



New York State
EDUCATION DEPARTMENT
Knowledge > Skill > Opportunity

**New York State Testing Program
Grade 7
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 7

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, a reference sheet, and a calculator that you can use on the test if they help you answer the question.

- 1** A store sells packages of butter. The table below shows the cost, in dollars, for different numbers of packages of butter.

COST OF BUTTER

Number of Packages	3	4	7	11
Cost (dollars)	9.75	13.00	22.75	35.75

What is the cost, per package, of the butter?

- A** \$0.31
- B** \$3.25
- C** \$6.75
- D** \$9.75

GO ON

4

A farmer plants 4 rows of seedlings. The first 3 rows are equal in length. The length of the fourth row is 19 yards. The total length of the 4 rows is 61 yards. What is the length, in yards, of each of the first 3 rows the farmer plants?

A 14

B 22

C 39

D 42

5

On average, ocean temperatures around the world range from -2°C to 32°C . What is the difference between the two ocean temperatures?

A -34°C

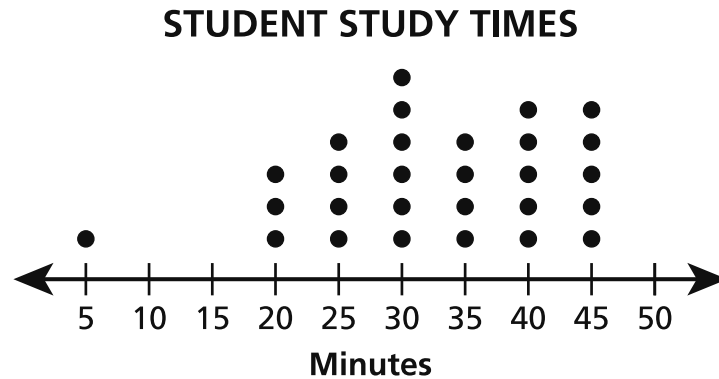
B 34°C

C -30°C

D 30°C

GO ON

Mr. Moore collected data from his sixth grade class on how many minutes they studied for a test. The dot plot below shows the number of minutes each student studied.



Which statement about the distribution of the data is true?

- A The distribution is symmetrical.
- B The distribution has a range of 25.
- C The distribution appears to have an outlier.
- D The distribution has a cluster from 25 to 35 minutes.

10

Victoria has a movie subscription. She pays an annual membership fee of \$24.00 and also a fee of \$4.00 for each movie she watches. Which inequality can be used to determine the total number of movies, m , Victoria can watch if she wants to spend less than \$100.00 per year?

A $24m + 4 < 100$

B $4m + 24 < 100$

C $4m + 24 \leq 100$

D $4m + 24 \geq 100$

11

The regular price of a shirt is n dollars. During a sale, the shirt is discounted by 15%. Which pair of expressions includes two correct ways to represent the price, in dollars, of the shirt after the discount?

A $n - 0.15$ and 0.85

B $n - 0.15n$ and 0.85

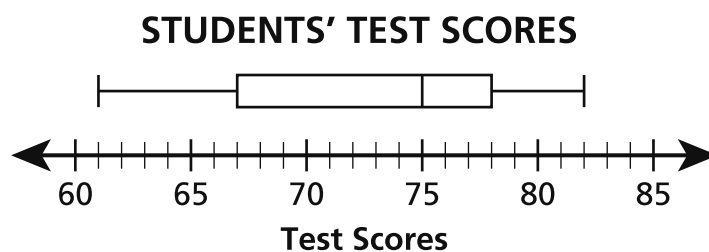
C $n - 15.00$ and 85.00

D $n - 0.15n$ and $0.85n$

13 Which expression is equivalent to $3.6(x - 5) + 2.5(x + 4)$?

- A** $6.1x - 1$
- B** $6.1x - 8$
- C** $1.1x - 1$
- D** $1.1x - 8$

14 A teacher records the test scores for the students in her class. The results are shown in the box plot below.



Based on these data, what is the interquartile range?

- A** 3
- B** 8
- C** 11
- D** 21

GO ON

15

What is the value of the expression shown below?

$$\frac{1}{3} - \left(\frac{2}{3} + \frac{5}{7} \right) - 2\frac{1}{5}$$

- A $-\frac{1}{15}$
- B $-\frac{11}{15}$
- C $-1\frac{16}{105}$
- D $-3\frac{26}{105}$

17

There were two movies shown at a theater. A total of 150 tickets were sold for the first movie, and 40% more tickets were sold for the second movie than for the first movie. If each ticket sold for \$13.50, what was the total amount of ticket sales, in dollars, for both movies?

- A \$2,565.00
- B \$2,835.00
- C \$4,590.00
- D \$4,860.00

GO ON

21

The table shown below represents a proportional relationship between x and y .

x	y
9	2.25
13	3.25
17	4.25
21	5.25

Which equation represents this proportional relationship?

A $y = x$

B $y = 4x$

C $y = \frac{1}{4}x$

D $y = \frac{9}{4}x$

- 26** Pat uses $2\frac{5}{8}$ cups of sugar for $3\frac{1}{2}$ batches of cookies. She uses the same amount of sugar for each batch of cookies baked. How much sugar, in cups per batch, does Pat use to bake cookies?

- A** $\frac{3}{4}$
- B** $\frac{7}{8}$
- C** $1\frac{1}{3}$
- D** $6\frac{1}{8}$

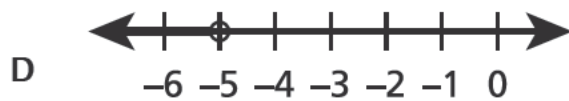
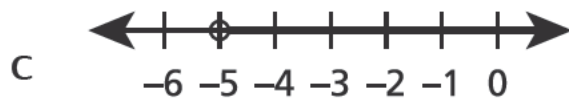
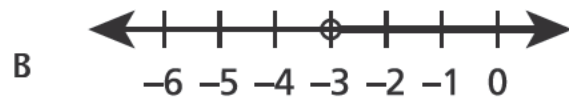
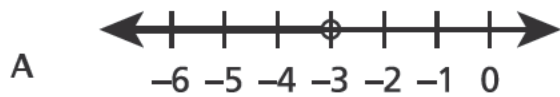
29

A seventh grade class sells gift cards as a fundraiser for the school library. Each gift card sells for \$15.00. The library gets 35% of the money earned for each gift card sold. How much money does the library get if the class sells 500 gift cards?

- A \$1,167.00
- B \$1,429.00
- C \$2,625.00
- D \$4,875.00

GO ON

30

Which graph represents the solution to the inequality $4 - 4x > 16$?

31

What is the value of the expression shown below?

$$-1\frac{1}{2} + \left(-\frac{7}{8}\right)\left(-\frac{3}{4}\right)$$

A $-\frac{75}{64}$

B $-\frac{27}{32}$

C $-2\frac{5}{32}$

D $-3\frac{1}{8}$

GO ON

**Grade 7
Mathematics Test
Session 1
Spring 2024**

Name: _____



New York State Testing Program

Mathematics Test Session 2

Grade 7

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.

33

Which situation results in a final value of zero?

- A The total number of pencils Aaron has if he had 12 pencils and bought 12 more pencils.
- B The total number of blocks Tom walks after walking 6 blocks north and walking 6 blocks west.
- C The total distance Nicole hikes from a depth of 10 feet below sea level to a height of 10 feet above sea level.
- D The total number of cookies Tiffany has if she bought 4 batches of cookies and sold the 4 batches of cookies.

34

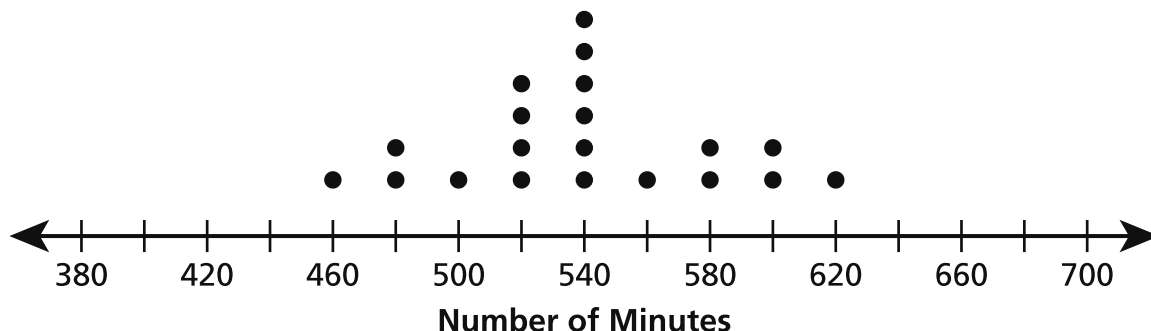
Cheryl earns \$23.75 babysitting for $2\frac{1}{2}$ hours. At that rate, how much does Cheryl earn when babysitting for $5\frac{3}{4}$ hours?

- A \$50.73
- B \$54.63
- C \$68.31
- D \$78.38

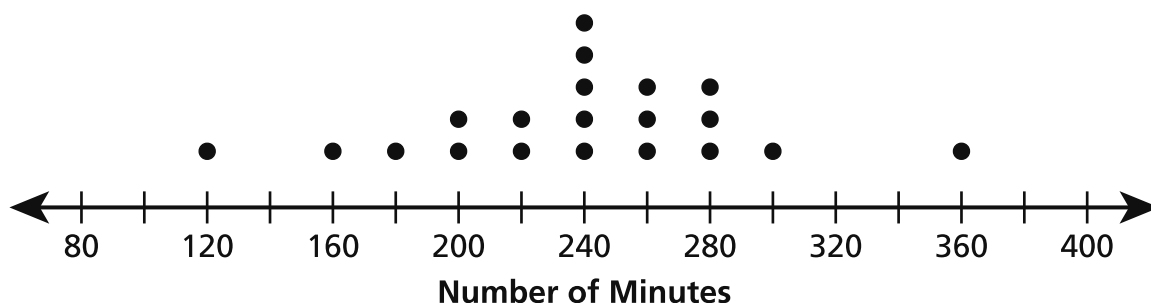
GO ON

Two line plots are shown below. The first one represents the average cell phone usage per day, in minutes, of 20 teenagers. The second one represents the average cell phone usage per day, in minutes, of 20 adults.

TEENAGERS' CELL PHONE USAGE



ADULTS' CELL PHONE USAGE



Which statement about the two data sets is true?

- A The mean of the data for the adults is greater than the mean of the data for the teenagers because the data points for the adults are more spread out.
- B The mean of the data for the teenagers is greater than the mean of the data for the adults because the scale for the teenagers has greater numbers than the scale for the adults.
- C The range of the data for the teenagers is greater than the range of the data for the adults because the data points for the teenagers are clustered.
- D The range of the data for the teenagers is greater than the range of the data for the adults because the scale for the teenagers has greater numbers than the scale for the adults.

36

There are 140 students enrolled at a school.

- Of the students that are enrolled at the school, $\frac{3}{4}$ play sports.
- Of the students that play sports, $\frac{1}{7}$ are in an art club.

How many students enrolled at the school both play sports and are in an art club?

- A 5
- B 15
- C 60
- D 125

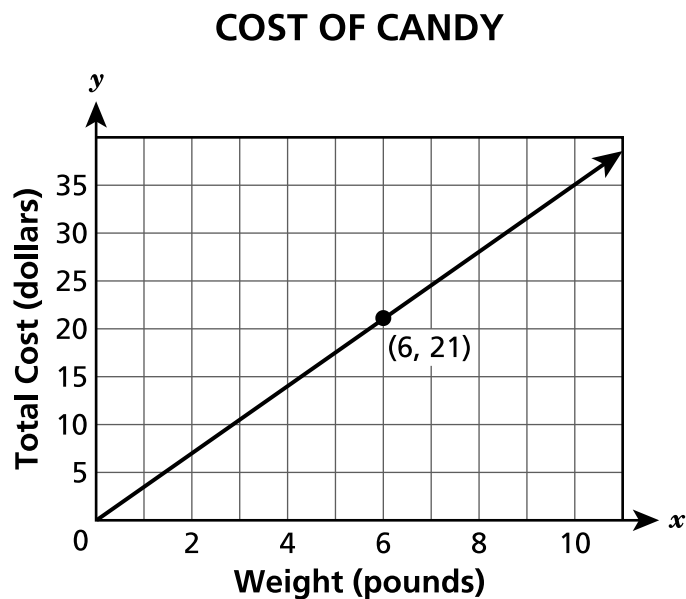
37

Which expression is equivalent to $17\left(\frac{1}{3}\right)x - \frac{7}{2}x$?

- A $\frac{83x}{6}$
- B $\frac{55x}{6}$
- C $\frac{13x}{6}$
- D $\frac{10x}{6}$

GO ON

A store buys candy by the pound. The graph shown below represents the relationship between the weight, in pounds, and the total cost, in dollars, of the candy.



What is the cost of one pound of candy?

- A \$0.29
- B \$3.33
- C \$3.50
- D \$5.00

39

This question is worth 1 credit.

Marty types at an average rate of 25 words per minute. Write an equation that could be used to determine the average number of words, w , Marty types in t minutes.

Answer Equation _____

GO ON

40

This question is worth 1 credit.

What is the value of the expression $-2(-3)(4)$?

Answer _____

GO ON

41

This question is worth 1 credit.

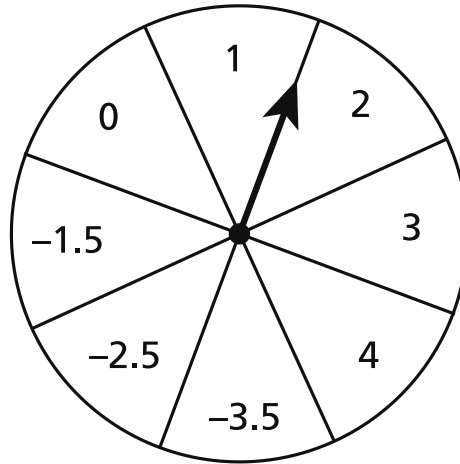
Kenneth bought a shirt that was originally priced at \$55.00. After a discount, he paid \$38.50. What was the percent discount of the original price of the shirt?

Answer _____ %

GO ON

This question is worth 2 credits.

Frank and his friends are playing a game with the spinner shown below.



Each player spins the arrow 5 times and adds all the numbers the spinner lands on to get their score. Frank's first three spins are listed below.

-1.5, 2, and -3.5

Frank has two more spins. What two numbers would the spinner need to land on for Frank's final score to equal 0?

Explain your answer.

43

This question is worth 2 credits.

Joann went for a hike. The trail she hiked was $5\frac{1}{2}$ miles and it took her $2\frac{1}{5}$ hours to complete. If Joann hiked at an average unit rate, how fast, in miles per hour, did Joann hike?

Show your work.

Answer _____ miles per hour

GO ON

44

This question is worth 2 credits.

A map has a scale of 1 centimeter = 50 miles. The actual distance between New York City and Washington, D.C., is 225 miles. What is the distance, in centimeters, between the two cities on the map?

Show your work.

Answer _____ centimeters

GO ON

45

This question is worth 2 credits.

During lunch, a sandwich shop owner sold 2 types of sandwiches: turkey and roast beef. Each sandwich cost \$4.99 and the total sales from all of the sandwiches sold was \$219.56. There were 25 turkey sandwiches sold. How many roast beef sandwiches were sold?

Show your work.

Answer _____ roast beef sandwiches

GO ON

46

This question is worth 2 credits.

Write the expression $-8(4 - x) + 20$ as the sum of two unlike terms. Be sure to show the use of the properties of operations in your answer.

Show your work.

Answer _____

GO ON

This question is worth 2 credits.

Jonah received a gift card to a movie theater. The gift card allows him to choose one type of movie, one snack, and one drink. His options are shown in the list below.

- Movies: drama, action, comedy
- Snacks: popcorn, chips, candy
- Drinks: water, juice

He chooses one movie, one snack, and one drink at random. What is the probability that Jonah chooses a comedy, chips, and juice? Write your answer as a fraction.

Show your work.

Answer _____

GO ON

48

This question is worth 3 credits.

A furniture store is advertising a 20% discount on the price of sofas. Scott chooses a sofa with a discounted price of \$460.00. He must also pay an 8% sales tax. How much money will Scott save on the discounted sofa, including tax, compared to the originally priced sofa, including tax?

Show your work.

Answer \$ _____

STOP

**Grade 7
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 7

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									
1	Multiple Choice	B	1	NGLS.Math.Content.NY-7.RP.2b	Ratios and Proportional Relationships		0.89		
4	Multiple Choice	A	1	NGLS.Math.Content.NY-7.EE.4a	Expressions and Equations		0.68		
5	Multiple Choice	B	1	NGLS.Math.Content.NY-7.NS.1c	The Number System		0.52		
7	Multiple Choice	C	1	NGLS.Math.Content.NY-6.SP.2	Statistics and Probability		0.59		
10	Multiple Choice	B	1	NGLS.Math.Content.NY-7.EE.4b	Expressions and Equations		0.49		
11	Multiple Choice	D	1	NGLS.Math.Content.NY-7.EE.2	Expressions and Equations		0.30		
13	Multiple Choice	B	1	NGLS.Math.Content.NY-7.EE.1	Expressions and Equations		0.68		
14	Multiple Choice	C	1	NGLS.Math.Content.NY-7.SP.1	Statistics and Probability		0.58		
15	Multiple Choice	D	1	NGLS.Math.Content.NY-7.NS.1d	The Number System		0.69		
17	Multiple Choice	D	1	NGLS.Math.Content.NY-7.EE.3	Expressions and Equations		0.40		
21	Multiple Choice	C	1	NGLS.Math.Content.NY-7.RP.2c	Ratios and Proportional Relationships		0.52		
26	Multiple Choice	A	1	NGLS.Math.Content.NY-7.RP.1	Ratios and Proportional Relationships		0.47		
29	Multiple Choice	C	1	NGLS.Math.Content.NY-7.RP.3	Ratios and Proportional Relationships		0.67		
30	Multiple Choice	A	1	NGLS.Math.Content.NY-7.EE.4b	Expressions and Equations		0.28		
31	Multiple Choice	B	1	NGLS.Math.Content.NY-7.NS.3	The Number System		0.70		
Session 2									
33	Multiple Choice	D	1	NGLS.Math.Content.NY-7.NS.1a	The Number System		0.78		
34	Multiple Choice	B	1	NGLS.Math.Content.NY-7.RP.3	Ratios and Proportional Relationships		0.75		
35	Multiple Choice	B	1	NGLS.Math.Content.NY-7.SP.3	Statistics and Probability		0.63		
36	Multiple Choice	B	1	NGLS.Math.Content.NY-7.NS.3	The Number System		0.55		
37	Multiple Choice	C	1	NGLS.Math.Content.NY-7.EE.1	Expressions and Equations		0.60		
38	Multiple Choice	C	1	NGLS.Math.Content.NY-7.RP.2b	Ratios and Proportional Relationships		0.65		
39	Constructed Response	n/a	1	NGLS.Math.Content.NY-7.RP.2c	Ratios and Proportional Relationships			0.31	0.31
40	Constructed Response	n/a	1	NGLS.Math.Content.NY-7.NS.2c	The Number System			0.81	0.81
41	Constructed Response	n/a	1	NGLS.Math.Content.NY-7.RP.3	Ratios and Proportional Relationships			0.33	0.33
42	Constructed Response	n/a	2	NGLS.Math.Content.NY-7.NS.1d	The Number System	NGLS.Math.Content.NY-7.NS.1b		1.21	0.60
43	Constructed Response	n/a	2	NGLS.Math.Content.NY-7.RP.1	Ratios and Proportional Relationships			1.20	0.60
44	Constructed Response	n/a	2	NGLS.Math.Content.NY-7.G.1	Geometry			1.43	0.72
45	Constructed Response	n/a	2	NGLS.Math.Content.NY-7.EE.4a	Expressions and Equations			1.33	0.67
46	Constructed Response	n/a	2	NGLS.Math.Content.NY-7.EE.1	Expressions and Equations			0.76	0.38
47	Constructed Response	n/a	2	NGLS.Math.Content.NY-7.SP.8a	Statistics and Probability			0.73	0.36
48	Constructed Response	n/a	3	NGLS.Math.Content.NY-7.RP.3	Ratios and Proportional Relationships			0.75	0.25

*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.