New York State administered the Mathematics Tests in May 2018 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 2018 Exams

Background

In 2013, New York State began administering tests designed to assess student performance in accordance with the instructional shifts and rigor demanded by the new New York State P-12 Learning Standards in Mathematics. To help in this transition to new assessments, the New York State Education Department (SED) has been releasing an increasing number of test questions from the tests that were administered to students across the State in the spring. This year, SED is again releasing large portions of the 2018 NYS Grades 3-8 English Language Arts and Mathematics test materials for review, discussion, and use.

For 2018, included in these released materials are at least 75 percent of the test questions that appeared on the 2018 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 of the 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 https://www.engageny.org/resource/test-guides-english-language-arts-and-mathematics.

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 future valid and reliable tests, some content must remain secure for possible use on future exams. As such, 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. Specific criteria for writing test questions, as well as additional assessment information, are available at http://www.engageny.org/common-core-assessments.
**CONVERSIONS**

<table>
<thead>
<tr>
<th>Unit Conversion</th>
<th>Equivalent Unit</th>
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</thead>
<tbody>
<tr>
<td>1 mile = 5,280 feet</td>
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<tr>
<td></td>
<td>1 cup = 8 fluid ounces</td>
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<tr>
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**FORMULAS**

Right Rectangular Prism \[ V = Bh \] or \[ V = lwh \]
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. 1,104 student photos to display around the school. He plans to put them on 48 poster boards. How many student photos will Mike place on each poster board?

A. 20  
B. 22  
C. 23  
D. 24

2. The shaded parts of the models below each represent a fraction.

What is the sum of the two fractions?

A. $\frac{45}{110}$  
B. $\frac{65}{110}$  
C. $\frac{70}{100}$  
D. $\frac{72}{100}$
Jake used 1-centimeter cubes to build a right rectangular prism that has a volume of 24 cubic centimeters. Which figure could represent the prism that Jake built?
A school library ordered 30 books. If 2/5 of the books are science and 1/3 of the books are biographies, and the rest of the books are fiction. What fraction of the books ordered are fiction?

A \[ \frac{3}{5} \]
B \[ \frac{3}{8} \]
C \[ \frac{4}{15} \]
D \[ \frac{11}{15} \]

The model below represents the number of books ordered. Which expression represents the number of books ordered that are fiction?

A \[ \frac{1}{3} \times \frac{2}{5} \]
B \[ \frac{1}{3} \times \frac{5}{2} \]
C \[ 3 \times \frac{2}{5} \]
D \[ 3 \times \frac{5}{2} \]
13 Which always has four congruent sides?

A parallelogram
B rectangle
C rhombus
D trapezoid

14 Which is the value of the expression low.

A The value is less than .
B The value is less than .
C The value is less than .
D The value is less than .
The diagram below shows some 1-inch cubes placed in a box.

How many **more** 1-inch cubes are needed to completely fill the box?

A 16
B 24
C 96
D 120

Which expression has a value that is greater than 42.537?

A \((4 \times 10) + (2 \times 1) + \left(5 \times \frac{1}{10}\right) + \left(9 \times \frac{1}{100}\right) + \left(3 \times \frac{1}{1,000}\right)\)
B \((4 \times 10) + (1 \times 1) + \left(6 \times \frac{1}{10}\right) + \left(2 \times \frac{1}{100}\right) + \left(5 \times \frac{1}{1,000}\right)\)
C \((4 \times 10) + (2 \times 1) + \left(5 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right) + \left(7 \times \frac{1}{1,000}\right)\)
D \((4 \times 10) + (2 \times 1) + \left(5 \times \frac{1}{10}\right) + \left(1 \times \frac{1}{100}\right) + \left(9 \times \frac{1}{1,000}\right)\)
A state failed to hold a heavy ki. The weight of the ki was 1,050 pounds. What is the weight of the ki, of the weight of the ki.

A 8,200
B 16,400
C 24,600
D 32,800

Whi xpessi 15 and 12.

A 15 \times 12 + 8
B (15 + 12) \times 8
C 15 \times 12 \times 8
D 15 \times (12 + 8)
The volume of a single layer of a regular prism is 18 cubic units. There are 5 layers of the regular prism. What is the volume of this regular prism?

A 90
B 23
C 13
D .

Which of the expressions is the correct one?

A — of a package of pencils shared equally among three friends
B the number of vitamin pills
C — of a stadium section
D a four-foot-long rope cut

Caley builds a rectangular prism of 18 cubes that each measure 1 centimeter. What could be the dimensions of this rectangular prism?

A length : width : height
B length : width : height
C length : width : height
D length : width : height
Grade 5
2018
Mathematics Test
Session 1
May 1–3, 2018
New York State Testing Program

2018 Mathematics Test
Session 2
Grade 5

May 1–3, 2018

Released Questions
CONVERSIONS

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FORMULAS

Right Rectangular Prism

\[ V = Bh \text{ or } V = lwh \]
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.

A \[
\frac{1}{12}
\]

B \[
\frac{3}{4}
\]

C 4

D 12

32. What is the value of \[
-\frac{1}{5}
\].

A \[
5\frac{1}{8}
\]

B \[
5\frac{7}{8}
\]

C \[
5 \frac{5}{15}
\]

D \[
5 \frac{7}{15}
\]
33. Which number is equivalent to \( \ldots \)?

A. 0.73
B. 7.30
C. 73.100
D. 100.73

34. Which expression would be represented by the shaded parts of the model below.

\[ \frac{5}{8} + \frac{5}{5} \]
A. \( \frac{5}{8} + \frac{5}{5} \)
B. \( \frac{5}{8} \times \frac{5}{5} \)
C. \( \frac{5}{8} + 5 \)
D. \( \frac{5}{8} \times 5 \)
35 Three boxes are shipped. Each box has a base of 16 square feet. Two of the boxes have a height of 4 feet, and one has a height of 2 feet. What is the volume, in cubic feet, of the three boxes?

A 240
B 176
C 144
D 128

36 Li's goal is to drink 8 cups of water every day. She drank 37 ounces before lunch today. How much more water does Li need to drink today to reach her goal?

A 27 ounces
B 29 ounces
C 59 ounces
D 91 ounces

37 Ursula drew a polygon with all the angles obtuse. What kind of polygon could she have drawn?

A trapezoid
B parallelogram
C triangle
D pentagon

GO ON
Anna is looking at the columns of units below. The first column is shown below.

<table>
<thead>
<tr>
<th>KEY</th>
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<tbody>
<tr>
<td>🟢 = 1 unit cube</td>
</tr>
</tbody>
</table>

The other two columns each have four fewer units than the first column. What is the volume, in units, of Anna’s figure?

A) 12
B) 16
C) 22
D) 24
Samantha is preparing lemonade to serve to 10 of her friends. How many times will she need to fill the pitcher, which holds 400 milliliters of lemonade?

*Write your work.*

*Answer: ____________________ times*
Write the value of the digits 10 and 15. Explain how you know the number you wrote.

Answer

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Mark and his sister are going to order two pizzas of the same size.

Sister: I'm going to order large pizzas.

Mark: I think I want medium pizzas. I know that he would get more value if I ordered large pizzas, but I also want to include a number of comparison options.
A section of the floor is covered with floor tiles, as shown below.

Each square tile has a side length of $\frac{1}{3}$ foot.

What is the area, in square feet, of the section of the floor that is covered with floor tiles?

*Work your work.*

\[ \text{Answer: } \quad \text{square feet} \]
The list shows the number of bags of grapes, grouped by weight, to the nearest $\frac{1}{8}$ pound.

**WEIGHT OF BAGS OF GRAPES**

How many bags of grapes had a weight less than $\frac{3}{8}$?

*Answer: ____________ bags*

What was the total weight less than $\frac{3}{8}$?

*Answer: ____________ pound(s)*
At the Middleton School festival, a tent covers a rectangular space $30\frac{1}{2}$ yards long and $9\frac{1}{3}$ yards wide. What is the area, in square yards, covered by the tent.

*Write your work.*

Answer: ___________________________ square yards
Kia purchased books at a book fair. The shaded part of the decimal grid below represents the part of $1.00 that she has remaining after purchasing her books.

Kia decides to give all of the money she has remaining to her 3 friends so they can buy some bookmarks which cost $0.10 each. If Kia gives each of her friends the same amount of money, what is the greatest number of bookmarks that each of her friends can buy?

*Show your work.*

*Answer*  _______________ bookmarks per friend
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<thead>
<tr>
<th>Question</th>
<th>Type</th>
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<th>Number of Points</th>
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