New York State
EDUCATION DEPARTMENT
Knowledge › Skill › Opportunity

New York State Testing Program
Grade 6
Mathematics Test

Released Questions

2024

New York State administered the Mathematics Tests in May 2024 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 2024 Exams

Background

As in past years, SED is releasing large portions of the 2024 NYS Grades 3–8 English Language Arts and Mathematics test materials for review, discussion, and use.

For 2024, included in these released materials are at least 75 percent of the test questions that appeared on the 2024 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 https://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

Mathematics Test
Session 1

Grade 6

Spring 2024

RELEASED QUESTIONS

Session 1

TIPS FOR TAKING THE TEST

Here are some ideas to help you do your best:

- Read each question carefully. Take your time.
- You have a ruler, a protractor, and a reference sheet that you can use on the test if they help you answer the question.

2 Which expression represents 5 more than the product of 2 and y?

A $2 + y + 5$

B $2y + 5$

C $5 + \frac{2}{y}$

D $5 + \frac{y}{2}$

GO ON

3 Which value of b makes the inequality $3b > 12$ true?

A 2

B 3

C 4

D 5

4 A coordinate plane can be used to show the distance, in units, between two locations. The location of Jack's house and a store are listed below.

- Jack's house is located at $(-7, -8)$.
- The store is located at $(-7, 4)$.

What is the distance, in units, between Jack's house and the store?

A 4

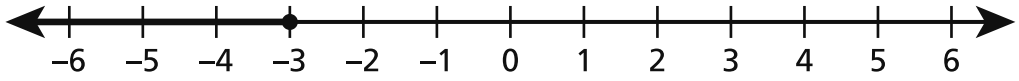
B 8

C 12

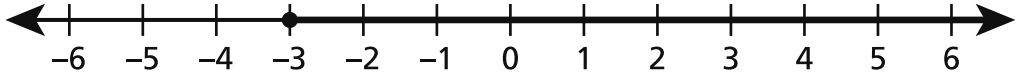
D 14

11 Which number line represents $x \geq -3$?

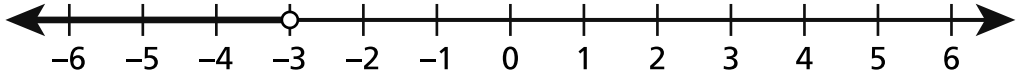
A



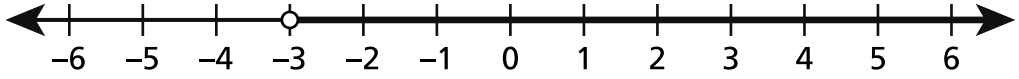
B



C



D



14 What is the value of the expression $8^2 \div 4 \times 2^3$?

A 16

B 24

C 96

D 128

15 Ben purchases $1\frac{1}{4}$ pounds of nuts and puts them into bags. Each bag holds $\frac{1}{8}$ pound of nuts. He uses all the nuts to fill each bag completely. How many bags does Ben fill with nuts?

A $\frac{5}{32}$

B $1\frac{1}{8}$

C 2

D 10

18 Which expression represents the opposite of the number $-2\frac{1}{2}$?

A $-\left(2\frac{1}{2}\right)$

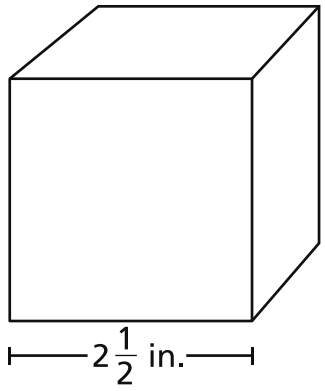
B $-\left(-2\frac{1}{2}\right)$

C $-2\left(\frac{1}{2}\right)$

D $2\left(-\frac{1}{2}\right)$

GO ON

20 A diagram of a cube is shown below.



What is the volume, in cubic inches, of the cube?

A $1\frac{7}{8}$

B $7\frac{1}{2}$

C $15\frac{5}{8}$

D $20\frac{5}{6}$

22 Tammy and Jacob collect stamps. Tammy has s stamps. Jacob has 4 fewer than 3 times the number of stamps Tammy has. Which expression can be used to represent the number of stamps Jacob has?

A $3 - 4s$

B $3s - 4$

C $4 - 3s$

D $4s - 3$

23 A container holds 6 gallons of liquid. How many pints of liquid does the container hold?

A 6

B 8

C 24

D 48

GO ON

26 What ordered pair represents the location of a point that is the reflection of the point $(-4, 6)$ over the x-axis?

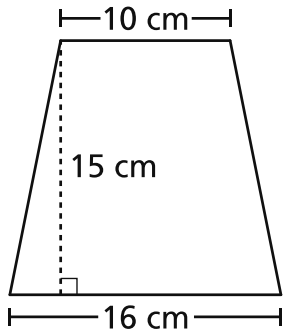
A $(4, 6)$

B $(-4, -6)$

C $(6, -4)$

D $(-6, 4)$

28 An isosceles trapezoid is shown below.



What is the area, in square centimeters, of the isosceles trapezoid?

A 120

B 150

C 195

D 240

29 An inequality is shown below.

$$-\frac{9}{20} > -\frac{21}{24}$$

Which statement about the locations of the numbers on a number line is true?

A $-\frac{9}{20}$ is to the left of $-\frac{21}{24}$ and to the right of 0 on a number line.

B $-\frac{9}{20}$ is to the right of $-\frac{21}{24}$ and to the left of 0 on a number line.

C $-\frac{9}{20}$ is to the left of $-\frac{21}{24}$ and to the left of 0 on a number line.

D $-\frac{9}{20}$ is to the right of $-\frac{21}{24}$ and to the right of 0 on a number line.

Grade 6
Mathematics Test
Session 1
Spring 2024

Name: _____

New York State Testing Program

Mathematics Test
Session 2

Grade 6

Spring 2024

RELEASED QUESTIONS

Session 2

TIPS FOR TAKING THE TEST

Here are some ideas to help you do your best:

- Read each question carefully. Take your time.
- You have a ruler, a protractor, a reference sheet, and a calculator that you can use on the test if they help you answer the question.
- Be sure to show your work when asked.
- Be sure to explain your answer when asked.

31 There are 104 calories in an 8-ounce serving of soda. How many calories are in 1 ounce of soda?

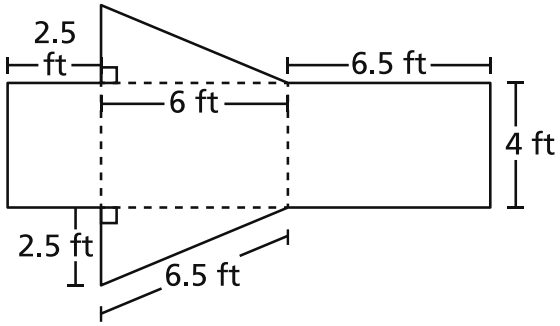
A 13

B 26

C 52

D 96

32 Jose builds a skateboard ramp in the shape of a right triangular prism. The net below shows the dimensions of each part of the ramp.



What is the surface area, in square feet, of the ramp?

A 90

B 75

C 51

D 44

GO ON

33 The number 4 is 16% of what number?

A 12

B 20

C 25

D 64

34 A machine produces chocolates at a constant rate. In 42 minutes, the machine produces 7 pounds of chocolates. How long, in minutes, will it take the machine to produce 9 pounds of chocolates?

A 6

B 15

C 54

D 63

35 The dimensions of a cereal box in the shape of a right rectangular prism are shown below.

$8\frac{1}{10}$ inches by $4\frac{4}{5}$ inches by $12\frac{1}{2}$ inches

What is the volume, in cubic inches, of the cereal box?

A 24

B $25\frac{2}{5}$

C $384\frac{1}{25}$

D 486

36 A tutoring company charges $\$25.00$ per hour to tutor a student. How many hours of tutoring would cost $\$62.50$?

A $2\frac{1}{2}$

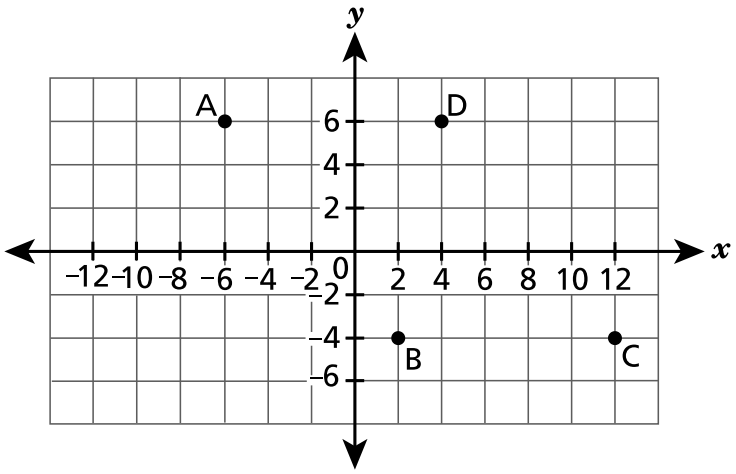
B $3\frac{1}{2}$

C $37\frac{1}{2}$

D $87\frac{1}{2}$

37 **This question is worth 1 credit.**

The four vertices of a parallelogram are plotted on the coordinate plane shown below.



What is the distance, in units, between vertices A and D ?

Answer _____ units

38 **This question is worth 1 credit.**

What value of n makes the equation $\frac{n}{8} = 17$ true?

Answer _____

GO ON

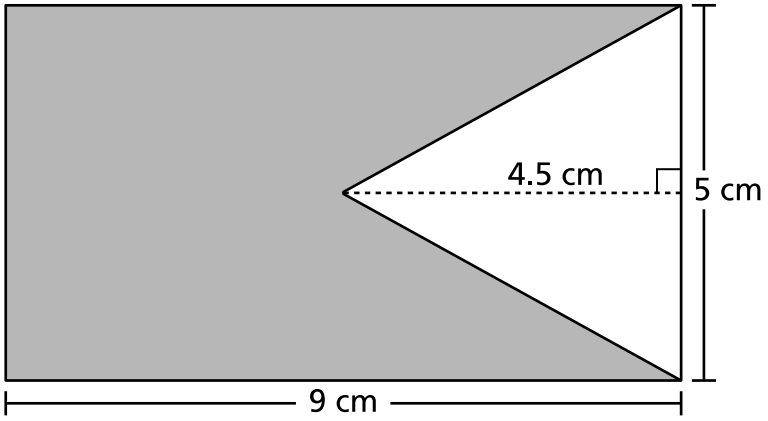
39 **This question is worth 1 credit.**

An artist uses a ratio of 6 gallons of orange paint to 8 gallons of blue paint. If the artist uses 1 gallon of blue paint, how many gallons of orange paint will they use?

Answer _____ gallon(s)

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

A diagram of a rectangular flag, with a shaded section, is shown below.



What is the area, in square centimeters, of the shaded section of the flag?

Show your work.

Answer _____ square centimeters

GO ON

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

A student claims that the expression $6 + 8x$ is equivalent to the expression $3(3 + 5x)$.
What is incorrect about the student's claim? Be sure to include an equivalent expression to $3(3 + 5x)$ in your response.

Explain your answer.

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

Mike needs a ticket every time he rides the bus. Given the equation $c = 2.75t$, what is the relationship between t, the number of tickets that Mike buys, and c, the total cost? Be sure to identify which variable is independent and which variable is dependent in your answer.

Explain your answer.

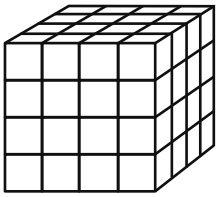
43 **This question is worth 2 credits.**

A student claims that 4 is the greatest common factor of 24 and 40, because the two numbers are both multiples of 4. Is the student's claim correct?

Explain how you determined your answer.

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

A prism made of unit cubes is shown below.

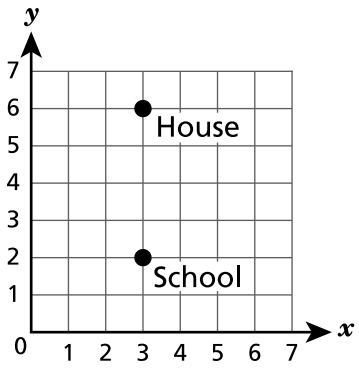


What perfect cube is represented by the volume of the prism? Be sure to include what you know about volume and exponents in your answer.

Explain your answer.

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

The location of Jake's school and house are represented on the coordinate plane shown below.



What is the distance, in units, from Jake's school to his house? Be sure to include the coordinates for both locations and how those coordinates can be used to determine your answer.

Explain how you determined your answer.

46 **This question is worth 3 credits.**

Rex and Nero are saving money for new bikes. They both start with $0.00 and save at a constant rate for 16 months. The tables below show Rex's and Nero's total savings, in dollars, at the end of different numbers of months.

REX'S SAVINGS

Number of Months	2	4	6	8
Savings (dollars)	18	36	54	72

NERO'S SAVINGS

Number of Months	3	6	9	12
Savings (dollars)	36	72	108	144

At the end of 16 months, what is the difference between the amount of money Rex saved and the amount of money Nero saved?

Show your work.

Answer $ _____

STOP

Grade 6
Mathematics Test
Session 2
Spring 2024

THE STATE EDUCATION DEPARTMENT

THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234

2024 Mathematics Tests Map to the Standards

Grade 6

Question	Type	Key	Points	Standard	Domain	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									
2	Multiple Choice	B	1	NGLS.Math.Content.NY-6.EE.2a	Expressions and Equations		0.71		
3	Multiple Choice	D	1	NGLS.Math.Content.NY-6.EE.5	Expressions and Equations		0.71		
4	Multiple Choice	C	1	NGLS.Math.Content.NY-6.NS.8	The Number System		0.62		
11	Multiple Choice	B	1	NGLS.Math.Content.NY-6.EE.8	Expressions and Equations		0.55		
14	Multiple Choice	D	1	NGLS.Math.Content.NY-6.EE.1	Expressions and Equations		0.58		
15	Multiple Choice	D	1	NGLS.Math.Content.NY-6.NS.1	The Number System		0.54		
18	Multiple Choice	B	1	NGLS.Math.Content.NY-6.NS.6a	The Number System		0.28		
20	Multiple Choice	C	1	NGLS.Math.Content.NY-6.G.2	Geometry		0.44		
22	Multiple Choice	B	1	NGLS.Math.Content.NY-6.EE.6	Expressions and Equations		0.58		
23	Multiple Choice	D	1	NGLS.Math.Content.NY-6.RP.3d	Ratios and Proportional Relationships		0.54		
26	Multiple Choice	B	1	NGLS.Math.Content.NY-6.NS.6b	The Number System		0.38		
28	Multiple Choice	C	1	NGLS.Math.Content.NY-6.G.1	Geometry		0.35		
29	Multiple Choice	B	1	NGLS.Math.Content.NY-6.NS.7a	The Number System		0.47		
Session 2									
31	Multiple Choice	A	1	NGLS.Math.Content.NY-6.RP.2	Ratios and Proportional Relationships		0.89		
32	Multiple Choice	B	1	NGLS.Math.Content.NY-6.G.4	Geometry		0.53		
33	Multiple Choice	C	1	NGLS.Math.Content.NY-6.RP.3c	Ratios and Proportional Relationships		0.50		
34	Multiple Choice	C	1	NGLS.Math.Content.NY-6.RP.3b	Ratios and Proportional Relationships		0.73		
35	Multiple Choice	D	1	NGLS.Math.Content.NY-6.G.2	Geometry		0.54		
36	Multiple Choice	A	1	NGLS.Math.Content.NY-6.EE.7	Expressions and Equations	NGLS.Math.Content.NY-6.RP.3b	0.71		
37	Constructed Response	n/a	1	NGLS.Math.Content.NY-6.G.3	Geometry			0.20	0.20
38	Constructed Response	n/a	1	NGLS.Math.Content.NY-6.EE.7	Expressions and Equations			0.58	0.58
39	Constructed Response	n/a	1	NGLS.Math.Content.NY-6.RP.2	Ratios and Proportional Relationships	NGLS.Math.Content.NY-6.RP.3b		0.37	0.37
40	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.G.1	Geometry			0.68	0.34
41	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.EE.4	Expressions and Equations			0.74	0.37
42	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.EE.9	Expressions and Equations			0.57	0.28
43	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.NS.4	The Number System			0.85	0.42
44	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.G.5	Geometry			0.59	0.30
45	Constructed Response	n/a	2	NGLS.Math.Content.NY-6.NS.8	The Number System			0.90	0.45
46	Constructed Response	n/a	3	NGLS.Math.Content.NY-6.RP.3a	Ratios and Proportional Relationships			1.17	0.39

*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.