

Computer-Based Released Items Grade 10 MCAS Mathematics Spring 2026

The spring 2026 grade 10 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.

The Department of Elementary and Secondary Education is releasing items from both versions of the test to provide information about the knowledge and skills that students are expected to demonstrate.

- Released items from the computer-based test are available online at mcas.onlinehelp.cognia.org/released-items.
- Released items from the paper-based test are available in PDF format on the Department's website at www.doe.mass.edu/mcas/release.html.

This document provides information about each released item from the computer-based test, including the following: reporting category, standard covered, item type, item description, and correct answer (for selected-response and short-answer items only). Sample responses and scoring guidelines for constructed-response items will be posted at www.doe.mass.edu/mcas/student/.

A Note about Testing Mode

Most of the operational items on the grade 10 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 or multiple-select items that tested the same Mathematics content and assessed the same standard as the technology-enhanced item.

Grade 10 Mathematics
Spring 2026 Computer-Based Released Operational Items

CBT Item No.	Reporting Category	Standard	Item Type*	Item Description	Correct Answer **
1	<i>Statistics and Probability</i>	S-ID.A.1	SR	Determine the median of data displayed on a line plot.	A
2	<i>Algebra and Functions</i>	A-CED.A.4	SR	Rearrange a given formula to solve for a different variable of interest.	see page 5
3	<i>Algebra and Functions</i>	A-REI.B.3	SR	Identify the solution set of a compound linear inequality.	D
4	<i>Number and Quantity</i>	N-Q.A.2	SR	Use conventional rounding methods to identify a reasonable estimate in a real-world situation.	C
5	<i>Geometry</i>	G-GPE.A.1	SR	Determine the coordinates of the center of a circle and its radius based on an equation of the circle.	see page 5
6	<i>Algebra and Functions</i>	A-REI.C.6	CR	Solve given systems of linear equations and determine the solution of another system of linear equations from a graph.	
7	<i>Geometry</i>	G-GMD.A.1	SR	Compare the circumferences of a circle and its image after the circle has been dilated.	A
8	<i>Algebra and Functions</i>	A-SSE.B.3	SR	Identify properties of a quadratic function illustrated by different forms of the expression that defines it.	see page 5
9	<i>Statistics and Probability</i>	S-ID.B.5	SR	Calculate a relative frequency from real-world data displayed in a two-way frequency table.	B
10	<i>Algebra and Functions</i>	A-SSE.A.2	SR	Identify the factors of a trinomial expression.	D
11	<i>Geometry</i>	G-CO.B.6	SA	Position a trapezoid on a coordinate plane after a translation, and determine whether performing other transformations on the trapezoid will result in congruent figures.	see page 6
12	<i>Algebra and Functions</i>	A-REI.A.1	SR	Determine which step in the incorrect solution of a linear equation contains the error.	D
13	<i>Number and Quantity</i>	N-RN.B.3	CR	Identify irrational numbers from a list, determine whether a sum and a product of numbers from the list are rational, and assess a claim about operations with rational numbers.	
14	<i>Algebra and Functions</i>	A-CED.A.2	SA	Interpret a real-world situation and identify a two-variable equation that represents it.	32; C
15	<i>Geometry</i>	G-CO.B.7	SR	Identify corresponding parts of congruent triangles.	A,D
16	<i>Geometry</i>	G-CO.D.12	SR	Describe the final steps in the construction of a perpendicular bisector of a line segment.	see page 6
17	<i>Algebra and Functions</i>	A-REI.D.10	SA	Determine the x-coordinate of a point that lies on the graph of a linear equation.	see page 7

18	<i>Statistics and Probability</i>	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.	see page 7
19	<i>Algebra and Functions</i>	A-APR.A.1	SR	Identify an expression which is equivalent to the product of binomials.	C
20	<i>Geometry</i>	G-SRT.C.6	SR	Identify an equation that correctly represents a trigonometric ratio in a right triangle diagram.	C
21	<i>Algebra and Functions</i>	F-IF.C.8	SR	Identify the vertex of a quadratic function presented in vertex form.	A
22	<i>Geometry</i>	G-CO.C.10	SR	Use triangle theorems to determine an angle measure in a triangle diagram.	A
23	<i>Geometry</i>	G-GPE.B.6	SA	Identify the point on a line segment that partitions the segment into a given ratio.	see page 7
24	<i>Number and Quantity</i>	N-Q.A.1	SR	Use dimensional analysis and estimation skills to solve a real-world problem.	C
25	<i>Geometry</i>	G-C.B.5	SR	Determine the length of an arc based on a real-world situation.	B
26	<i>Number and Quantity</i>	N-Q.A.3	SR	Use conventional rounding methods to solve a real-world problem involving distance and time.	C
27	<i>Geometry</i>	G-GMD.A.3	CR	Calculate and compare the volumes of a cylinder and a cone, and equate the volume of the cylinder to that of a prism.	
28	<i>Algebra and Functions</i>	F-LE.A.1	SR	Determine whether given situations can be modeled by linear or by exponential functions.	see page 8
29	<i>Statistics and Probability</i>	S-CP.B.7	SR	Calculate a compound probability by applying the Addition Rule.	C
30	<i>Geometry</i>	G-SRT.A.3	SR	Analyze the relationship between two triangles given the congruence of their corresponding angles.	A
31	<i>Algebra and Functions</i>	F-BF.B.3	SR	Identify the graph of a quadratic function over a translation.	D
32	<i>Number and Quantity</i>	N-RN.A.2	SR	Given different exponential expressions, use properties of exponents to identify equivalent expressions.	Part A: D Part B: see page 8
33	<i>Geometry</i>	G-SRT.B.4	SR	Use a proportional relationship to analyze a triangle diagram.	B
34	<i>Statistics and Probability</i>	S-CP.A.1	CR	Identify specific subsets of a sample space based on real-world data displayed in a Venn diagram.	
35	<i>Algebra and Functions</i>	F-LE.B.5	SR	Interpret the parameters of a linear function in terms of a real-world situation.	Part A: D Part B: see page 8
36	<i>Geometry</i>	G-C.A.3	SR	Determine an unknown angle measure in a pentagon inscribed in a circle based on given angle measures and relationships.	A

37	<i>Geometry</i>	G-SRT.A.2	SR	Given pairs of triangles and some of their measurements, identify the pair which is not a similar pair.	B
38	<i>Algebra and Functions</i>	F-IF.A.1	SR	Identify the range of a quadratic function from its graph.	D
39	<i>Geometry</i>	G-SRT.C.8	SR	Determine an unknown length and an unknown angle measure in a right triangle based on a real-world situation.	Part A: C Part B: see page 8
40	<i>Algebra and Functions</i>	F-BF.A.1	SR	Create an exponential function based on a real-word situation.	C
41	<i>Geometry</i>	G-CO.A.3	SR	Identify rotations that will carry a parallelogram, graphed on a coordinate plane, onto itself.	see page 8
42	<i>Algebra and Functions</i>	F-IF.B.5	SR	Identify the domain of a linear function based on its context.	C

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

**Answers are provided here for selected-response and short-answer items only. Pages 5–8 of this document provide correct answers for technology-enhanced (TE) items. Sample responses and scoring guidelines for constructed-response items will be posted at www.doe.mass.edu/mcas/student/default.html.

Correct Answer for CBT Item #2: Technology-Enhanced Item

$$m = \frac{\boxed{E} \boxed{2}}{\boxed{v^2}} \quad \text{or} \quad m = \frac{\boxed{2} \boxed{E}}{\boxed{v^2}}$$

Correct Answer for CBT Item #5: Technology-Enhanced Item

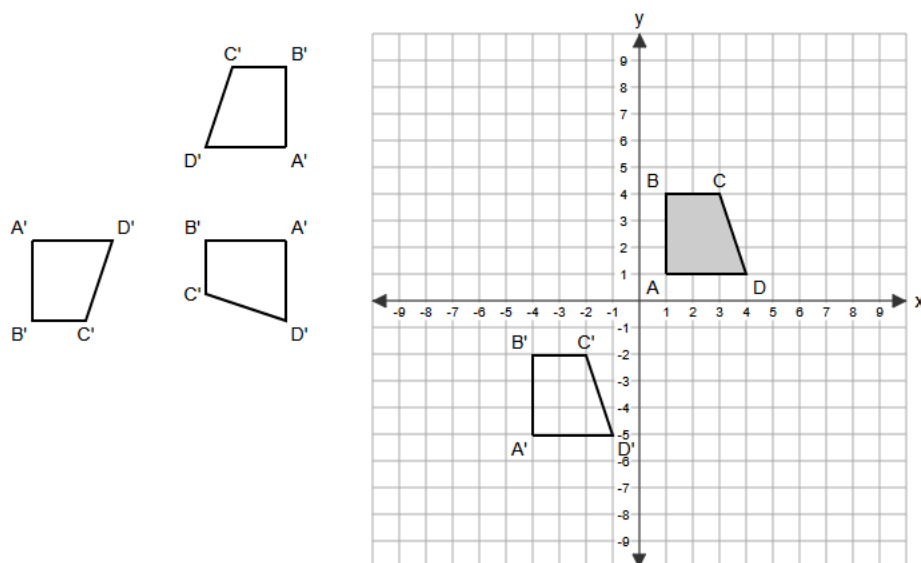
The center of the circle has coordinates , and the radius of the circle is units.

Correct Answer for CBT Item #8: Technology-Enhanced Item

Vertex	x -intercepts	y -intercept
$(x + 1)^2 - 4$	$(x + 3)(x - 1)$	$x^2 + 2x - 3$

Correct Answer for CBT Item #11: Technology-Enhanced Item

Part A



Part B

Transformation	Congruent to Trapezoid $ABCD$	Not Congruent to Trapezoid $ABCD$
a reflection over $y = -10$	☒	☐
a 45° counterclockwise rotation about the origin	☒	☐
a dilation by a scale factor of 2 with respect to the origin	☐	☒

Correct Answer for CBT Item #16: Technology-Enhanced Item

With compass setting, an arc was drawn from that intersected the arc from the first step at two points. Then, the was used to draw a line through the two points of intersection of the arcs.

Correct Answer for CBT Item #17: Technology-Enhanced Item

$$x = 7$$

Correct Answer for CBT Item #18: Technology-Enhanced Item

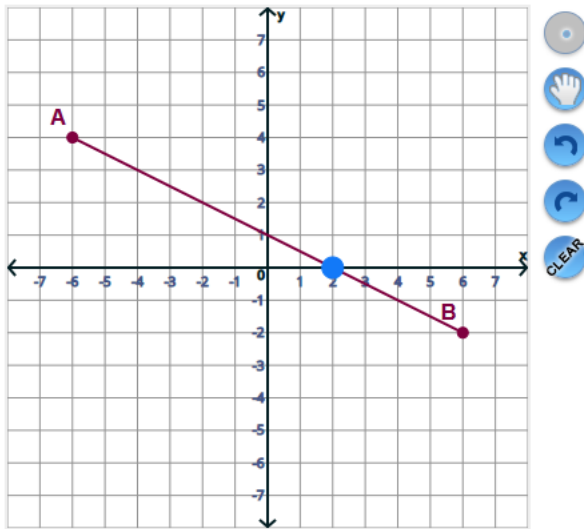
Part A

Based on the equation, a student's test score
increased by 5 for each
hour the student spent studying for the art test. A
student who did not study for the test could expect to
receive a score of 65.

Part B

4 hours

Correct Answer for CBT Item #23: Technology-Enhanced Item



Correct Answer for CBT Item #28: Technology-Enhanced Item

Situation	Modeled by a Linear Function	Modeled by an Exponential Function
The enrollment at a gym increases at a constant rate over time.	☒	☐
The value of a car decreases at a rate of 5% per year.	☐	☒
The population of a city doubles every 20 years.	☐	☒

Correct Answer for CBT Item #32: Technology-Enhanced Item

Part B

x^{-4}

1

x^4

Correct Answer for CBT Item #35: Technology-Enhanced Item

Part B

Based on the function, the total expenses for the month of October were . The rate of change of the function indicates that the total expenses increase by for each car washed.

Correct Answer for CBT Item #39: Technology-Enhanced Item

Part B

$$\sin x^\circ = \frac{h}{34} \quad \text{or} \quad \tan x^\circ = \frac{h}{13}$$

Correct Answer for CBT Item #41: Technology-Enhanced Item

Either a clockwise rotation about the origin or a counterclockwise rotation about the point $(3, -3)$ would map the parallelogram onto itself.