



MASSACHUSETTS

Department of Elementary
and Secondary Education

*Release of
MCAS Test Information
from the
March 2024 ELA and Math Retests*

**March 2024
Massachusetts Department of
Elementary and Secondary Education**



This document was prepared by the Massachusetts Department of Elementary and Secondary Education

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Acting Commissioner

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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 March 2024 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 March 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 March 2024 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 March 2024 next-generation English Language Arts 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.

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 next-generation 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 next-generation 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 next-generation 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 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.

March 2024 English Language Arts Retest
Computer-Based Operational Items

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
1	<i>Reading</i>	RL.9-10.3	SR	Make an inference about the relationship among characters in an excerpt.
2	<i>Language</i>	L.9-10.5	SR	Determine what a word in a specific paragraph of an excerpt reveals about a character.
3	<i>Reading</i>	RL.9-10.1	SR	Make an inference about a character based on specific lines in an excerpt from a novel in verse.
4	<i>Reading</i>	RL.9-10.1	SR	Compare characters' perspectives about setting in an excerpt and a novel in verse on similar topics.
5	<i>Reading</i>	RL.9-10.4	SR	Compare the tones of an excerpt and a novel in verse on similar topics.
6	<i>Language</i>	L.9-10.5	SR	Compare the effects of figurative language in an excerpt and a novel in verse on similar topics.
7	<i>Reading</i>	RL.9-10.3	SR	Compare the roles of two supporting characters in an excerpt and a novel in verse on similar topics.
8	<i>Reading</i>	RL.9-10.6	SR	Compare the stylistic choices of authors of an excerpt and a novel in verse on similar topics.
9	<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 compares and contrasts the reactions of characters in an excerpt and a novel in verse on similar topics.
10	<i>Language</i>	L.9-10.4	SR	Determine the meaning of an unknown word based on context.
11	<i>Reading</i>	RL.9-10.1	SR	Make an inference about an object based on a line from a poem.
12	<i>Reading</i>	RL.9-10.3	SR	Determine what lines from a poem reveal about the relationship between the speaker and the reader.
13	<i>Reading</i>	RL.9-10.2	SR	Determine the central idea that is developed by a sentence from an excerpt; identify a quotation from a poem on a similar topic that develops a similar central idea.
14	<i>Language</i>	L.9-10.4	SR	Identify a word that best replaces a word used in a sentence of an article.
15	<i>Reading</i>	RI.9-10.8	SR	Identify a sentence that presents a counterargument to an idea in an article.
16	<i>Reading</i>	RI.9-10.8	SR	Identify a sentence that supports a claim from an article.
17	<i>Reading</i>	RI.9-10.1	SR	Make an inference based on sentences from two articles on similar topics.
18	<i>Reading</i>	RI.9-10.6	SR	Determine a similar point of view of authors from two articles on similar topics.
19	<i>Reading</i>	RI.9-10.7	SR	Determine an idea that is supported by the photographs in two articles on similar topics.
20	<i>Reading</i>	RI.9-10.2	SR	Determine a central idea that is developed in two articles; identify a detail from each article that supports the idea.
21	<i>Reading</i>	RI.9-10.4	SR	Determine the tones that are developed in quotations from 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 an essay arguing for a specific action based on two articles on similar topics; use information from both articles to develop the argument.
23	<i>Reading</i>	RL.9-10.5	SR	Identify how a paragraph contributes to the development of an excerpt.
24	<i>Reading</i>	RL.9-10.1	SR	Make an inference based on sentences from an excerpt.

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
25	<i>Reading</i>	RL.9-10.3	SR	Determine what a sentence from an excerpt reveals about a character.
26	<i>Reading</i>	RL.9-10.4	SR	Determine what a phrase in an excerpt suggests about a character.
27	<i>Reading</i>	RL.9-10.4	SR	Determine the purpose of figurative language in specific sentences of an excerpt.
28	<i>Reading</i>	RL.9-10.5	SR	Identify the effect a paragraph has in an excerpt.
29	<i>Reading</i>	RL.9-10.4	SR	Determine the tone created by figurative language in a paragraph of an excerpt; identify a phrase from the excerpt that uses figurative language with a similar tone.
30	<i>Language</i>	L.9-10.3	SR	Analyze the effect of short sentences and sentence fragments that are used by the author in an excerpt.

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

March 2024 English Language Arts Retest
Paper-Based Operational Items

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
1	<i>Reading</i>	RL.9-10.3	SR	Make an inference about the relationship among characters in an excerpt.
2	<i>Language</i>	L.9-10.5	SR	Determine what a word in a specific paragraph of an excerpt reveals about a character.
3	<i>Reading</i>	RL.9-10.1	SR	Make an inference about a character based on specific lines in an excerpt from a novel in verse.
4	<i>Reading</i>	RL.9-10.1	SR	Compare characters' perspectives about setting in an excerpt and a novel in verse on similar topics.
5	<i>Reading</i>	RL.9-10.4	SR	Compare the tones of an excerpt and a novel in verse on similar topics.
6	<i>Language</i>	L.9-10.5	SR	Compare the effects of figurative language in an excerpt and a novel in verse on similar topics.
7	<i>Reading</i>	RL.9-10.3	SR	Compare the roles of two supporting characters in an excerpt and a novel in verse on similar topics.
8	<i>Reading</i>	RL.9-10.6	SR	Compare the stylistic choices of authors of an excerpt and a novel in verse on similar topics.
9	<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 compares and contrasts the reactions of characters in an excerpt and a novel in verse on similar topics.
10	<i>Language</i>	L.9-10.4	SR	Determine the meaning of an unknown word based on context.
11	<i>Reading</i>	RL.9-10.1	SR	Make an inference about an object based on a line from a poem.
12	<i>Reading</i>	RL.9-10.3	SR	Determine what lines from a poem reveal about the relationship between the speaker and the reader.
13	<i>Reading</i>	RL.9-10.2	SR	Determine the central idea that is developed by a sentence from an excerpt; identify a quotation from a poem on a similar topic that develops a similar central idea.
14	<i>Language</i>	L.9-10.4	SR	Identify a word that best replaces a word used in a sentence of an article.
15	<i>Reading</i>	RI.9-10.8	SR	Identify a sentence that presents a counterargument to an idea in an article.
16	<i>Reading</i>	RI.9-10.8	SR	Identify a sentence that supports a claim from an article.
17	<i>Reading</i>	RI.9-10.1	SR	Make an inference based on sentences from two articles on similar topics.
18	<i>Reading</i>	RI.9-10.6	SR	Determine a similar point of view of authors from two articles on similar topics.
19	<i>Reading</i>	RI.9-10.7	SR	Determine an idea that is supported by the photographs in two articles on similar topics.
20	<i>Reading</i>	RI.9-10.2	SR	Determine a central idea that is developed in two articles; identify a detail from each article that supports the idea.
21	<i>Reading</i>	RI.9-10.4	SR	Determine the tones that are developed in quotations from 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 an essay arguing for a specific action based on two articles on similar topics; use information from both articles to develop the argument.
23	<i>Reading</i>	RL.9-10.5	SR	Identify how a paragraph contributes to the development of an excerpt.

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
24	<i>Reading</i>	RL.9-10.1	SR	Make an inference based on sentences from an excerpt.
25	<i>Reading</i>	RL.9-10.3	SR	Determine what a sentence from an excerpt reveals about a character.
26	<i>Reading</i>	RL.9-10.4	SR	Determine what a phrase in an excerpt suggests about a character.
27	<i>Reading</i>	RL.9-10.4	SR	Determine the purpose of figurative language in specific sentences of an excerpt.
28	<i>Reading</i>	RL.9-10.5	SR	Identify the effect a paragraph has in an excerpt.
29	<i>Reading</i>	RL.9-10.4	SR	Determine the tone created by figurative language in a paragraph of an excerpt; identify a phrase from the excerpt that uses figurative language with a similar tone.
30	<i>Language</i>	L.9-10.3	SR	Analyze the effect of short sentences and sentence fragments that are used by the author in an excerpt.

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

III. Mathematics Retest

Mathematics Retest

The March 2024 next-generation 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.

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 next-generation 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 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 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 gallon \approx 3.785 liters

1 liter \approx 0.264 gallon

1 liter = 1000 cubic centimeters

1 inch = 2.54 centimeters

1 meter \approx 39.37 inches

1 mile = 5280 feet

1 mile = 1760 yards

1 mile \approx 1.609 kilometers

1 kilometer \approx 0.62 mile

1 pound = 16 ounces

1 pound \approx 0.454 kilogram

1 kilogram \approx 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 $V = \pi r^2h$

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

pyramid $V = \frac{1}{3}Bh$

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

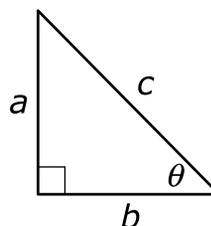
CIRCLE FORMULAS

pi $\pi \approx 3.14$

circumference $C = 2\pi r$ OR $C = \pi d$

area $A = \pi r^2$

RIGHT TRIANGLES



Pythagorean Theorem

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

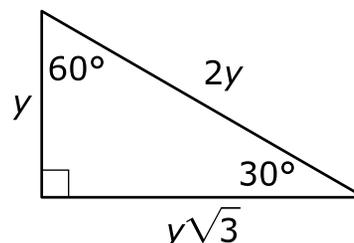
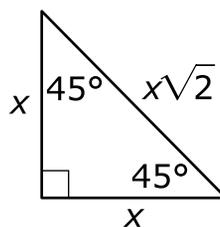
Trigonometric Ratios

$$\sin \theta = \frac{a}{c}$$

$$\cos \theta = \frac{b}{c}$$

$$\tan \theta = \frac{a}{b}$$

SPECIAL RIGHT TRIANGLES



March 2024 Mathematics Retest
Computer-Based Operational Items

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
1	<i>Geometry</i>	G-GMD.A.3	SR	Compare the volumes of two different cylinders within a context.
2	<i>Algebra and Functions</i>	A-REI.D.12	SA	Graph the solution set of a linear inequality in two variables on a coordinate plane.
3	<i>Geometry</i>	G-GPE.B.6	SR	Given the coordinates of the midpoint and an endpoint of a line segment, determine the coordinates of the other endpoint.
4	<i>Algebra and Functions</i>	A-REI.B.4	SR	Determine the solutions of a quadratic equation in one variable.
5	<i>Geometry</i>	G-CO.B.8	SR	Identify criteria that prove two triangles congruent.
6	<i>Number and Quantity</i>	N-Q.A.2	CR	Use quantitative reasoning to estimate solutions of problems based on real-world data displayed in a table.
7	<i>Algebra and Functions</i>	F-LE.A.2	SR	Construct an exponential function from values shown in a table.
8	<i>Geometry</i>	G-SRT.A.2	SR	Describe the relationship between the angles and the sides of two similar parallelograms.
9	<i>Number and Quantity</i>	N-RN.A.2	SR	Evaluate an exponential expression using properties of exponents.
10	<i>Geometry</i>	G-GPE.B.5	SR	Identify an equation of a line parallel to a given line and passing through a given point.
11	<i>Number and Quantity</i>	N-RN.A.1	SA	Determine the exponent that gives a radical expression a stated value and equate a radical expression with an exponential expression.
12	<i>Algebra and Functions</i>	A-SSE.B.3	SR	Identify one of the zeros of a quadratic function based on the expression it defines.
13	<i>Statistics and Probability</i>	S-ID.A.2	CR	Calculate measures of center for a set of data and describe how additional data affect these measures.
14	<i>Algebra and Functions</i>	A-APR.A.1	SA	Determine the sum and the product of two monomial expressions.
15	<i>Algebra and Functions</i>	F-LE.B.5	SR	Determine whether different functions represent an increase or a decrease in value in terms of a context.
16	<i>Statistics and Probability</i>	S-ID.C.7	SR	Interpret the slope of a linear model in terms of a context.
17	<i>Algebra and Functions</i>	A-REI.C.6	SA	Determine the x -value of the solution of a system of linear equations.
18	<i>Statistics and Probability</i>	S-CP.A.4	SA	Use a two-way table of real-world data to compute a joint and a conditional probability.
19	<i>Geometry</i>	G-CO.C.9	SR	Analyze the relationship of two angles created by parallel lines and a transversal.
20	<i>Algebra and Functions</i>	F-BF.A.1	SR	Create a function by combining two quadratic functions.
21	<i>Geometry</i>	G-CO.A.5	SR	Identify the graph of the image of a triangle graphed on a coordinate plane after a reflection.
22	<i>Statistics and Probability</i>	S-ID.B.6	SR	Identify a scatter plot that contains a line of best fit appropriate to represent the data displayed.
23	<i>Algebra and Functions</i>	F-IF.A.1	SR	Identify the domain and the range of a quadratic function from its graph.
24	<i>Geometry</i>	G-CO.B.6	SR	Analyze the results of a translation of a triangle given the translation rule.
25	<i>Algebra and Functions</i>	F-IF.B.6	SR	Calculate the average rate of change of an exponential function over a specified interval from a graph.
26	<i>Geometry</i>	G-CO.D.12	SR	Analyze the construction of a perpendicular bisector of a line segment.
27	<i>Algebra and Functions</i>	A-CED.A.2	CR	Create two-variable equations that represent a real-world situation and graph the equations on a coordinate plane.

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description
28	<i>Geometry</i>	G-C.A.2	SR	Identify a possible measure of a central angle of a circle based on a given range for the measure of an inscribed angle that intercepts the same arc.
29	<i>Algebra and Functions</i>	F-IF.C.7	SR	Determine the slope of a line given a graph based on a real-world situation.
30	<i>Statistics and Probability</i>	S-CP.B.6	SR	Identify an expression that represents a conditional probability based on a description.
31	<i>Algebra and Functions</i>	A-SSE.A.1	SR	Interpret the parts of a linear expression based on the context it represents.
32	<i>Geometry</i>	G-GPE.B.7	SA	Calculate the perimeter and the area of a triangle graphed on a coordinate plane.
33	<i>Number and Quantity</i>	N-Q.A.3	SR	Use conventional rounding methods to solve a real-world problem involving a quantity with units.
34	<i>Geometry</i>	G-SRT.B.5	CR	Given similar pentagons, determine an unknown angle measure, identify the proportion of the pentagon's side lengths, and calculate an unknown side length and a side length of a third similar pentagon.
35	<i>Algebra and Functions</i>	F-IF.B.4	SA	Given the graph of a quadratic function, interpret the vertex and the y -intercept in terms of a context.
36	<i>Geometry</i>	G-CO.C.11	SR	Use theorems about quadrilaterals to classify a set of figures.
37	<i>Algebra and Functions</i>	A-REI.A.1	SR	Identify the property used to justify each step in the solution of a linear equation.
38	<i>Algebra and Functions</i>	A-CED.A.1	SA	Write and solve a one-variable linear equation based on a real-world situation.
39	<i>Geometry</i>	G-SRT.C.8	SA	Use the Pythagorean Theorem and trigonometric relationships to calculate a side length and an angle measure in a right triangle diagram.
40	<i>Geometry</i>	G-CO.A.2	SR	Determine the coordinates, described conceptually, of a point over a variety of transformations.
41	<i>Number and Quantity</i>	N-Q.A.1	SR	Use dimensional analysis to solve a real-world problem.
42	<i>Geometry</i>	G-C.A.3	SR	Determine an unknown angle measure in a diagram of a quadrilateral inscribed in a circle.

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

March 2024 Mathematics Retest
Paper-Based Operational Items

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
1	<i>Geometry</i>	G-GMD.A.3	SR	Compare the volumes of two different cylinders within a context.
2	<i>Algebra and Functions</i>	A-REI.D.12	SR	Identify the solution set of a linear inequality in two variables graphed on a coordinate plane.
3	<i>Geometry</i>	G-GPE.B.6	SR	Given the coordinates of the midpoint and an endpoint of a line segment, determine the coordinates of the other endpoint.
4	<i>Algebra and Functions</i>	A-REI.B.4	SR	Determine the solutions of a quadratic equation in one variable.
5	<i>Geometry</i>	G-CO.B.8	SR	Identify criteria that prove two triangles congruent.
6	<i>Number and Quantity</i>	N-Q.A.2	CR	Use quantitative reasoning to estimate solutions of problems based on real-world data displayed in a table.
7	<i>Algebra and Functions</i>	F-LE.A.2	SR	Construct an exponential function from values shown in a table.
8	<i>Geometry</i>	G-SRT.A.2	SR	Describe the relationship between the angles and the sides of two similar parallelograms.
9	<i>Number and Quantity</i>	N-RN.A.2	SR	Evaluate an exponential expression using properties of exponents.
10	<i>Geometry</i>	G-GPE.B.5	SR	Identify an equation of a line parallel to a given line and passing through a given point.
11	<i>Number and Quantity</i>	N-RN.A.1	SA	Determine the exponent that gives a radical expression a stated value and equate a radical expression with an exponential expression.
12	<i>Algebra and Functions</i>	A-SSE.B.3	SR	Identify one of the zeros of a quadratic function based on the expression it defines.
13	<i>Statistics and Probability</i>	S-ID.A.2	CR	Calculate measures of center for a set of data and describe how additional data affect these measures.
14	<i>Algebra and Functions</i>	A-APR.A.1	SR	Determine the sum and the product of two monomial expressions.
15	<i>Algebra and Functions</i>	F-LE.B.5	SR	Determine whether different functions represent an increase or a decrease in value in terms of a context.
16	<i>Statistics and Probability</i>	S-ID.C.7	SR	Interpret the slope of a linear model in terms of a context.
17	<i>Algebra and Functions</i>	A-REI.C.6	SA	Determine the x -value of the solution of a system of linear equations.
18	<i>Statistics and Probability</i>	S-CP.A.4	SR	Use a two-way table of real-world data to compute a joint and a conditional probability.
19	<i>Geometry</i>	G-CO.C.9	SR	Analyze the relationship of two angles created by parallel lines and a transversal.
20	<i>Algebra and Functions</i>	F-BF.A.1	SR	Create a function by combining two quadratic functions.
21	<i>Geometry</i>	G-CO.A.5	SR	Identify the graph of the image of a triangle graphed on a coordinate plane after a reflection.
22	<i>Statistics and Probability</i>	S-ID.B.6	SR	Identify a scatter plot that contains a line of best fit appropriate to represent the data displayed.
23	<i>Algebra and Functions</i>	F-IF.A.1	SR	Identify the domain and the range of a quadratic function from its graph.
24	<i>Geometry</i>	G-CO.B.6	SR	Analyze the results of a translation of a triangle given the translation rule.
25	<i>Algebra and Functions</i>	F-IF.B.6	SR	Calculate the average rate of change of an exponential function over a specified interval from a graph.
26	<i>Geometry</i>	G-CO.D.12	SR	Analyze the construction of a perpendicular bisector of a line segment.
27	<i>Algebra and Functions</i>	A-CED.A.2	CR	Create two-variable equations that represent a real-world situation and graph the equations on a coordinate plane.

PBT Item No.	Reporting Category	Standard	Item Type*	Item Description
28	<i>Geometry</i>	G-C.A.2	SR	Identify a possible measure of a central angle of a circle based on a given range for the measure of an inscribed angle that intercepts the same arc.
29	<i>Algebra and Functions</i>	F-IF.C.7	SR	Determine the slope of a line given a graph based on a real-world situation.
30	<i>Statistics and Probability</i>	S-CP.B.6	SR	Identify an expression that represents a conditional probability based on a description.
31	<i>Algebra and Functions</i>	A-SSE.A.1	SR	Interpret the parts of a linear expression based on the context it represents.
32	<i>Geometry</i>	G-GPE.B.7	SA	Calculate the perimeter and the area of a triangle graphed on a coordinate plane.
33	<i>Number and Quantity</i>	N-Q.A.3	SR	Use conventional rounding methods to solve a real-world problem involving a quantity with units.
34	<i>Geometry</i>	G-SRT.B.5	CR	Given similar pentagons, determine an unknown angle measure, identify the proportion of the pentagon's side lengths, and calculate an unknown side length and a side length of a third similar pentagon.
35	<i>Algebra and Functions</i>	F-IF.B.4	SA	Given the graph of a quadratic function, interpret the vertex and the y -intercept in terms of a context.
36	<i>Geometry</i>	G-CO.C.11	SR	Use theorems about quadrilaterals to classify a set of figures.
37	<i>Algebra and Functions</i>	A-REI.A.1	SR	Identify the property used to justify each step in the solution of a linear equation.
38	<i>Algebra and Functions</i>	A-CED.A.1	SA	Write and solve a one-variable linear equation based on a real-world situation.
39	<i>Geometry</i>	G-SRT.C.8	SA	Use the Pythagorean Theorem and trigonometric relationships to calculate a side length and an angle measure in a right triangle diagram.
40	<i>Geometry</i>	G-CO.A.2	SR	Verify the results of a variety of transformations described conceptually.
41	<i>Number and Quantity</i>	N-Q.A.1	SR	Use dimensional analysis to solve a real-world problem.
42	<i>Geometry</i>	G-C.A.3	SR	Determine an unknown angle measure in a diagram of a quadrilateral inscribed in a circle.

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