New York State
EDUCATION DEPARTMENT
Knowledge › Skill › Opportunity

New York State Testing Program
Grade 6
Mathematics Test

Released Questions

2021

New York State administered the Mathematics Tests in May 2021 and is now making the questions from Session 1 of these tests available for review and use. Only Session 1 was required in 2021.

New York State Testing Program
Grades 3–8 Mathematics

Released Questions from 2021 Tests

Background

In 2013, New York State (NYS) began administering tests designed to assess student performance in accordance with the instructional shifts and rigor demanded by the new New York State P–12 Learning Standards in Mathematics. To help in this transition to new assessments, the New York State Education Department (NYSED) has been releasing an increasing number of test questions from the tests that were administered to students across the State in the spring. This year, SED is again releasing 2021 NYS Grades 3–8 English Language Arts and Mathematics test materials for review, discussion, and use.

In February 2021, with the ongoing COVID-19 pandemic still forcing restrictions on all educational and learning activities statewide, NYSED submitted two federal waiver requests related to state assessment and accountability requirements. The waiver requests addressed the unique circumstances caused by the pandemic that have resulted in many students receiving some or all of their instruction remotely.

Later that month, the United States Department of Education (USDE) informed states that it would not grant a blanket waiver for state assessments. However, the USDE agreed to uncouple state assessments from the Every Student Succeeds Act (ESSA) accountability requirements so that test results will be used solely as a measure of student learning. Additionally, it was decided that NYSED would administer only Session 1 of the Grades 3–8 ELA and Mathematics Tests for the Spring 2021 administration and that the tests would include previously administered questions.

The decision to use previously administered test questions in this extraordinary year was based on guidance from nationally recognized experts in the assessment field and was recommended in a publication from the Council of Chief State School Officers to state education departments. Reusing test questions provided the benefit of having established scale scores and stable item parameters. Using previously administered test questions also ensured that it will be possible to develop new test forms for 2022 and beyond. Although it was not the driver of the decision, the reuse of previously administered test questions provided an opportunity for cost savings during these unique circumstances where the instructional models used by schools varied throughout the State.

For 2021, the entire Session 1 booklet is being released as this is all that students were required to take. Additionally, NYSED is providing a map that details what learning standards each released question measures, and the correct response to each question. These released materials will help students, families, educators, and the public better understand the tests and NYSED's expectations for students.

Multiple-Choice Questions

Multiple-choice questions are designed to assess the New York State P–12 Learning Standards for Mathematics. Mathematics multiple-choice questions will be used mainly to assess standard algorithms and conceptual standards. Multiple-choice questions incorporate both the grade-level standards and the "Standards for Mathematical Practices." Many questions are framed within the context of real-world applications or require students to complete multiple steps. Likewise, many of these questions are linked to more than one standard, drawing on the simultaneous application of multiple skills and concepts.

New York State P–12 Learning Standards Alignment

The alignment to the New York State P–12 Learning Standards for Mathematics is intended to identify the primary analytic skills necessary to successfully answer each question. The released questions do not represent the full spectrum of the standards assessed on the State tests, nor do they represent the full spectrum of how the standards should be taught and assessed in the classroom. It should not be assumed that a particular standard will be measured by an identical question in future assessments. Specific criteria for writing test questions, as well as additional assessment information, are available at http://www.engageny.org/common-core-assessments.

Name: _____

New York State Testing Program

Mathematics Test
Session 1

Grade 6

v202

Released Questions

Session 1

Grade 6 Mathematics Reference Sheet

CONVERSIONS

1 inch = 2.54 centimeters

1 meter = 39.37 inches

1 mile = 5,280 feet

1 mile = 1,760 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 = 2,000 pounds

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 = 1,000 cubic centimeters

FORMULAS

Triangle	$A = \frac{1}{2}bh$
Right Rectangular Prism	$V = Bh$ or $V = lwh$

Session 1

TIPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

- Read each question carefully and think about the answer before making your choice.

- You have been provided with mathematics tools (a ruler and a protractor) and a reference sheet to use during the test. It is up to you to decide when each tool and the reference sheet will be helpful. You should use mathematics tools and the reference sheet whenever you think they will help you to answer the question.

1 An equation is shown below.

$$12 - 9 + c = 12$$

What value of c makes the equation true?

A 0

B 3

C 9

D 12

2 Kate has a coin collection. She keeps 7 of the coins in a box, which is only 5% of her entire collection. What is the total number of coins in Kate's coin collection?

A 12

B 14

C 120

D 140

3 What is the greatest common factor of 36 and 90 ?

A 6

B 18

C 36

D 180

GO ON

4 The relationship between Robert's age, r, and Julia's age, j, can be represented by the equation shown below.

$$r = j + 3$$

Which table of values represents the relationship between Robert's age and Julia's age?

POSSIBLE AGES

A

Robert's Age, r (years)	Julia's Age, j (years)
9	12
15	18
21	24

POSSIBLE AGES

C

Robert's Age, r (years)	Julia's Age, j (years)
9	6
15	12
21	18

POSSIBLE AGES

B

Robert's Age, r (years)	Julia's Age, j (years)
9	3
15	5
21	7

POSSIBLE AGES

D

Robert's Age, r (years)	Julia's Age, j (years)
9	27
15	45
21	63

GO ON

5 The diagram below shows the dimensions of a rectangular house with a rectangular backyard.

40 ft | House | Backyard | 50 ft

30 ft

80 ft
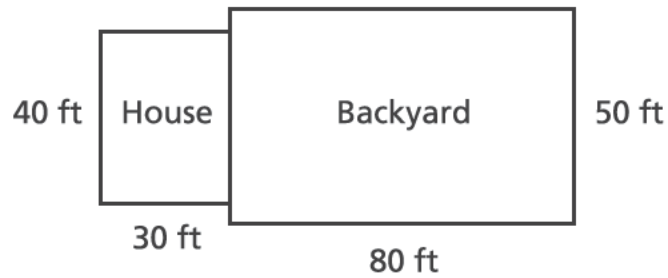
What is the total area, in square feet, of the house and backyard?

A   200

B   400

C   4,000

D   5,200

6 A bagel shop sold 8 plain bagels and 13 rye bagels. What is the ratio of the number of rye bagels to the number of plain bagels sold?

A   8 : 13

B   13 : 8

C   8 : 21

D   21 : 8

GO ON

7 A rectangle is graphed on a coordinate plane. The coordinates for two of the vertices of the rectangle are $(-5, 8)$ and $(-5, -6)$. What is the distance between the two vertices?

A 2 units
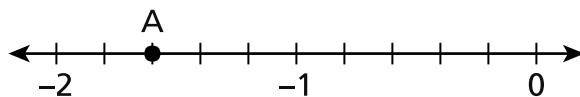
B 4 units

C 10 units

D 14 units

8 What value of m makes the equation below true?

$$m + 7.9 = 39\frac{1}{2}$$

A 5.0

B 31.6

C 32.4

D 47.4

9 Point A is shown on the number line below.

What is the location of point A ?

A -1.3

B -1.35

C -1.6

D -1.75

GO ON

10 A right rectangular prism has a base with an area of $25\frac{1}{2}$ square feet and a volume of 153 cubic feet. What is the height, in feet, of the right rectangular prism?

A   6

B   51

C $127\frac{1}{2}$

D $3,901\frac{1}{2}$

11 All the students in the sixth grade either purchased their lunch or brought their lunch from home on Monday.

- 24% of the students purchased their lunch.

- 190 students brought their lunch from home.
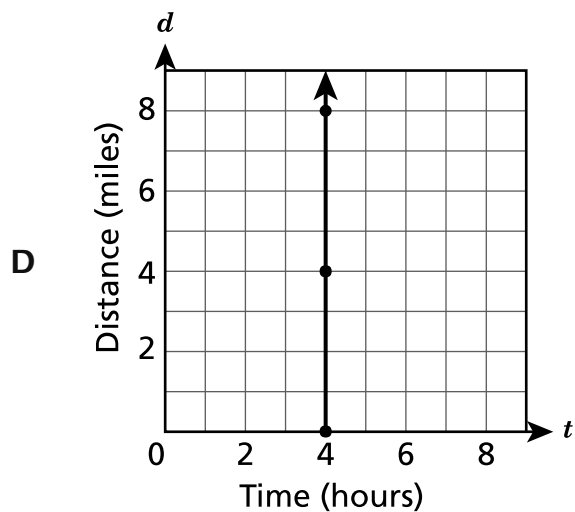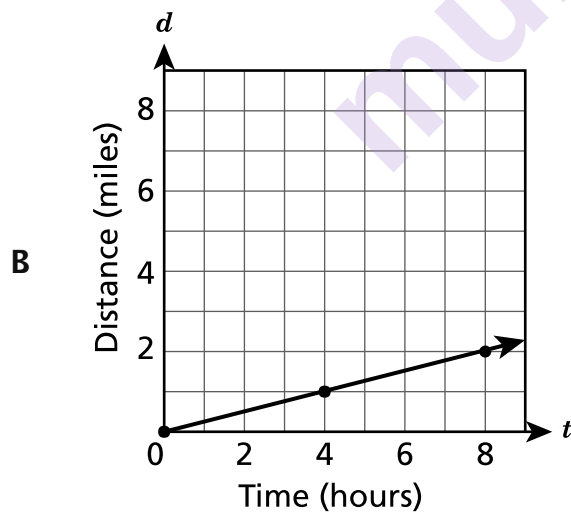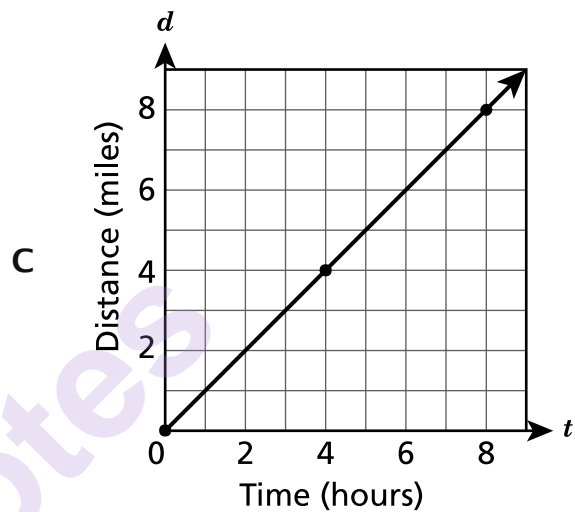
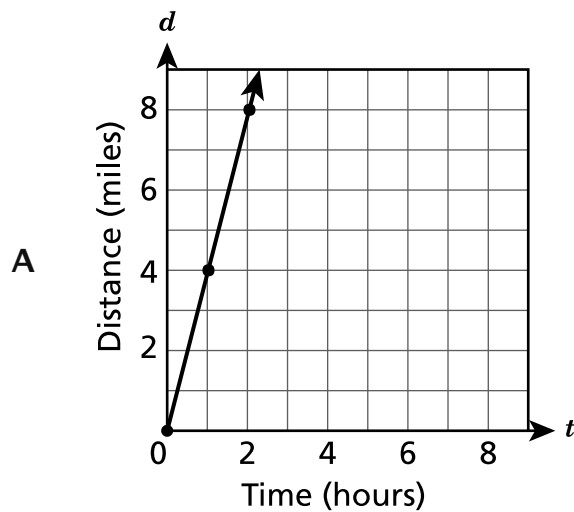How many students are in the sixth grade?

A   76

B   166

C   214

D   250

GO ON

12 Joe walks on a treadmill at a constant rate. The equation below describes the relationship between t, the time he walks in hours, and d, the distance he walks in miles.

$$d = 4t$$

Which graph represents the relationship between the amount of time Joe walks and the distance he walks?

A

B

C

D

13 An expression is shown below.

$$\frac{143 - 35}{3^3}$$

What is the value of the expression?

A 4

B 9

C 12

D 18

14 There are 230 calories in 4 ounces of a type of ice cream. How many calories are in 6 ounces of that ice cream?

A 232

B 236

C 345

D 460

15 What value of x makes the equation $33x = 11$ true?

A $\dfrac{1}{3}$

**B** $\dfrac{3}{11}$

C $\dfrac{11}{3}$

D 3

GO ON

16 A shape is made of 12 right triangles of equal size. Each right triangle has a base of 4 cm and a height of 5 cm. What is the total area, in square centimeters, of the shape?

 A   10

 B   60

 C   120

 D   240

17 According to the National Climatic Data Center, the lowest recorded temperature in the state of New York is $-52°\text{F}$ and the highest is $108°\text{F}$. Based on these values, which number line **best** represents the range of temperatures in the state of New York?

A

B

C

D
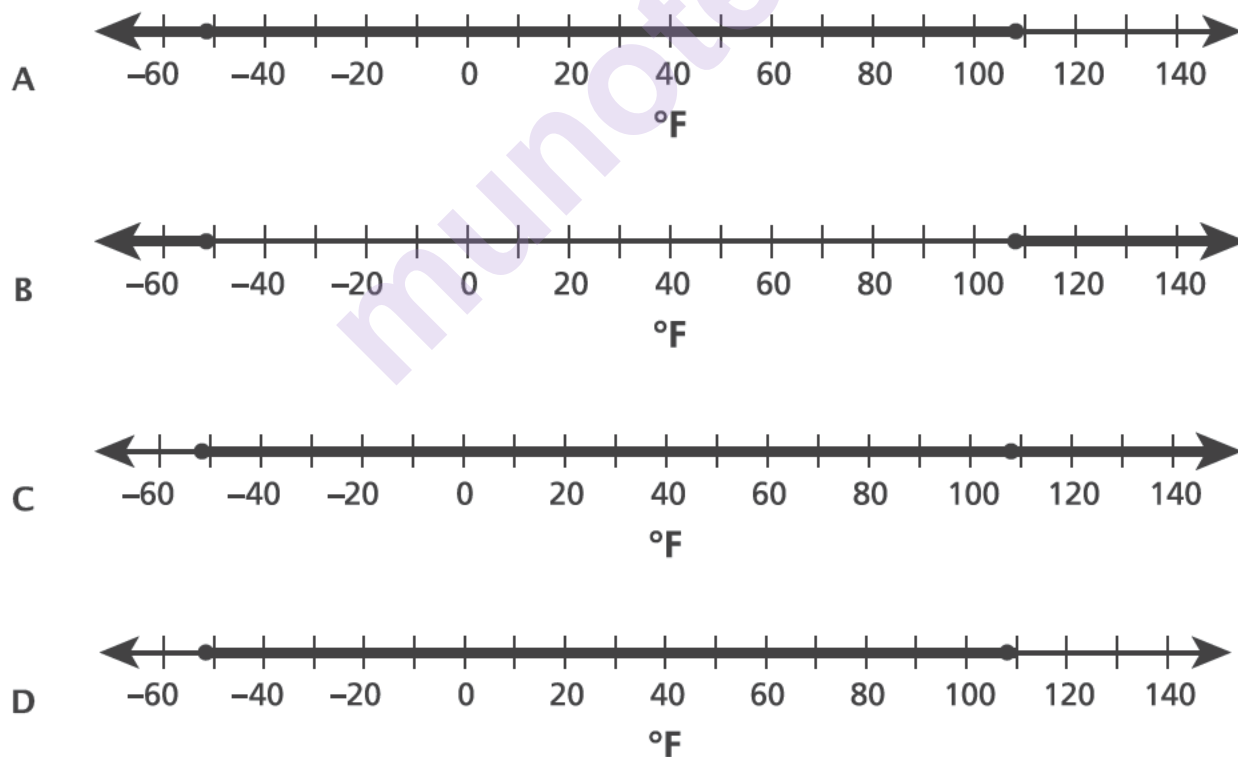
18 Pat bounces a basketball 25 times in 30 seconds. At that rate, approximately how many times will Pat bounce the ball in 150 seconds?

A   120
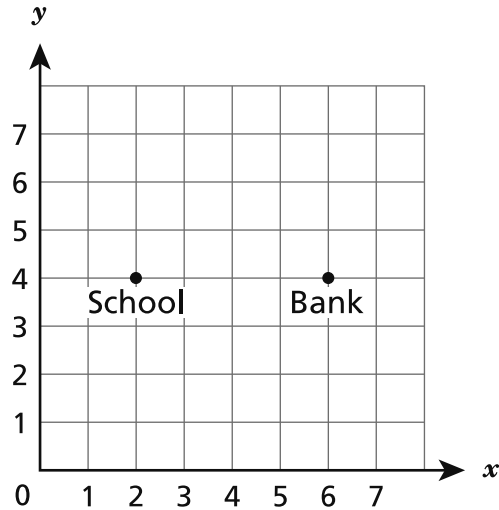
B   125

C   144

D   145

19 Which expression is equivalent to $5(4x + 3) - 2x$?

A $18x + 15$

B $18x + 3$

C $7x + 8$

D $2x + 8$

20 Mark graphed points on the coordinate plane below to represent the locations of his school and a bank.
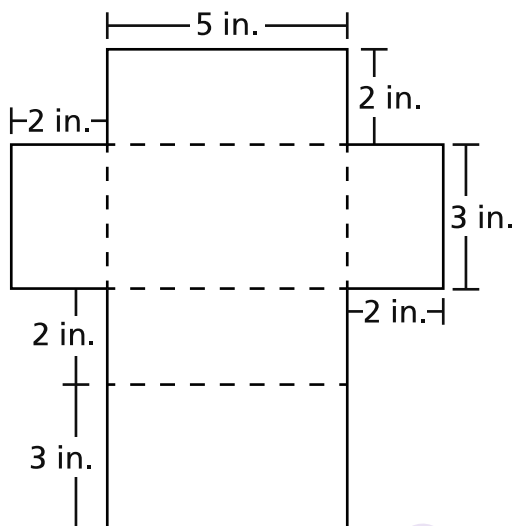

Mark wants to add the location of the library on the coordinate plane. The distance from the library to the school is the same as the distance from the bank to the school. Which ordered pair could be the coordinates of the library?

A $(2, 4)$

B $(2, 8)$

C $(4, 4)$

D $(6, 8)$

21 A student draws the net below to show the dimensions of a container that is shaped like a right rectangular prism.

What is the surface area, in square inches, of the container?

A   19

B   30

C   38

D   62

22 Which two expressions are equivalent?

A $x + x + x$ and x^3

B $14x + 10 - 2x$ and $16x + 10$

C $12x + 16x$ and $4(3x + 4x)$

D $12x^2 + 5x + 10$ and $17x^2 + 10$

GO ON

23 A machine fills boxes at a constant rate. At the end of 35 minutes, it has filled 5 boxes. Which table represents the relationship between the number of minutes the machine fills boxes and the number of boxes it has filled?

FILLING BOXES

A

Time (minutes)	Boxes Filled
7	1
14	2
21	3
28	4

FILLING BOXES

C

Time (minutes)	Boxes Filled
1	7
2	14
3	21
4	28

FILLING BOXES

B

Time (minutes)	Boxes Filled
5	1
10	2
15	3
20	4

FILLING BOXES

D

Time (minutes)	Boxes Filled
1	5
2	10
3	15
4	20

GO ON

24 Which expression represents the perimeter of the figure below?
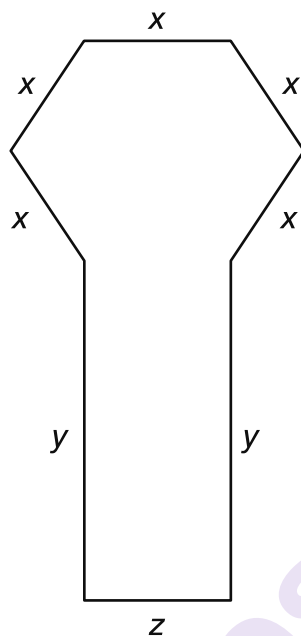
A $5x + 2y$

B $x + y + z$

C $5x + 2y + z$

D $(5 + 2 + 1)(x + y + z)$

Grade 6
Mathematics Test
Session 1
v202

THE STATE EDUCATION DEPARTMENT
THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234
2021 Mathematics Tests Map to the Standards
Grade 6 Released Questions

Question	Type	Key	Points	Standard	Cluster	Subscore	Secondary Standard(s)
Session 1							
1	Multiple Choice	C	1	CCSS.Math.Content.6.EE.B.5	Expressions and Equations	Expressions and Equations	
2	Multiple Choice	D	1	CCSS.Math.Content.6.RP.A.3c	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
3	Multiple Choice	B	1	CCSS.Math.Content.6.NS.B.4	The Number System	The Number System	
4	Multiple Choice	C	1	CCSS.Math.Content.6.EE.C.9	Expressions and Equations	Expressions and Equations	
5	Multiple Choice	D	1	CCSS.Math.Content.6.EE.A.2c	Expressions and Equations	Expressions and Equations	
6	Multiple Choice	B	1	CCSS.Math.Content.6.RP.A.1	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
7	Multiple Choice	D	1	CCSS.Math.Content.6.G.A.3	Geometry		
8	Multiple Choice	B	1	CCSS.Math.Content.6.EE.B.7	Expressions and Equations	Expressions and Equations	
9	Multiple Choice	C	1	CCSS.Math.Content.6.NS.C.6c	The Number System	The Number System	
10	Multiple Choice	A	1	CCSS.Math.Content.6.G.A.2	Geometry		
11	Multiple Choice	D	1	CCSS.Math.Content.6.RP.A.3c	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
12	Multiple Choice	A	1	CCSS.Math.Content.6.EE.C.9	Expressions and Equations	Expressions and Equations	
13	Multiple Choice	A	1	CCSS.Math.Content.6.EE.A.1	Expressions and Equations	Expressions and Equations	
14	Multiple Choice	C	1	CCSS.Math.Content.6.RP.A.3b	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
15	Multiple Choice	A	1	CCSS.Math.Content.6.EE.B.5	Expressions and Equations	Expressions and Equations	
16	Multiple Choice	C	1	CCSS.Math.Content.6.G.A.1	Geometry		
17	Multiple Choice	D	1	CCSS.Math.Content.6.NS.C.6	The Number System	The Number System	
18	Multiple Choice	B	1	CCSS.Math.Content.6.RP.A.3b	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
19	Multiple Choice	A	1	CCSS.Math.Content.6.EE.A.3	Expressions and Equations	Expressions and Equations	
20	Multiple Choice	B	1	CCSS.Math.Content.5.G.A.2	The Number System	The Number System	
21	Multiple Choice	D	1	CCSS.Math.Content.6.G.A.4	Geometry		
22	Multiple Choice	C	1	CCSS.Math.Content.6.EE.A.4	Expressions and Equations	Expressions and Equations	
23	Multiple Choice	A	1	CCSS.Math.Content.6.RP.A.3a	Ratios and Proportional Relationships	Ratios and Proportional Relationships	
24	Multiple Choice	C	1	CCSS.Math.Content.6.EE.B.6	Expressions and Equations	Expressions and Equations	

This item map is intended to identify the primary analytic skills necessary to successfully answer each question. However, some questions measure proficiencies described in multiple standards, including a balanced combination of procedural and conceptual understanding.