



New York State  
**EDUCATION DEPARTMENT**  
Knowledge > Skill > Opportunity

**New York State Testing Program  
Grade 5  
Mathematics Test**

**Released Questions**

**2022**

New York State administered the Mathematics Tests in May 2022 and is now 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 2022 Exams**

### ***Background***

As in past years, SED is releasing large portions of the 2022 NYS Grades 3–8 English Language Arts and Mathematics test materials for review, discussion, and use.

For 2022, included in these released materials are at least 75 percent of the test questions that appeared on the 2022 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 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.

#### **Short-Response Questions**

Short-response questions require students to complete tasks and show their work. Like multiple-choice questions, short-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.

#### **Extended-Response Questions**

Extended-response questions ask students to show their work in completing two or more tasks or a more extensive problem. Extended-response questions allow students to show their understanding of mathematical procedures, conceptual understanding, and application. Extended-response questions may also assess student reasoning and the ability to critique the arguments of others. The scoring rubric for short and extended 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 Learning Standards Alignment**

The alignment(s) to the New York State P–12 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-point and three-point 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 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*

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**2022**

**Mathematics Test**

**Session 1**

**Grade 5**

**April 26–28, 2022**

**RELEASED QUESTIONS**

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# Grade 5 Mathematics Reference Sheet

## **CONVERSIONS**

1 mile = 5,280 feet

1 mile = 1,760 yards

1 pound = 16 ounces

1 ton = 2,000 pounds

1 cup = 8 fluid ounces

1 pint = 2 cups

1 quart = 2 pints

1 gallon = 4 quarts

1 liter = 1,000 cubic centimeters

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## **FORMULAS**

**Right Rectangular Prism**

$$V = Bh \text{ or } V = lwh$$

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# 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** Jill has 4 one-dollar bills, 3 quarters, 4 dimes, and 3 pennies. Mark has 3 one-dollar bills, 4 dimes, and 2 pennies. What is the difference between the amount of money Jill has and the amount of money Mark has?

- A \$1.01
- B \$1.76
- C \$7.85
- D \$8.60

**2** What is the value of  $6\frac{3}{5} + 3\frac{2}{3}$ ?

- A  $2\frac{14}{15}$
- B  $9\frac{4}{15}$
- C  $9\frac{5}{8}$
- D  $10\frac{4}{15}$

**3** Which two-dimensional figure is always a regular quadrilateral?

- A rhombus
- B polygon
- C square
- D trapezoid

**GO ON**

**6**

Janelle makes fruit punch by mixing the ingredients listed below.

- 5 pints of orange juice
- 6 cups of grape juice
- 8 cups of apple juice

How many quarts of fruit punch does Janelle make?

- A** 3
- B** 6
- C** 24
- D** 96

**7**

Shara is building a birdhouse. She cuts a 6-foot-long board into sections that are each

$\frac{1}{3}$  foot long. How many sections of the board will Shara have when she is finished cutting?

- A** 2
- B**  $6\frac{1}{3}$
- C**  $10\frac{1}{3}$
- D** 18

**GO ON**

**13** Which value makes the comparison below true?

$$\underline{\quad ? \quad} < 0.6$$

- A 0.6
- B 0.7
- C 0.59
- D 0.64

**14** A student completes his homework in 1 hour and 34 minutes. How long, in minutes, does it take the student to complete his homework?

- A 26
- B 60
- C 94
- D 134

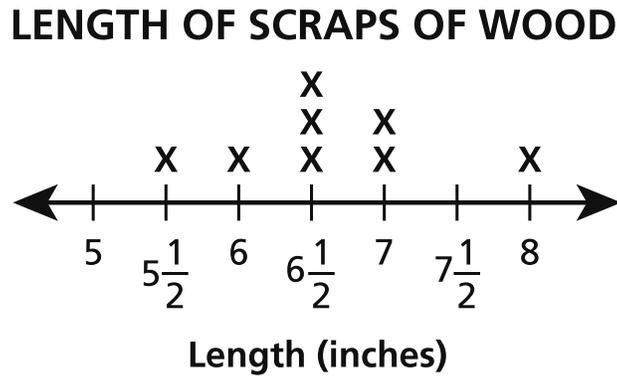
**15** What is the value of the expression shown below?

$$2,158 \div 26$$

- A 80
- B 83
- C 86
- D 89

18

Ms. Torres has a box of scraps of wood. She measures the length of each scrap of wood to the nearest half inch. The results are represented on the line plot below.



What is the approximate length, in inches, of the scraps of wood when they are placed end to end?

- A  $19\frac{1}{2}$
- B 33
- C  $45\frac{1}{2}$
- D 53

19

Which expression is equivalent to  $65 \times 0.15$ ?

- A  $65 \times 0.1 + 0.05$
- B  $65 \times 0.05 + 0.1$
- C  $(65 \times 0.1) + (65 \times 0.5)$
- D  $(65 \times 0.1) + (65 \times 0.05)$

**GO ON**

- 20** What is the value of the expression shown below?

$$14\frac{1}{3} - 6\frac{5}{8}$$

- A**  $7\frac{1}{24}$   
**B**  $7\frac{17}{24}$   
**C**  $8\frac{7}{24}$   
**D**  $8\frac{23}{24}$

- 21** Trey and his 4 friends equally share a 12-ounce jar of applesauce. How much applesauce, in ounces, does each person receive?

- A**  $\frac{5}{12}$   
**B**  $2\frac{2}{5}$   
**C** 17  
**D** 60

**GO ON**

22 What is the value of  $\frac{3}{10} + \frac{27}{100}$  ?

A  $\frac{30}{10}$

B  $\frac{30}{100}$

C  $\frac{57}{10}$

D  $\frac{57}{100}$

23 Which statement about the quotient of  $425.378 \div 10^3$  is true?

A The decimal point is located to the left of the 4.

B The decimal point is located to the right of the 8.

C The decimal point is located between the 3 and the 7.

D The decimal point is located between the 4 and the 2.

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**Grade 5**  
**2022**  
**Mathematics Test**  
**Session 1**  
April 26–28, 2022

Name: \_\_\_\_\_



# ***New York State Testing Program***

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## **2022 Mathematics Test Session 2**

# **Grade 5**

**April 26–28, 2022**

**RELEASED QUESTIONS**

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# Grade 5 Mathematics Reference Sheet

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## **FORMULAS**

**Right Rectangular Prism**

$$V = Bh \text{ or } V = lwh$$

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# 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) 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.
- Be sure to show your work when asked.

**31** What is the missing value in the equation shown below?

$$\frac{4}{10} + \frac{?}{100} = \frac{7}{10}$$

- A** 1
- B** 3
- C** 10
- D** 30

**32** Which expression is equivalent to  $\frac{2}{3} \times 7$ ?

- A**  $2 \times 7 \div 3$
- B**  $2 \times 3 \div 7$
- C**  $7 \times 3 \div 2$
- D**  $7 \div 2 \times 3$

**33** Which two-dimensional figure always has 4 equal sides and 4 right angles?

- A** parallelogram
- B** rectangle
- C** rhombus
- D** square

**GO ON**

**34** Which expression has a value less than 1 ?

**A**  $\frac{3}{4} \times \frac{4}{3}$

**B**  $\frac{3}{4} \times \frac{6}{3}$

**C**  $\frac{3}{4} \times \frac{4}{4}$

**D**  $\frac{3}{4} \times \frac{8}{4}$

**35** Which fraction has the same value as 0.28?

**A**  $\frac{28}{1}$

**B**  $\frac{28}{10}$

**C**  $\frac{28}{100}$

**D**  $\frac{28}{1,000}$

**36** Mr. Davis buys 4 pizzas for a family dinner. He cuts each pizza into sixths. How many pieces of pizza does Mr. Davis have for the family dinner?

**A** 6

**B** 10

**C** 20

**D** 24

**37** Nicolas drinks  $\frac{2}{3}$  liter of water in the morning and  $\frac{1}{2}$  liter of water at lunch. During basketball practice, he drinks another  $\frac{2}{3}$  liter of water. What is the total amount of water, in liters, that Nicolas drinks?

- A  $\frac{3}{5}$
- B  $\frac{5}{8}$
- C  $1\frac{1}{6}$
- D  $1\frac{5}{6}$

**38** What is six hundred eighty and fourteen thousandths written in standard form?

- A 608.014
- B 608.14
- C 680.014
- D 680.14

**GO ON**

39

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

*Show your work.*

*Answer* \_\_\_\_\_ teaspoons

**GO ON**

40

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

*Show your work.*

*Answer* \_\_\_\_\_ unit(s)

**GO ON**

41

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

*Explain your answer.*

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**GO ON**

42

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each
- pen: \$1.79 each

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

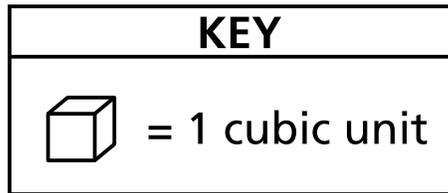
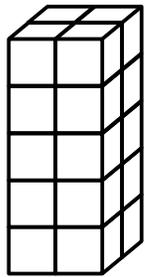
*Show your work.*

*Answer* \$ \_\_\_\_\_

**GO ON**

43

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.



What is the total volume, in cubic units, of the 4 towers Colin built?

*Show your work.*

*Answer* \_\_\_\_\_ cubic units

**GO ON**

44

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

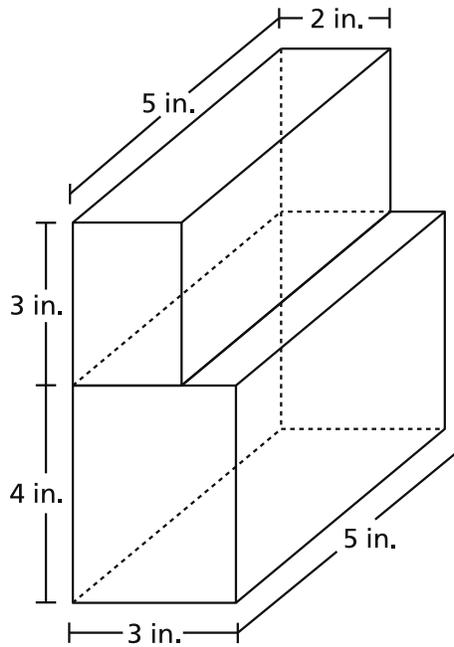
*Show your work.*

*Answer* \_\_\_\_\_ miles

**GO ON**

45

A diagram of two rectangular prisms is shown below.



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

**Answer**

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If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

**Show your work.**

**Answer** \_\_\_\_\_ cubic inches

**STOP**

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**Grade 5**  
**2022**  
**Mathematics Test**  
**Session 2**  
April 26–28, 2022

**THE STATE EDUCATION DEPARTMENT**  
**THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234**  
**2022 Mathematics Tests Map to the Standards**  
**Grade 5 Released Questions**

Question	Type	Key	Points	Standard	Cluster	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)
<b>Session 1</b>								
1	Multiple Choice	B	1	CCSS.Math.Content.4.MD.A.2	Measurement and Data	0.73		
2	Multiple Choice	D	1	CCSS.Math.Content.5.NF.A.1	Number and Operations - Fractions	0.59		
3	Multiple Choice	C	1	CCSS.Math.Content.5.G.B.4	Geometry	0.62		
6	Multiple Choice	B	1	CCSS.Math.Content.5.MD.A.1	Measurement and Data	0.47		
7	Multiple Choice	D	1	CCSS.Math.Content.5.NF.B.7b	Number and Operations - Fractions	0.5		
13	Multiple Choice	C	1	CCSS.Math.Content.4.NF.C.7	Number and Operations in Base Ten	0.62		
14	Multiple Choice	C	1	CCSS.Math.Content.4.MD.A.1	Measurement and Data	0.82		
15	Multiple Choice	B	1	CCSS.Math.Content.5.NBT.B.6	Number and Operations in Base Ten	0.68		
18	Multiple Choice	D	1	CCSS.Math.Content.5.MD.B.2	Measurement and Data	0.38		
19	Multiple Choice	D	1	CCSS.Math.Content.5.NBT.B.7	Number and Operations in Base Ten	0.43		
20	Multiple Choice	B	1	CCSS.Math.Content.5.NF.A.1	Number and Operations - Fractions	0.43		
21	Multiple Choice	B	1	CCSS.Math.Content.5.NF.B.3	Number and Operations - Fractions	0.56		
22	Multiple Choice	D	1	CCSS.Math.Content.4.NF.C.5	Number and Operations - Fractions	0.57		
23	Multiple Choice	A	1	CCSS.Math.Content.5.NBT.A.2	Number and Operations in Base Ten	0.45		

Session 2

31	Multiple Choice	D	1	CCSS.Math.Content.4.NF.C.5	Number and Operations - Fractions	0.36		
32	Multiple Choice	A	1	CCSS.Math.Content.5.NF.B.4a	Number and Operations - Fractions	0.53		
33	Multiple Choice	D	1	CCSS.Math.Content.5.G.B.3	Geometry	0.79		
34	Multiple Choice	C	1	CCSS.Math.Content.5.NF.B.5a	Number and Operations - Fractions	0.65		
35	Multiple Choice	C	1	CCSS.Math.Content.4.NF.C.6	Number and Operations in Base Ten	0.69		
36	Multiple Choice	D	1	CCSS.Math.Content.5.NF.B.7b	Number and Operations - Fractions	0.89		
37	Multiple Choice	D	1	CCSS.Math.Content.5.NF.A.2	Number and Operations - Fractions	0.61		
38	Multiple Choice	C	1	CCSS.Math.Content.5.NBT.A.3a	Number and Operations in Base Ten	0.78		
39	Constructed Response		2	CCSS.Math.Content.5.MD.A.1	Measurement and Data		0.67	0.33
40	Constructed Response		2	CCSS.Math.Content.5.NF.B.7a	Number and Operations - Fractions		0.49	0.24
41	Constructed Response		2	CCSS.Math.Content.5.NBT.A.1	Number and Operations in Base Ten		0.6	0.3
42	Constructed Response		2	CCSS.Math.Content.5.NBT.B.7	Number and Operations in Base Ten		1.02	0.51
43	Constructed Response		2	CCSS.Math.Content.5.MD.C.4	Measurement and Data		1.1	0.55
44	Constructed Response		2	CCSS.Math.Content.5.NF.A.2	Number and Operations - Fractions		0.86	0.43
45	Constructed Response		3	CCSS.Math.Content.5.MD.C.5c	Measurement and Data		1.33	0.44

\*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.