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 approximiately 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

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

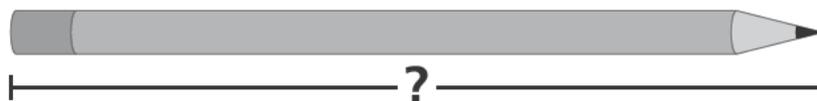D $8 \times 2 = \underline{\quad ? \quad}$

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.

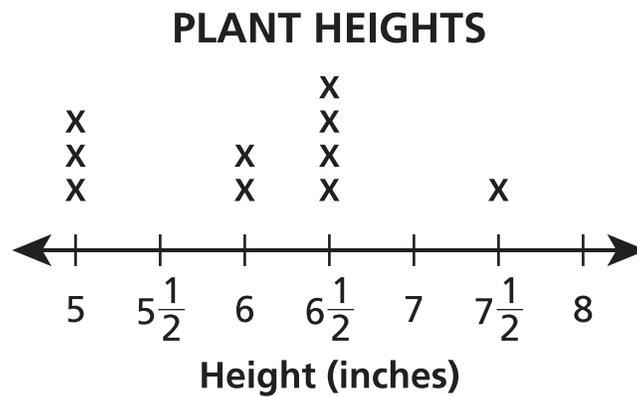**D**   It has angles that are each greater than 90 degrees.

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 $4\frac{2}{3}$

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

PLANT HEIGHTS

```
                         X
      X                  X
      X            X     X
      X            X     X           X
   ◄──┼────┼────┼────┼────┼────┼────┼──►
      5    5 1/2  6   6 1/2  7   7 1/2  8
```

Height (inches)

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

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?
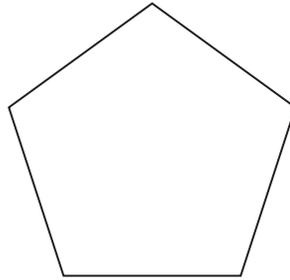
A 4

B 15

C 25

D 100

GO ON

Session 1

23 Which figure appears to have exactly two lines of symmetry?

A

C

B
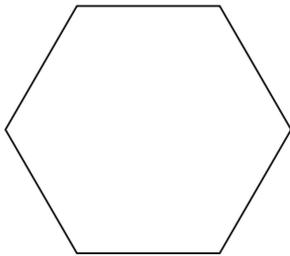
D
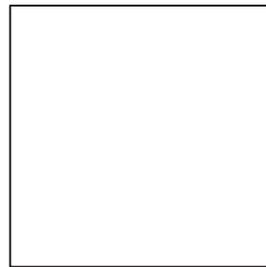
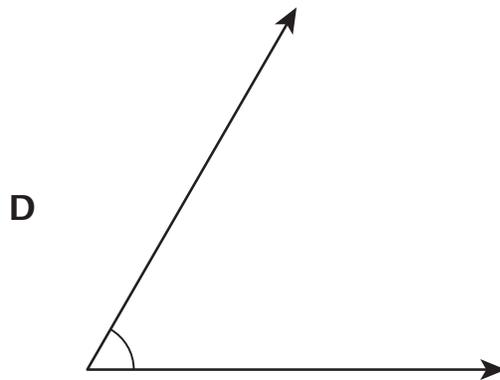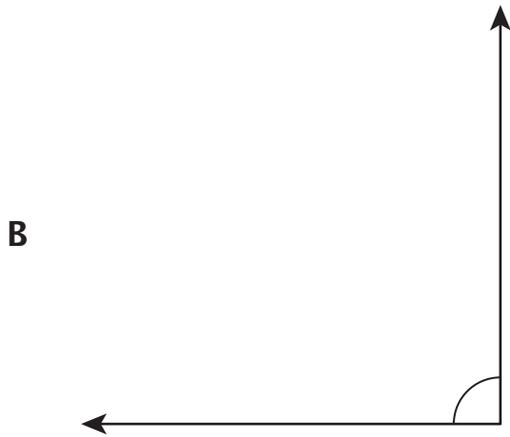**25** Which angle has a measure of $60°$?

A

C

B

D

Session 1

GO ON
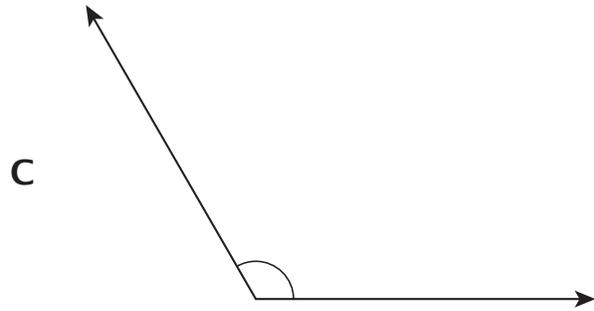
29 The shaded part in the model shown below represents a fraction of the whole model.
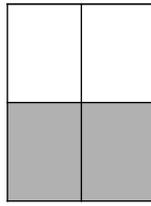
Which fraction is equivalent to the value represented by the shaded part in the model?

A $\dfrac{4}{2}$

B $\dfrac{2}{1}$

C $\dfrac{1}{2}$

D $\dfrac{1}{4}$

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.
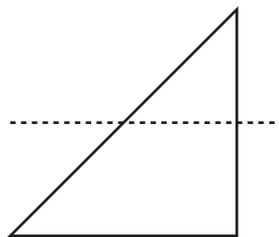
- Be sure to show your work when asked.

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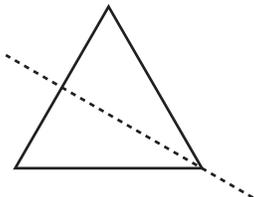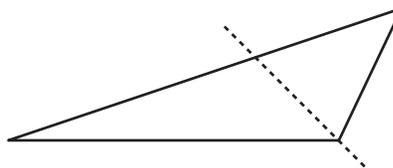
A
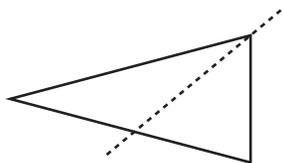
C

B

D

32 Which comparison is true?

A $\quad \dfrac{1}{4} < \dfrac{2}{8}$

B $\quad \dfrac{1}{3} > \dfrac{3}{6}$

C $\quad \dfrac{3}{6} = \dfrac{5}{8}$

D $\quad \dfrac{2}{3} = \dfrac{4}{6}$

GO ON

33 Which statement about the figure shown below is true?
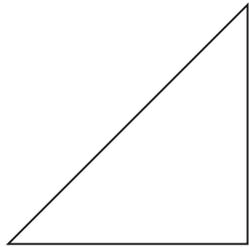
A It appears to have all acute angles.

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

37 This question is worth 1 credit.

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

Answer _____

38 This question is worth 1 credit.

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

Answer _____ one-degree angles

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.
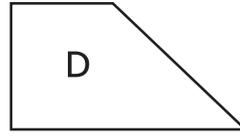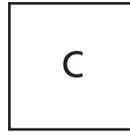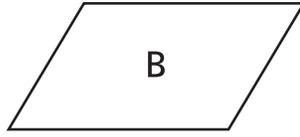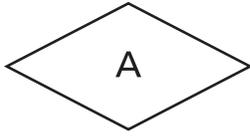
Explain how you know your answer is correct.

_____

_____

_____

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

A student draws the two rectangles shown below.

8 units

5 units

Rectangle A

4 units

10 units
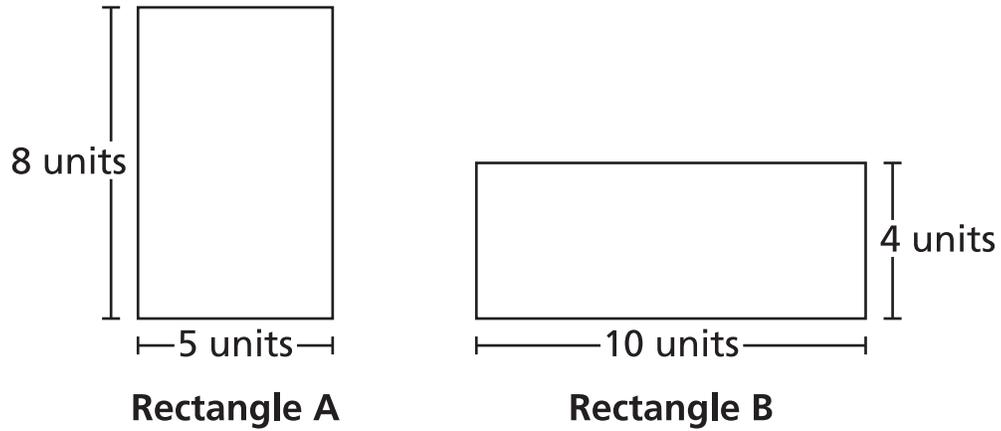
Rectangle B

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 _____

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.

_____

_____

_____

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

44

This question is worth 3 credits.

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

- He has 4 pounds of meat.

- He uses $\dfrac{1}{4}$ 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	Secondary Standard(s)	Multiple Choice Questions Percentage of Students Who Answered Correctly (P-Value)	Constructed Response Questions 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		0.8446		
2	Multiple Choice	D	1	NGLS.Math.Content.NY-4.OA.1	Operations and Algebraic Thinking	NGLS.Math.Content.NY-4.OA.2	0.8901		
5	Multiple Choice	D	1	NGLS.Math.Content.NY-4.NBT.5	Number and Operations in Base Ten		0.5227		
6	Multiple Choice	C	1	NGLS.Math.Content.NY-4.G.2a	Geometry		0.7673		
9	Multiple Choice	A	1	NGLS.Math.Content.NY-3.MD.4	Measurement and Data		0.4896		
10	Multiple Choice	C	1	NGLS.Math.Content.NY-4.NF.3c	Number and Operations - Fractions	NGLS.Math.Content.NY-4.NF.3b	0.5912		
13	Multiple Choice	A	1	NGLS.Math.Content.NY-4.MD.4	Measurement and Data		0.5230		
17	Multiple Choice	B	1	NGLS.Math.Content.NY-4.OA.5	Operations and Algebraic Thinking		0.4852		
19	Multiple Choice	B	1	NGLS.Math.Content.NY-4.NF.4b	Number and Operations - Fractions		0.7625		
20	Multiple Choice	A	1	NGLS.Math.Content.NY-4.OA.2	Operations and Algebraic Thinking		0.4757		
23	Multiple Choice	A	1	NGLS.Math.Content.NY-4.G.3	Geometry		0.4949		
25	Multiple Choice	D	1	NGLS.Math.Content.NY-4.MD.6	Measurement and Data		0.7627		
29	Multiple Choice	C	1	NGLS.Math.Content.NY-4.NF.1	Number and Operations - Fractions		0.6225		
30	Multiple Choice	B	1	NGLS.Math.Content.NY-4.NBT.6	Number and Operations in Base Ten		0.6966		
Session 2								
31	Multiple Choice	B	1	NGLS.Math.Content.NY-4.G.3	Geometry		0.7753		
32	Multiple Choice	D	1	NGLS.Math.Content.NY-4.NF.2	Number and Operations - Fractions		0.6466		
33	Multiple Choice	D	1	NGLS.Math.Content.NY-4.G.1	Geometry		0.3905		
34	Multiple Choice	B	1	NGLS.Math.Content.NY-4.OA.3a	Operations and Algebraic Thinking		0.8271		
35	Multiple Choice	C	1	NGLS.Math.Content.NY-4.NBT.5	Number and Operations in Base Ten		0.8158		
36	Constructed Response		1	NGLS.Math.Content.NY-4.NF.3d	Number and Operations - Fractions			0.7396	0.7396
37	Constructed Response		1	NGLS.Math.Content.NY-4.NBT.3	Number and Operations in Base Ten			0.6004	0.6004
38	Constructed Response		1	NGLS.Math.Content.NY-4.MD.5a	Measurement and Data			0.6389	0.6389
39	Constructed Response		2	NGLS.Math.Content.NY-4.G.2c	Geometry			0.2392	0.1196
40	Constructed Response		2	NGLS.Math.Content.NY-3.MD.8b	Measurement and Data			0.4233	0.2117
41	Constructed Response		2	NGLS.Math.Content.NY-4.NF.3b	Number and Operations - Fractions			0.6407	0.3204
42	Constructed Response		2	NGLS.Math.Content.NY-4.OA.2	Operations and Algebraic Thinking			0.6132	0.3066
43	Constructed Response		2	NGLS.Math.Content.NY-4.NBT.6	Number and Operations in Base Ten			0.5910	0.2955
44	Constructed Response		3	NGLS.Math.Content.NY-4.NF.4c	Number and Operations - Fractions			0.2975	0.0992

*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.