
15	<i>Reading</i>	RI.9-10.5	SR	Determine the purpose of two paragraphs in an article.
16	<i>Reading</i>	RI.9-10.1	SR	Determine the author's intended audience in an article.
17	<i>Language</i>	L.9-10.4	SR	Determine the meaning of a word in a specific sentence of an article.
18	<i>Reading</i>	RI.9-10.5	SR	Identify a statement that describes how two articles on similar topics use headings.
19	<i>Reading</i>	RI.9-10.8	SR	Identify a paragraph from one article that supports a claim made in a sentence from another article on a similar topic.
20	<i>Reading</i>	RI.9-10.3	SR	Determine which quotations from two articles on similar topics demonstrate characteristics of a key idea.
21	<i>Reading</i>	RI.9-10.5	SR	Compare the authors' uses of details to support and develop claims in two articles on similar topics.
22	<i>Language, Writing</i>	L.9-10.1, L.9-10.2, L.9-10.3, W.9-10.1, W.9-10.4	ES	Write a letter to a specific audience arguing for a specific action; use details from both articles to support the argument.
23	<i>Reading</i>	RL.9-10.5	SR	Analyze the author's use of language in a paragraph of an excerpt.
24	<i>Reading</i>	RL.9-10.5	SR	Determine the effect of a sentence in an excerpt.

<b>PBT Item No.</b>	<b>Reporting Category</b>	<b>Standard</b>	<b>Item Type*</b>	<b>Item Description</b>
25	<i>Language</i>	L.9-10.4	SR	Identify a phrase that provides the best context clue for understanding the meaning of a different phrase in a paragraph of an excerpt.
26	<i>Reading</i>	RL.9-10.1	SR	Make an inference based on a sentence from a specific paragraph of an excerpt.
27	<i>Reading</i>	RL.9-10.2	SR	Determine the purpose of a specific paragraph of an excerpt.
28	<i>Reading</i>	RL.9-10.2	SR	Identify a quotation from an excerpt that suggests an idea similar to the idea in a quotation from another excerpt on a related topic.
29	<i>Reading</i>	RL.9-10.2	SR	Make an inference about two authors' relationships with similar animals in two excerpts on related topics and identify a detail from each excerpt that supports the inference.
30	<i>Language</i>	L.9-10.2	SR	Identify the purpose of dashes in two sentences from two excerpts on related topics.

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

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## III. Mathematics Retest

# Mathematics Retest

The November 2025 Mathematics retest 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](http://www.doe.mass.edu/mcas/admin.html).

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](http://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 52% 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 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.

**CONVERSIONS**

- |                                  |                                   |                                  |
|----------------------------------|-----------------------------------|----------------------------------|
| 1 cup = 8 fluid ounces           | 1 inch = 2.54 centimeters         | 1 pound = 16 ounces              |
| 1 pint = 2 cups                  | 1 meter $\approx$ 39.37 inches    | 1 pound $\approx$ 0.454 kilogram |
| 1 quart = 2 pints                | 1 mile = 5280 feet                | 1 kilogram $\approx$ 2.2 pounds  |
| 1 gallon = 4 quarts              | 1 mile = 1760 yards               | 1 ton = 2000 pounds              |
| 1 gallon $\approx$ 3.785 liters  | 1 mile $\approx$ 1.609 kilometers |                                  |
| 1 liter $\approx$ 0.264 gallon   | 1 kilometer $\approx$ 0.62 mile   |                                  |
| 1 liter = 1000 cubic centimeters |                                   |                                  |

**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 . . . .  $SA = s^2 + 2s\ell$   
 ( $\ell$  = slant height)  
 right rectangular prism . .  $SA = 2(lw) + 2(hw) + 2(lh)$

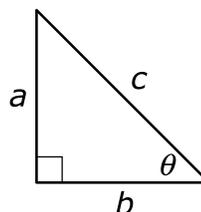
**VOLUME (V) FORMULAS**

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

**CIRCLE FORMULAS**

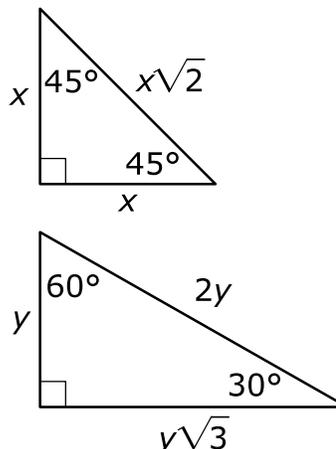
- pi . . . . .  $\pi \approx 3.14$   
 circumference . . . .  $C = 2\pi r$  OR  $C = \pi d$   
 area . . . . .  $A = \pi r^2$

**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 2025 Mathematics Retest  
Computer-Based Operational Items**

<b>CBT Item No.</b>	<b>Reporting Category</b>	<b>Standard</b>	<b>Item Type*</b>	<b>Item Description</b>
1	<i>Algebra and Functions</i>	F-IF.B.4	SR	Interpret the tendency of a linear function based on a context.
2	<i>Geometry</i>	G-CO.B.6	SR	Determine whether various transformations, if performed on a parallelogram, would result in a congruent figure.
3	<i>Geometry</i>	G-C.A.2	SR	Describe the hypotenuse of a right triangle inscribed in a circle in terms of the circle.
4	<i>Algebra and Functions</i>	A-SSE.A.2	SR	Identify an equivalent factored form of a given trinomial expression.
5	<i>Geometry</i>	G-SRT.C.8	SA	Given irrational lengths of the two legs of a right triangle, identify the length of the hypotenuse.
6	<i>Algebra and Functions</i>	A-REI.B.3	CR	Evaluate the accuracy of two linear equations and determine the value of variables that make two other equations true.
7	<i>Algebra and Functions</i>	F-LE.B.5	SR	Interpret the parameters of an exponential function in terms of the real-world situation it represents.
8	<i>Geometry</i>	G-SRT.B.5	SA	Use proportions to determine an unknown side length in a diagram with similar pentagons.
9	<i>Number and Quantity</i>	N-RN.A.1	SR	Given the value of a rational exponential expression, identify the value of the variable.
10	<i>Algebra and Functions</i>	A-REI.C.5	SA	Determine an equivalent system of equations that has the same solution as a given system.
11	<i>Algebra and Functions</i>	F-IF.C.9	SA	Identify the maximum of a quadratic function and compare that value to the maximum values of different quadratic functions.
12	<i>Geometry</i>	G-GPE.B.6	SA	Given the coordinates of its endpoints, determine the coordinates of the midpoint of a line segment.
13	<i>Number and Quantity</i>	N-Q.A.2	CR	Use estimation strategies to solve problems based on real-world data displayed in a table.
14	<i>Algebra and Functions</i>	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	<i>Geometry</i>	G-C.A.3	SA	Calculate an unknown angle measure in a quadrilateral inscribed in a circle based on other given angle measures in the quadrilateral.
16	<i>Algebra and Functions</i>	A-APR.A.1	SR	Create an equivalent one-variable expression by distributing and combining like terms.
17	<i>Algebra and Functions</i>	F-BF.B.3	SR	Identify the value of the constant in a quadratic function after a translation.
18	<i>Number and Quantity</i>	N-RN.A.2	SA	Identify an exponential expression equivalent to a given radical expression and evaluate a different rational exponential expression.
19	<i>Geometry</i>	G-CO.B.8	SR	Determine whether enough information is given about different pairs of triangles to prove their congruence.
20	<i>Algebra and Functions</i>	A-CED.A.4	SR	Rearrange a given formula to solve for a variable of interest.
21	<i>Geometry</i>	G-SRT.C.6	SR	Identify the ratio of the length of one leg of a triangle to the length of the hypotenuse given another ratio of side lengths in a special right triangle.
22	<i>Geometry</i>	G-CO.D.12	SR	Interpret the results of the construction of a perpendicular bisector of a line segment.
23	<i>Statistics and Probability</i>	S-CP.B.6	SR	Identify a conditional probability from a Venn diagram, based on a real-world context.

<b>CBT Item No.</b>	<b>Reporting Category</b>	<b>Standard</b>	<b>Item Type*</b>	<b>Item Description</b>
24	<i>Algebra and Functions</i>	A-CED.A.3	SR	Determine whether given ordered pairs represent solutions of a system of linear inequalities, graphed on a coordinate plane.
25	<i>Number and Quantity</i>	N-Q.A.1	SA	Use dimensional analysis to solve a real-world problem.
26	<i>Geometry</i>	G-CO.A.1	SR	Identify conditions that must be present in a pair of parallel lines.
27	<i>Statistics and Probability</i>	S-ID.B.5	CR	Calculate joint, marginal, and conditional relative frequencies based on real-world data displayed in a two-way frequency table.
28	<i>Algebra and Functions</i>	F-BF.A.2	SR	Create a recursive function that models an arithmetic sequence in a real-world situation.
29	<i>Geometry</i>	G-SRT.A.3	SR	Determine whether information about two triangles is sufficient to prove them similar.
30	<i>Number and Quantity</i>	N-Q.A.3	SR	Determine the effects of rounding on the accuracy of a measurement based on a real-world situation.
31	<i>Algebra and Functions</i>	F-LE.A.2	SR	Construct a linear function based on a description of a real-world situation.
32	<i>Geometry</i>	G-CO.A.5	SA	Graph a figure on a coordinate plane after a reflection and identify a general rule for a given translation.
33	<i>Statistics and Probability</i>	S-ID.A.1	SR	Interpret real-world data displayed in a box plot.
34	<i>Geometry</i>	G-C.B.5	CR	Calculate the circumference and the area of a circle, the area of a sector of the circle, and the measure of a central angle within the circle defined by the length of the arc it intercepts.
35	<i>Statistics and Probability</i>	S-ID.C.7	SR	Interpret the slope and the y-intercept of a linear model based on a real-world situation.
36	<i>Algebra and Functions</i>	F-IF.A.1	SR	Determine the domain of a function by inspecting its graph.
37	<i>Algebra and Functions</i>	A-REI.A.1	SR	Identify the mathematical property used to justify a step in the solution of a linear equation.
38	<i>Geometry</i>	G-GPE.B.7	SR	Use the distance formula to solve a problem involving the area of a triangle inscribed in a circle, graphed on a coordinate plane.
39	<i>Geometry</i>	G-GMD.A.3	SA	Calculate the volume of a cylinder and use the volume formula to solve a real-world problem.
40	<i>Algebra and Functions</i>	A-SSE.A.1	SR	Interpret a part of an expression in terms of the context it represents.
41	<i>Geometry</i>	G-CO.C.10	SR	Use a theorem about triangles to show the relationship of sides and side lengths based on a diagram.
42	<i>Statistics and Probability</i>	S-CP.A.1	SR	Identify the intersection of two given sets of numbers.

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

**November 2025 Mathematics Retest**  
**Paper-Based Operational Items**

<b>PBT Item No.</b>	<b>Reporting Category</b>	<b>Standard</b>	<b>Item Type*</b>	<b>Item Description</b>
1	<i>Algebra and Functions</i>	F-IF.B.4	SR	Interpret the tendency of a linear function based on a context.
2	<i>Geometry</i>	G-CO.B.6	SR	Determine whether various transformations, if performed on a parallelogram, would result in a congruent figure.
3	<i>Geometry</i>	G-C.A.2	SR	Describe the hypotenuse of a right triangle inscribed in a circle in terms of the circle.
4	<i>Algebra and Functions</i>	A-SSE.A.2	SR	Identify an equivalent factored form of a given trinomial expression.
5	<i>Geometry</i>	G-SRT.C.8	SR	Given irrational lengths of the two legs of a right triangle, identify the length of the hypotenuse.
6	<i>Algebra and Functions</i>	A-REI.B.3	CR	Evaluate the accuracy of two linear equations and determine the value of variables that make two other equations true.
7	<i>Algebra and Functions</i>	F-LE.B.5	SR	Interpret the parameters of an exponential function in terms of the real-world situation it represents.
8	<i>Geometry</i>	G-SRT.B.5	SA	Use proportions to determine an unknown side length in a diagram with similar pentagons.
9	<i>Number and Quantity</i>	N-RN.A.1	SR	Given the value of a rational exponential expression, identify the value of the variable.
10	<i>Algebra and Functions</i>	A-REI.C.5	SA	Determine an equivalent system of equations that has the same solution as a given system.
11	<i>Algebra and Functions</i>	F-IF.C.9	SA	Identify the maximum of a quadratic function and compare that value to the maximum values of different quadratic functions.
12	<i>Geometry</i>	G-GPE.B.6	SR	Given the coordinates of its endpoints, determine the coordinates of the midpoint of a line segment.
13	<i>Number and Quantity</i>	N-Q.A.2	CR	Use estimation strategies to solve problems based on real-world data displayed in a table.
14	<i>Algebra and Functions</i>	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	<i>Geometry</i>	G-C.A.3	SA	Calculate an unknown angle measure in a quadrilateral inscribed in a circle based on other given angle measures in the quadrilateral.
16	<i>Algebra and Functions</i>	A-APR.A.1	SR	Create an equivalent one-variable expression by distributing and combining like terms.
17	<i>Algebra and Functions</i>	F-BF.B.3	SR	Identify the value of the constant in a quadratic function after a translation.
18	<i>Number and Quantity</i>	N-RN.A.2	SA	Identify an exponential expression equivalent to a given radical expression and evaluate a different rational exponential expression.
19	<i>Geometry</i>	G-CO.B.8	SR	Determine whether enough information is given about different pairs of triangles to prove their congruence.
20	<i>Algebra and Functions</i>	A-CED.A.4	SR	Rearrange a given formula to solve for a variable of interest.
21	<i>Geometry</i>	G-SRT.C.6	SR	Identify the ratio of the length of one leg of a triangle to the length of the hypotenuse given another ratio of side lengths in a special right triangle.
22	<i>Geometry</i>	G-CO.D.12	SR	Interpret the results of the construction of a perpendicular bisector of a line segment.
23	<i>Statistics and Probability</i>	S-CP.B.6	SR	Identify a conditional probability from a Venn diagram, based on a real-world context.

<b>PBT Item No.</b>	<b>Reporting Category</b>	<b>Standard</b>	<b>Item Type*</b>	<b>Item Description</b>
24	<i>Algebra and Functions</i>	A-CED.A.3	SR	Determine whether given ordered pairs represent solutions of a system of linear inequalities, graphed on a coordinate plane.
25	<i>Number and Quantity</i>	N-Q.A.1	SA	Use dimensional analysis to solve a real-world problem.
26	<i>Geometry</i>	G-CO.A.1	SR	Identify conditions that must be present in a pair of parallel lines.
27	<i>Statistics and Probability</i>	S-ID.B.5	CR	Calculate joint, marginal, and conditional relative frequencies based on real-world data displayed in a two-way frequency table.
28	<i>Algebra and Functions</i>	F-BF.A.2	SR	Identify a recursive function that models an arithmetic sequence in a real-world situation.
29	<i>Geometry</i>	G-SRT.A.3	SR	Determine whether information about two triangles is sufficient to prove them similar.
30	<i>Number and Quantity</i>	N-Q.A.3	SR	Determine the effects of rounding on the accuracy of a measurement based on a real-world situation.
31	<i>Algebra and Functions</i>	F-LE.A.2	SR	Construct a linear function based on a description of a real-world situation.
32	<i>Geometry</i>	G-CO.A.5	SR	Identify the graph of a figure on a coordinate plane after a reflection and identify a general rule for a given translation.
33	<i>Statistics and Probability</i>	S-ID.A.1	SR	Interpret real-world data displayed in a box plot.
34	<i>Geometry</i>	G-C.B.5	CR	Calculate the circumference and the area of a circle, the area of a sector of the circle, and the measure of a central angle within the circle defined by the length of the arc it intercepts.
35	<i>Statistics and Probability</i>	S-ID.C.7	SR	Interpret the slope and the y-intercept of a linear model based on a real-world situation.
36	<i>Algebra and Functions</i>	F-IF.A.1	SR	Determine the domain of a function by inspecting its graph.
37	<i>Algebra and Functions</i>	A-REI.A.1	SR	Identify the mathematical property used to justify a step in the solution of a linear equation.
38	<i>Geometry</i>	G-GPE.B.7	SR	Use the distance formula to solve a problem involving the area of a triangle inscribed in a circle, graphed on a coordinate plane.
39	<i>Geometry</i>	G-GMD.A.3	SA	Calculate the volume of a cylinder and use the volume formula to solve a real-world problem.
40	<i>Algebra and Functions</i>	A-SSE.A.1	SR	Interpret a part of an expression in terms of the context it represents.
41	<i>Geometry</i>	G-CO.C.10	SR	Use a theorem about triangles to show the relationship of sides and side lengths based on a diagram.
42	<i>Statistics and Probability</i>	S-CP.A.1	SR	Identify the intersection of two given sets of numbers.

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