



New York State
EDUCATION DEPARTMENT
Knowledge > Skill > Opportunity

**New York State Testing Program
Grade 4
Mathematics Test**

Released Questions

2023

New York State administered the Mathematics Tests in May 2023 and is making approximately 75% of the questions from these tests available for review and use.



New York State Testing Program

Grades 3–8 Mathematics

Released Questions from 2023 Exams

Background

As in past years, SED is releasing large portions of the 2023 NYS Grades 3–8 English Language Arts and Mathematics test materials for review, discussion, and use.

For 2023, included in these released materials are at least 75 percent of the test questions that appeared on the 2023 tests (including all constructed-response questions) that counted toward students' scores. Additionally, SED is also providing a map that details what 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 the New York State Education Department's expectations for students.

Understanding Math Questions

Multiple-Choice Questions

Multiple-choice questions are designed to assess the New York State P–12 Next Generation 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.

One-Credit Constructed-Response Questions

One-credit constructed-response questions require students to complete a task and provide only their final answer. These one-credit questions will often require multiple steps, assessing procedural skills, as well as conceptual understanding and application. While students may show how they arrived at their final answer, only the final answer will be scored.

Two-Credit Constructed-Response Questions

Two-credit constructed-response questions require students to complete tasks and show their work. These two-credit response questions will often require multiple steps, the application of multiple mathematics skills, and real-world applications. Many of the short-response questions will cover conceptual and application standards.

Three-Credit Constructed-Response Questions

Three-credit constructed-response questions ask students to show their work in completing two or more tasks or a more extensive problem. These three-credit response questions allow students to show their understanding of mathematical procedures, conceptual understanding, and application. Three-credit response questions may also assess student reasoning and the ability to critique the arguments of others. The scoring rubric for all constructed-response questions can be found in the grade-level Educator Guides at <http://www.nysed.gov/state-assessment/grades-3-8-ela-and-math-test-manuals>.

New York State P–12 Next Generation Learning Standards Alignment

The alignment(s) to the New York State P–12 Next Generation Learning Standards for Mathematics is/are 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 procedure and conceptual understanding. For example, two-credit and three-credit constructed-response questions require students to show an understanding of mathematical procedures, concepts, and applications.

These Released Questions Do Not Comprise a “Mini Test”

To ensure it is possible to develop future tests, some content must remain secure. This document is *not* intended to be representative of the entire test, to show how operational tests look, or to provide information about how teachers should administer the test; rather, its purpose is to provide an overview of how the test reflects the demands of the New York State P–12 Next Generation Learning Standards.

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.

Name: _____



New York State Testing Program

2023 Mathematics Test Session 1

Grade 4

May 2–4, 2023

RELEASED QUESTIONS

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) to use during the test. It is up to you to decide when each tool will be helpful. You should use mathematics tools whenever you think they will help you to answer the question.

1

Which value is equivalent to $700,000 + 5,000 + 200 + 10 + 9$?

A 705,209

B 705,219

C 750,209

D 750,219

2

Jen runs 8 laps around a track. Carol runs 2 times as many laps as Jen. Which equation can be used to determine the number of laps Carol runs?

A $8 \div 2 = \underline{\quad ? \quad}$

B $8 - 2 = \underline{\quad ? \quad}$

C $8 + 2 = \underline{\quad ? \quad}$

D $8 \times 2 = \underline{\quad ? \quad}$

GO ON

5 What is the product of 432 and 6 ?

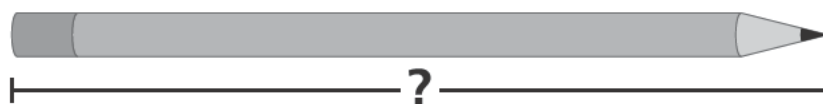
- A** 2,482
- B** 2,492
- C** 2,582
- D** 2,592

6 Which statement about an acute triangle is true?

- A** It has one angle that is exactly 90 degrees.
- B** It has one angle that is greater than 90 degrees.
- C** It has angles that are each less than 90 degrees.
- D** It has angles that are each greater than 90 degrees.

9

A pencil is shown below.



What is the length, in inches, of the pencil?

A $4\frac{1}{4}$

B $4\frac{1}{2}$

C $5\frac{1}{4}$

D $5\frac{1}{2}$

10 Which mixed number is equivalent to $\frac{13}{3}$?

A $3\frac{1}{3}$

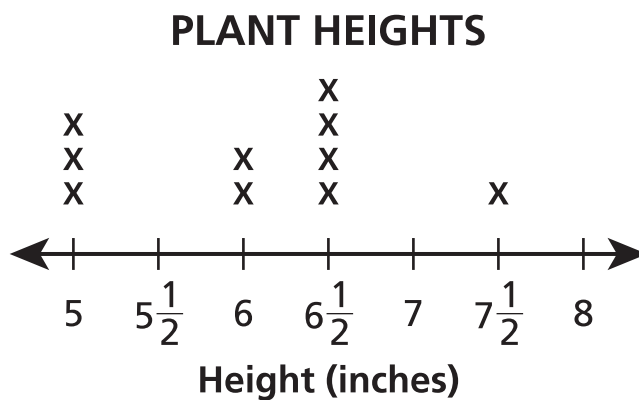
B $3\frac{2}{3}$

C $4\frac{1}{3}$

D $4\frac{2}{3}$

GO ON

The line plot shown below represents the heights of ten different plants.



What is the difference in height, in inches, between the tallest plant and one of the shortest plants?

- A $2\frac{1}{2}$
- B 3
- C 4
- D $6\frac{1}{2}$

17

What is the rule for the number pattern shown below?

64, 32, 16, 8, . . .

- A subtract 8
- B divide by 2
- C divide by 8
- D multiply by 2

19

What is the missing value in the equation shown below?

$$\underline{\quad ? \quad} \times \frac{3}{6} = 15 \times \frac{1}{6}$$

- A 3
- B 5
- C 12
- D 18

GO ON

20 Tiffany has 5 times as many red apples as she has green apples. If she has 20 red apples, how many green apples does she have?

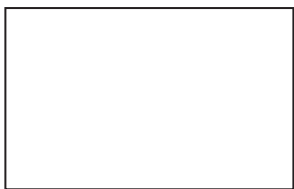
- A** 4
- B** 15
- C** 25
- D** 100

GO ON

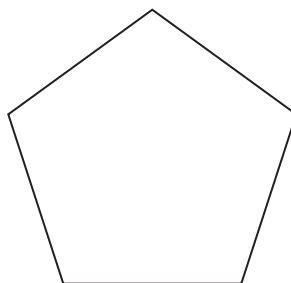
23

Which figure appears to have exactly two lines of symmetry?

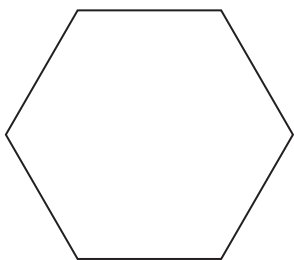
A



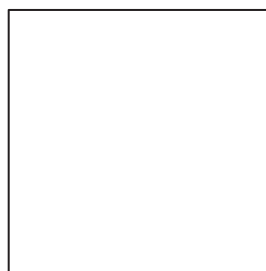
C



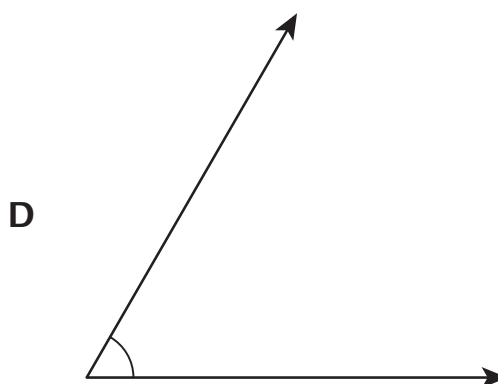
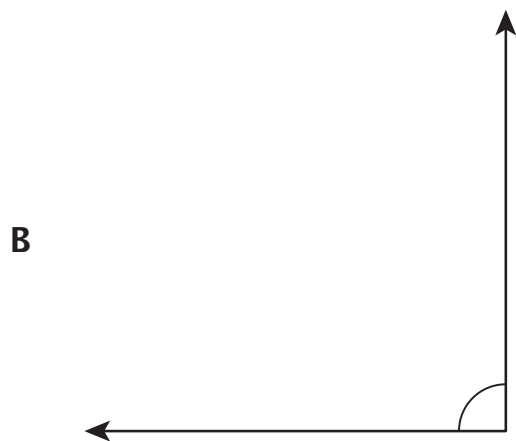
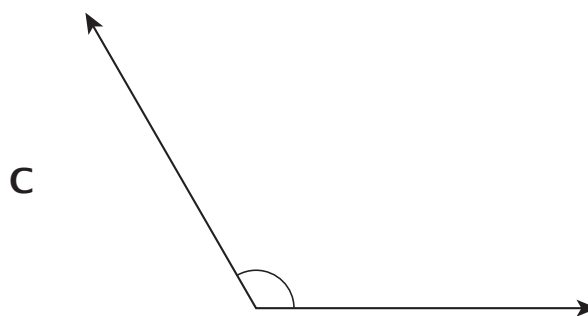
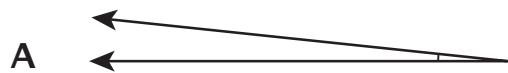
B



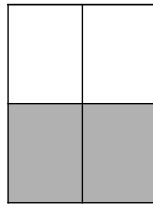
D



25 Which angle has a measure of 60° ?



- 29** The shaded part in the model shown below represents a fraction of the whole model.



Which fraction is equivalent to the value represented by the shaded part in the model?

- A** $\frac{4}{2}$
- B** $\frac{2}{1}$
- C** $\frac{1}{2}$
- D** $\frac{1}{4}$

- 30** What is the value of $7,225 \div 6$?

- A** 1,204
- B** 1,204 r1
- C** 1,205
- D** 1,205 r1

STOP

Grade 4
2023
Mathematics Test
Session 1
May 2–4, 2023

Name: _____



New York State Testing Program

2023 Mathematics Test Session 2

Grade 4

May 2–4, 2023

RELEASED QUESTIONS

Session 2



TIPS FOR TAKING THE TEST

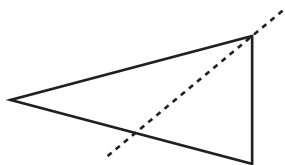
Here are some suggestions to help you do your best:

- Read each question carefully and think about the answer before making your choice or writing your response.
- You have been provided with mathematics tools (a ruler and a protractor) to use during the test. It is up to you to decide when each tool will be helpful. You should use mathematics tools whenever you think they will help you to answer the question.
- Be sure to show your work when asked.

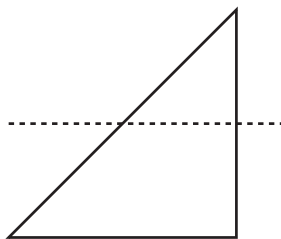
31

In which triangle does the dotted line appear to be a line of symmetry?

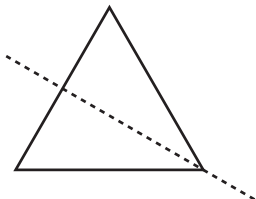
A



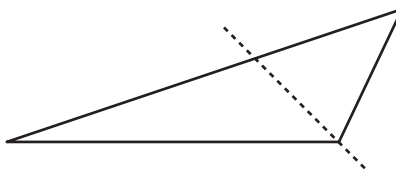
C



B



D



32

Which comparison is true?

A $\frac{1}{4} < \frac{2}{8}$

B $\frac{1}{3} > \frac{3}{6}$

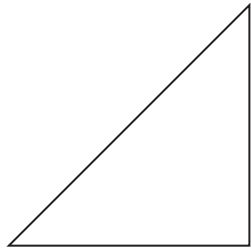
C $\frac{3}{6} = \frac{5}{8}$

D $\frac{2}{3} = \frac{4}{6}$

GO ON

33

Which statement about the figure shown below is true?



- A It appears to have all acute angles.
- B It appears to have all obtuse angles.
- C It appears to have two parallel sides.
- D It appears to have two perpendicular sides.

34

Tim has 3 packs of markers. Each pack has 12 markers. Which equation can be used to find the total number of markers, n , that Tim has?

- A $12 \times n = 3$
- B $3 \times 12 = n$
- C $3 \div n = 12$
- D $12 \div 3 = n$

35

What is the value of 24×11 ?

- A 35
- B 48
- C 264
- D 364

GO ON

36

This question is worth 1 credit.

Rosie combined $1\frac{3}{4}$ gallons of cranberry juice and $\frac{3}{4}$ gallon of apple juice to make fruit juice. How many gallons of fruit juice did Rosie make with the cranberry juice and apple juice?

Answer _____ gallons

GO ON

37

This question is worth 1 credit.

What is the number 88,678 rounded to the nearest thousand?

Answer _____

GO ON

38

This question is worth 1 credit.

How many one-degree angles are in a complete circle?

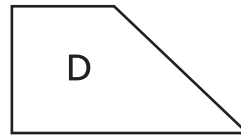
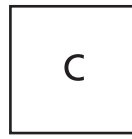
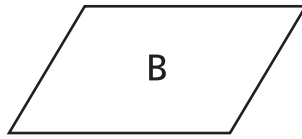
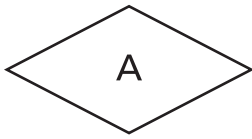
Answer _____ one-degree angles

GO ON

39

This question is worth 2 credits.

Which quadrilaterals shown below appear to be rectangles? Be sure to include what you know about angles and sides in your answer.



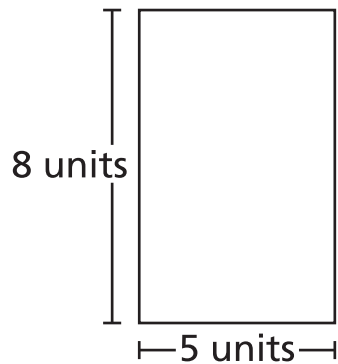
Explain how you know your answer is correct.

GO ON

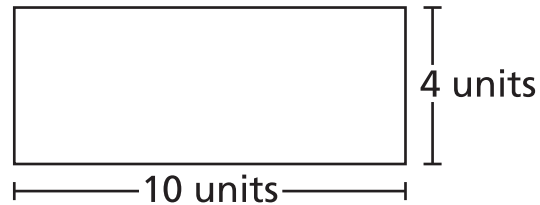
40

This question is worth 2 credits.

A student draws the two rectangles shown below.



Rectangle A



Rectangle B

The student thinks the two rectangles have the same area but different perimeters. Is the student correct? Be sure to include the areas and perimeters of both figures in your answer.

Explain your answer.

GO ON

41**This question is worth 2 credits.**

What fraction can be added to the expression shown below to have a total value of one whole?

$$\frac{2}{12} + \frac{7}{12}$$

Show your work.**Answer** _____**GO ON**

42

This question is worth 2 credits.

Stacey played the same game two times. She scored 36 points in the second game, which is 4 times as many points as she scored in the first game. How many points did Stacey score in the first game?

Explain how you know your answer is correct.

GO ON

43

This question is worth 2 credits.

Ms. Leonard has \$110 to buy bottles of craft paint at the store. Each bottle is \$9. What is the greatest number of bottles of craft paint Ms. Leonard can buy with the amount of money she has?

Show your work.

Answer _____ bottles

GO ON

This question is worth 3 credits.

Mr. Benson is making burgers based on the information below.

- He has 4 pounds of meat.
- He uses $\frac{1}{4}$ pound of meat for each burger.
- He makes 9 burgers.

How many pounds of meat does Mr. Benson have left over after making all the burgers?

Explain how you determined your answer.

STOP

Grade 4
2023
Mathematics Test
Session 2
May 2–4, 2023

THE STATE EDUCATION DEPARTMENT
THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234
2023 Mathematics Tests Map to the Standards
Grade 4 Released Questions

Question	Type	Key	Points	Standard	Cluster	Subscore	Secondary Standard(s)	Multiple Choice Questions	Constructed Response Questions	
								Percentage of Students Who Answered Correctly (P-Value)	Average Points Earned	P-Value (Average Points Earned ÷ Total Possible Points)
Session 1										
1	Multiple Choice	B	1	NGLS.Math.Content.NY-4.NBT.2a	Number and Operations in Base Ten	Number and Operations in Base Ten		0.85		
2	Multiple Choice	D	1	NGLS.Math.Content.NY-4.OA.1	Operations and Algebraic Thinking	Operations and Algebraic Thinking	NGLS.Math.Content.NY-4.OA.2	0.92		
5	Multiple Choice	D	1	NGLS.Math.Content.NY-4.NBT.5	Number and Operations in Base Ten	Number and Operations in Base Ten		0.68		
6	Multiple Choice	C	1	NGLS.Math.Content.NY-4.G.2a	Geometry			0.78		
9	Multiple Choice	A	1	NGLS.Math.Content.NY-3.MD.4	Measurement and Data			0.5		
10	Multiple Choice	C	1	NGLS.Math.Content.NY-4.NF.3c	Number and Operations - Fractions	Number and Operations - Fractions	NGLS.Math.Content.NY-4.NF.3b	0.61		
13	Multiple Choice	A	1	NGLS.Math.Content.NY-4.MD.4	Measurement and Data			0.53		
17	Multiple Choice	B	1	NGLS.Math.Content.NY-4.OA.5	Operations and Algebraic Thinking	Operations and Algebraic Thinking		0.48		
19	Multiple Choice	B	1	NGLS.Math.Content.NY-4.NF.4b	Number and Operations - Fractions	Number and Operations - Fractions		0.7		
20	Multiple Choice	A	1	NGLS.Math.Content.NY-4.OA.2	Operations and Algebraic Thinking	Operations and Algebraic Thinking		0.5		
23	Multiple Choice	A	1	NGLS.Math.Content.NY-4.G.3	Geometry			0.48		
25	Multiple Choice	D	1	NGLS.Math.Content.NY-4.MD.6	Measurement and Data			0.74		
29	Multiple Choice	C	1	NGLS.Math.Content.NY-4.NF.1	Number and Operations - Fractions	Number and Operations - Fractions		0.6		
30	Multiple Choice	B	1	NGLS.Math.Content.NY-4.NBT.6	Number and Operations in Base Ten	Number and Operations in Base Ten		0.68		
Session 2										
31	Multiple Choice	B	1	NGLS.Math.Content.NY-4.G.3	Geometry			0.79		
32	Multiple Choice	D	1	NGLS.Math.Content.NY-4.NF.2	Number and Operations - Fractions	Number and Operations - Fractions		0.64		
33	Multiple Choice	D	1	NGLS.Math.Content.NY-4.G.1	Geometry			0.47		
34	Multiple Choice	B	1	NGLS.Math.Content.NY-4.OA.3a	Operations and Algebraic Thinking	Operations and Algebraic Thinking		0.8		
35	Multiple Choice	C	1	NGLS.Math.Content.NY-4.NBT.5	Number and Operations in Base Ten	Number and Operations in Base Ten		0.83		
36	Constructed Response		1	NGLS.Math.Content.NY-4.NF.3d	Number and Operations - Fractions	Number and Operations - Fractions			0.66	0.66
37	Constructed Response		1	NGLS.Math.Content.NY-4.NBT.3	Number and Operations in Base Ten	Number and Operations in Base Ten			0.62	0.62
38	Constructed Response		1	NGLS.Math.Content.NY-4.MD.5a	Measurement and Data				0.59	0.59
39	Constructed Response		2	NGLS.Math.Content.NY-4.G.2c	Geometry				0.45	0.22
40	Constructed Response		2	NGLS.Math.Content.NY-3.MD.8b	Measurement and Data				0.88	0.44
41	Constructed Response		2	NGLS.Math.Content.NY-4.NF.3b	Number and Operations - Fractions	Number and Operations - Fractions			1.3	0.65
42	Constructed Response		2	NGLS.Math.Content.NY-4.OA.2	Operations and Algebraic Thinking	Operations and Algebraic Thinking			1.2	0.6
43	Constructed Response		2	NGLS.Math.Content.NY-4.NBT.6	Number and Operations in Base Ten	Number and Operations in Base Ten			1.05	0.52
44	Constructed Response		3	NGLS.Math.Content.NY-4.NF.4c	Number and Operations - Fractions	Number and Operations - Fractions			0.98	0.33

*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.