Grade 8 Mathematics Computer-Based Released Items

The spring 2017 grade 8 Mathematics test was administered in two formats: a computer-based version and a paper-based version.

Released items from the **computer-based version** of the test are available online at mcas.pearsonsupport.com/released-items. This document provides information about each released item from the computer-based test, including: reporting category, standard(s) covered, item type, item description, and correct answer (for selected-response and short-answer items only). Information about unreleased operational items is also presented here.

Released items from the **paper-based version** of the test are available on the Department's website at www.doe.mass.edu/mcas/testitems.html.

Grade 8 Mathematics
Spring 2017 Computer-Based Released Operational Items:
Reporting Categories, Standards, Item Descriptions, and Correct Answers

Item No.	Reporting Category	Standard	Item Type*	Description	Correct Answer**
1	*Functions*	8.F.1.01	SA	Complete a given input-output table given that the relationship is not a function.	−3 or −1 or 0 or 5
2	*Expressions and Equations*	8.EE.1.03	CR	Solve a multi-step real-world problem involving single-digit numbers multiplied by powers of 10 and the relationships among them.	
3	*Statistics and Probability*	8.SP.1.04	SR	Interpret a given two-way table and select the relative frequency based on a given real-world context.	B
4	*Geometry*	8.G.2.07	SR	Apply Pythagorean Theorem to determine unknown lengths in a real-world context.	C
5	*The Number System*	8.NS.1.01	SR	Identify the number that is irrational.	D

* 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. Sample responses and scoring guidelines for any constructed-response items will be posted to the Department's website later this year.

Grade 8 Mathematics
Spring 2017 Computer-Based Unreleased Operational Items:
Reporting Categories, Standards, and Item Descriptions

Item No.	Reporting Category	Standard	Item Type*	Description
6	*Expressions and Equations*	8.EE.1.02	SR	Find the value of x in a given equation of the form x squared $= p$.
7	*Statistics and Probability*	8.SP.1.04	SR	Interpret a given two-way table to solve a real-world problem.
8	*Geometry*	8.G.1.03	SA	Determine the x-coordinate of the vertex of the image of a reflected triangle and select descriptions of relationships between the triangle and its
9	*The Number System*	8.NS.1.02	SR	Determine which point on a number line best approximates the location of the square root of a two-digit number.
10	*Functions*	8.F.2.04	SR	Solve problems involving finding and interpreting the rate of change, and constructing a function based on a given real-world context.
11	*The Number System*	8.NS.1.02	SR	Find the range of values for the given square root of a given one-digit whole number.

Item No.	Reporting Category	Standard	Item Type*	Description
12	*Expressions and Equations*	8.EE.3.07	SA	Find the value of the unknown variable in a given equation.
13	*Functions*	8.F.2.05	SR	Determine which graph represents a function that was described qualitatively.
14	*Expressions and Equations*	8.EE.1.04	SR	Solve a real-world problem that involves performing operations on two numbers expressed in scientific notation.
15	*Expressions and Equations*	8.EE.2.06	CR	Determine the equation of a line and explain how to find the slope and y-intercept.
16	*Functions*	8.F.1.03	SR	Determine which equation is linear.
17	*Geometry*	8.G.1.04	SR	Identify which set of two-dimensional figures illustrates a given sequence of transformations.
18	*Statistics and Probability*	8.SP.1.02	SR	Determine which scatterplot best represents a line of best fit in a real-world context.
19	*Functions*	8.F.2.05	SR	Determine which statement best describes a given graph qualitatively.
20	*Expressions and Equations*	8.EE.2.05	SA	Determine and compare two rates of change in a given real-world context.
21	*Functions*	8.F.1.01	SR	Determine which ordered pair would make the relationship shown in a table not a function.
22	*Geometry*	8.G.1.02	SR	Determine the sequence of transformations on a given triangle and select the statement that best describes the congruency between the triangle and its image.
23	*Functions*	8.F.1.02	SR	Determine which equation has the same rate of change as a given function that is shown graphically.
24	*Expressions and Equations*	8.EE.2.05	SR	Determine which graph represents a proportional relationship with a given unit rate.
25	*Geometry*	8.G.3.09	SR	Solve a multi-step real-world problem involving volumes of cylinders and cones.
26	*Statistics and Probability*	8.SP.1.03	SR	Determine which statement describes the slope of a graph in a given real-world context.
27	*Geometry*	8.G.1.05	SR	Determine which angles must be congruent to a given angle when parallel lines are cut by a transversal.
28	*Expressions and Equations*	8.EE.3.08	CR	Determine which graph shows the solutions to a given system of equations, and explain the possible number of solutions the given line can have.
29	*Geometry*	8.G.1.04	SR	Determine the sequence of transformations on a given trapezoid, and select a trapezoid that is similar to the transformed trapezoid.
30	*Geometry*	8.G.1.01	SA	Determine the measure of a given angle after rotation.
31	*Expressions and Equations*	8.EE.2.06	SR	Determine which statement best compares the slopes of three given lines on a coordinate plane.
32	*Statistics and Probability*	8.SP.1.04	SA	Complete a two-way table to solve a real-world problem.
33	*Geometry*	8.G.2.08	SA	Apply Pythagorean Theorem to determine distance between two vertices of a rectangle shown on a coordinate plane.
34	*Functions*	8.F.2.04	CR	Solve multi-step problems involving interpreting a given graph, finding the rate of change, and constructing a function based on a given real-world context.

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