engage^ny

Our Students. Their Moment.

# New York State Testing Program
# Grade 3 Common Core Mathematics Test

## Released Questions

## May 2016



New York State administered the Mathematics Common Core Tests in April 2016 and is now making approximately 75% of the questions from these tests available for review and use.

June 28, 2016

# New York State Testing Program
# Grade 3-8 Mathematics

## Released Questions from 2016 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 numbers 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 2016 NYS Grade 3-8 Common Core English Language Arts and Mathematics test materials for review, discussion, and use.

For 2016, included in these released materials are at least 75 percent of the test questions that appeared on the 2016 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 http://www.engageny.org/resource/test-guides-for-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.

Name: _____


# New York State Testing Program

# 2016 Common Core Mathematics Test Book 1

# Grade 3

## April 13–15, 2016

Released Questions

Developed and published under contract with the New York State Education Department by Questar Assessment, Inc., 5550 Upper 147th Street West, Apple Valley, MN 55124. 

# Book 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 choosing your response.
- You have been provided with a ruler to use during the test. Use the ruler whenever you think it will help you to answer the question.
- Plan your time.

1 Which clock shows the time 7:08?

A 

B 

C 

D 



**GO ON**

2 What is 836 rounded to the nearest 10?

A 800

B 830

C 840

D 870

3 Which two values are located at the same point on a number line?

A $\frac{4}{1}$ and 4

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

C $\frac{8}{8}$ and 8

D $\frac{6}{2}$ and 4

7 Umi created the number pattern below by adding the same amount each time to get the next number.

20, 40, 60, 80, . . .

What will be the eighth number in the pattern?

A 160

B 240

C 320

D 640

8 In which equation could the number six replace the question mark to make the equation true?

A $9 \times \underline{?} = 56$

B $48 \div \underline{?} = 8$

C $30 \times 5 = \underline{?}$

D $24 \div 3 = \underline{?}$

12 The table shows the total number of wheels Mr. Monroe needs to make different numbers of wagons.

**WHEELS NEEDED FOR WAGONS**

| Number of Wagons | Total Number of Wheels |
|---|---|
| 1 | 4 |
| 2 | 8 |
| 3 | 12 |
| 4 | 16 |

What is one pattern that can be seen in the table?

**A** The number of wheels increases by 1 each time.

**B** The number of wheels increases by 3 each time.

**C** The number of wheels increases by 4 each time.

**D** The number of wheels increases by 12 each time.

13 If the equation $5 \times \underline{\quad ? \quad} = 45$ is true, then which expression can be used to find the missing value?

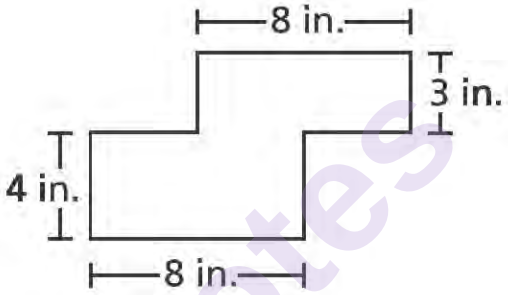
A $9 \div 45$

B $5 \div 45$

C $45 \div 9$

D $45 \div 5$

14 A diagram of Keisha's poster board is shown below.




What was the total area, in square inches, of Keisha's poster board?

A 46 square inches

B 56 square inches

C 112 square inches

D 192 square inches

**19** Maddie will ride her bike a total of 56 miles over 7 days. She will ride the same number of miles each day. What is the total number of miles Maddie will ride each day?

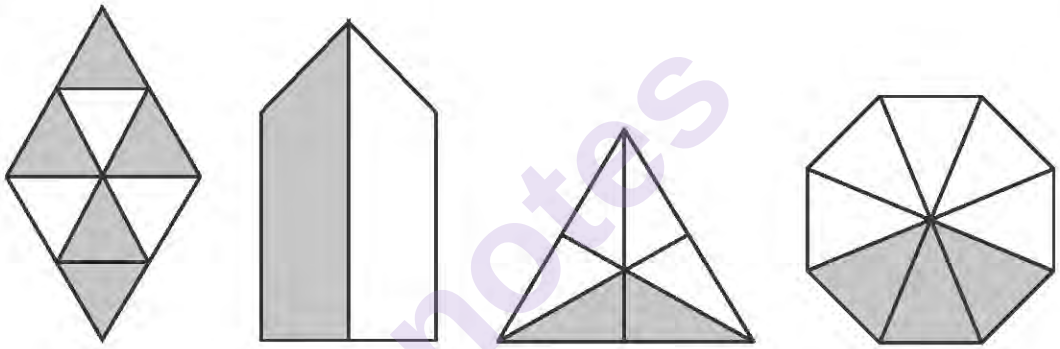
**A** 8

**B** 9

**C** 49

**D** 63

**20** Four students each drew a figure. Each student shaded part of the figure to represent a fraction.



Selena Tara Carson Erik

Which sentence about the figures is true?

**A** Selena shaded $\frac{5}{8}$ of her figure.

**B** Tara shaded $\frac{1}{1}$ of her figure.

**C** Carson shaded $\frac{2}{4}$ of his figure.

**D** Erik shaded $\frac{5}{3}$ of his figure.

21 A group of students played a basketball game after school. Which total can be found using the expression $7 \times 2$?

A the total number of points if a player made 7 shots and each shot was worth 2 points

B the total number of basketballs if 7 basketballs were old and 2 basketballs were new

C the total number of points if one player had 7 points and a different player had 2 points

D the total number of basketballs used if there were 7 basketballs and 2 of the basketballs were not used

22 Which two fractions both represent the same location on a number line?

A $\frac{2}{3}, \frac{1}{5}$

B $\frac{3}{4}, \frac{6}{8}$

C $\frac{2}{4}, \frac{3}{5}$

D $\frac{5}{6}, \frac{5}{8}$



**STOP**

# Grade 3
## 2016 Common Core Mathematics Test
## Book 1
April 13–15, 2016

Name: _____


# New York State Testing Program

# 2016 Common Core Mathematics Test Book 2

# Grade 3

## April 13–15, 2016

Released Questions

Developed and published under contract with the New York State Education Department by Questar Assessment, Inc., 5550 Upper 147th Street West, Apple Valley, MN 55124. 

# Book 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 choosing your response.
- You have been provided with a ruler to use during the test. Use the ruler whenever you think it will help you to answer the question.
- Plan your time.

23 What number makes the equation below true?

$81 \div \_\_\_\_ = 9$

A 8

B 9

C 72

D 90

24 Which expression is equal to 720?

A $7 \times 20$

B $8 \times 80$

C $9 \times 80$

D $9 \times 90$

25 Mr. Kohlberg owns a flower shop. At the beginning of the day, he had 152 roses. Mr. Kohlberg sold 96 of the roses and then wanted to separate the rest of the roses equally among 8 vases. What will be the total number of roses in each vase?

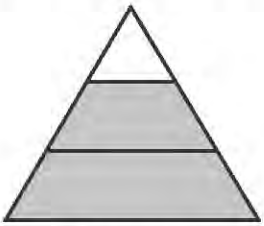
A 7

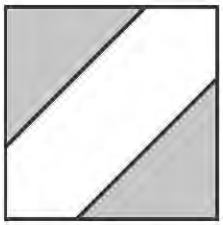
B 12

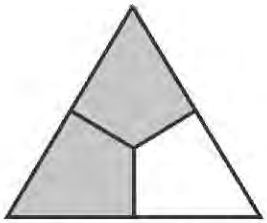
C 48

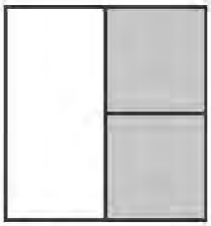
D 56

26 There are four shapes shown below.


Shape 1


Shape 2


Shape 3


Shape 4

Which of the shapes is $\frac{2}{3}$ shaded?

**A** shape 1

**B** shape 2

**C** shape 3

**D** shape 4

27 Which situation could be represented by the expression $6 \times 2$?

**A** Rocco hiked six miles each day for two days.

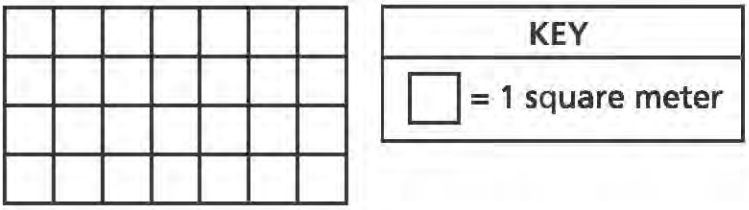
**B** Rocco had six baseballs and gave away two of them.

**C** Rocco had a total of six tennis balls in two cans.

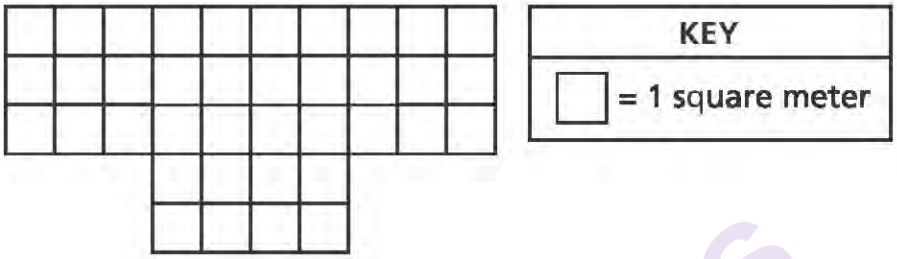
**D** Rocco biked six miles and then continued for two more miles.

31 Mr. Gomez built a deck. The deck had an area of 29 square meters. Which figure could represent the deck?

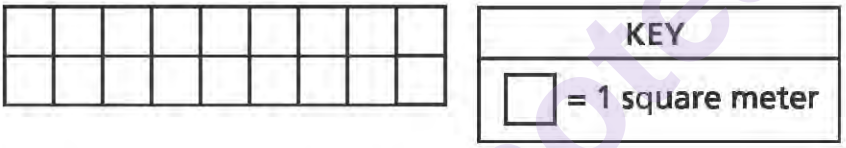
A



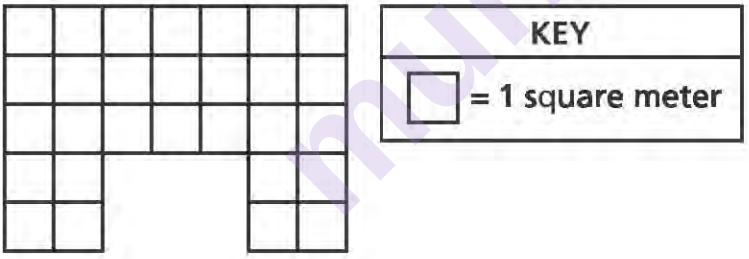

B




C




D



32 A number belongs in the box below. When the number is rounded to the nearest hundred, the result will be 900.


Which number belongs in the box?

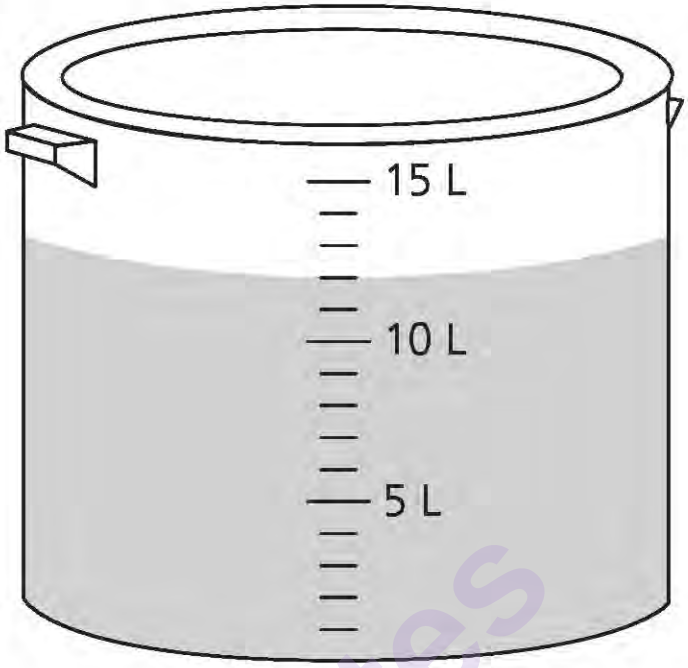
A 849

B 852

C 960

D 999

33 Kara has a bucket of water, as shown below.




Kara wants to pour all of the water equally into 3 bowls for her dogs. How many liters of water should Kara pour into each bowl?

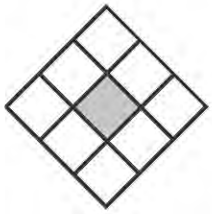
**A** 4

**B** 5

**C** 9

**D** 15

34 Leroy made a game board, shown below. Each small square on the game board has the same area.



What fraction of the game board is shaded?

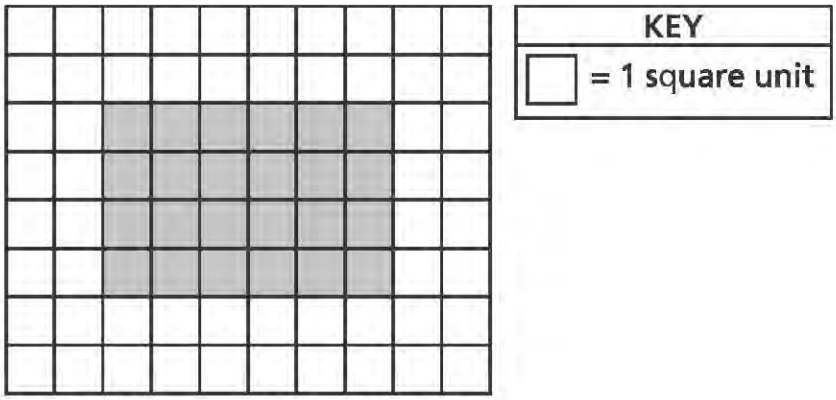
A $\frac{1}{9}$

B $\frac{1}{8}$

C $\frac{1}{6}$

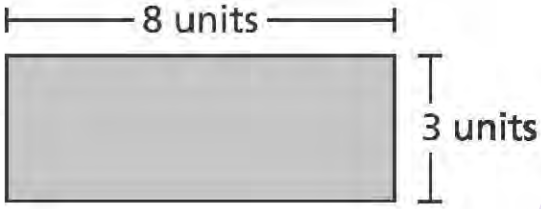
D $\frac{1}{3}$

38 Tomas made a poster for his science project. The shaded part of the figure below shows the area of his poster.

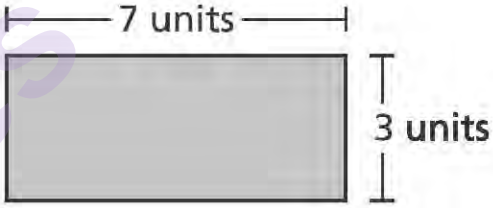



Which figure has the same area as the poster?

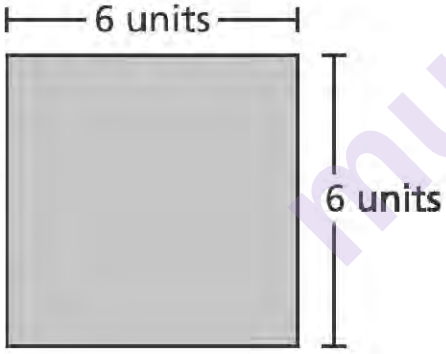
A



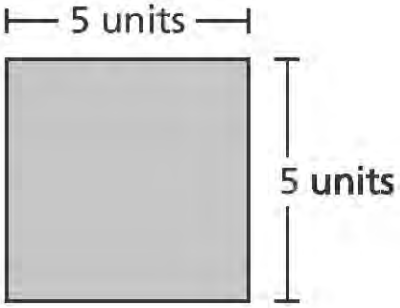

C




B




D






GO ON

39 The first number in a number pattern is 28. The pattern rule is to add 14 to get the next number in the pattern. If the pattern continues, which statement is true?

A All the numbers in the pattern can be divided equally by 10.

B All the numbers in the pattern can be divided equally by 4.

C All the numbers in the pattern can be divided equally by 8.

D All the numbers in the pattern can be divided equally by 7.

40 There were 6 rows of chairs set up for a meeting. Each row had 8 chairs. What was the total number of chairs set up for the meeting?

A 14

B 36

C 48

D 64

41 A circle is divided into parts. Each part is $\frac{1}{4}$ of the total area of the circle. Which sentence describes the circle?

A The circle has 1 small part and 3 large parts.

B The circle has 1 small part and 4 large parts.

C The circle has 4 parts that are each the same size.

D The circle has 5 parts that are each the same size.

42 A baker made 232 muffins. He sent 190 of the muffins to a local hotel. He will put the rest of the muffins in boxes. Each box can hold 6 muffins. Which equation can be used to find $b$, the number of boxes the baker will need?

A $(232 - 190) \div 6 = b$

B $(232 + 190) \times 6 = b$

C $(232 - 190) \times 6 = b$

D $(232 + 190) \div 6 = b$

# Grade 3
## 2016 Common Core Mathematics Test
## Book 2
April 13–15, 2016

**Name:** _____


# New York State Testing Program

# 2016 Common Core Mathematics Test Book 3

# Grade 3

## April 13–15, 2016

Released Questions



GRADE 3 MATH BOOK 3

Developed and published under contract with the New York State Education Department by Questar Assessment, Inc., 5550 Upper 147th Street West, Apple Valley, MN 55124. 

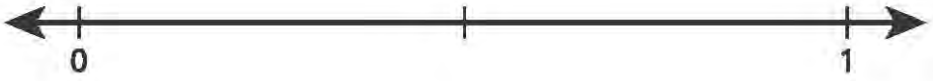
# Book 3

## 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 writing your response.
- You have been provided with a ruler to use during the test. Use the ruler whenever you think it will help you to answer the question.
- Be sure to show your work when asked.
- Plan your time.

45 Haley cut pieces of ribbon to make bookmarks. Each bookmark was $\frac{1}{8}$ foot long. Draw a point at $\frac{1}{8}$ on the number line below and label the point A.




Haley placed 5 of the bookmarks end to end.

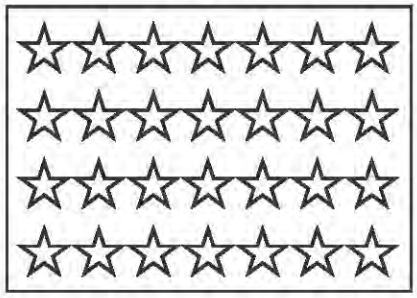
Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.




GO ON

46 Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

**Page 1**



Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

____ × ____ = ____

____ × ____ = ____

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

**Page 2**

**Page 3**

Complete the expression below to represent the total number of stickers on pages 2 and 3.

____ × (____ + ____)

47 Several students voted on their favorite sports activities.

- Eight students voted for basketball.
- Three students voted for volleyball.
- Seven students voted for baseball.
- Four students voted for kickball.

Complete the picture graph below to show the data.

**FAVORITE SPORT ACTIVITY**

| Activity | Number of Students |
|---|---|
| Basketball | |
| Volleyball | |
| Baseball | |
| Kickball | |

| KEY |
|---|
| ◯ = 2 students |

**48** Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

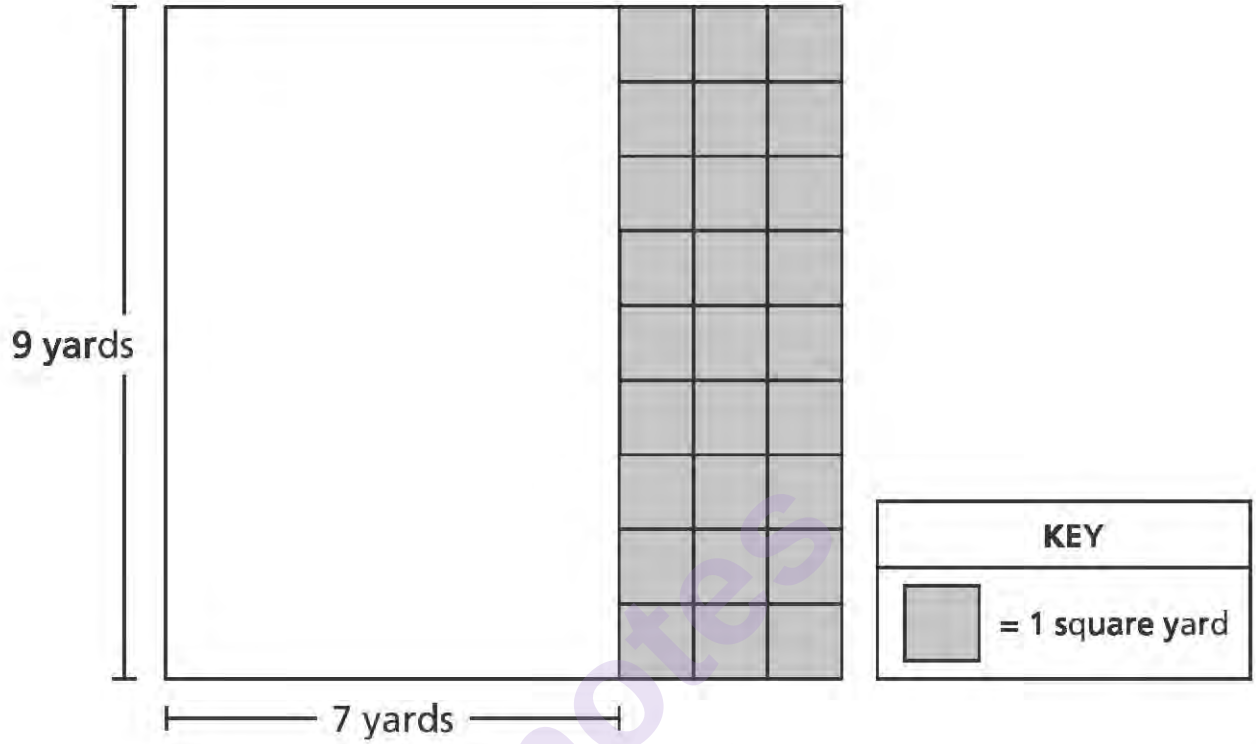
When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

***Show your work.***



***Answer*** _____ pieces

49 Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.




What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

***Show your work.***

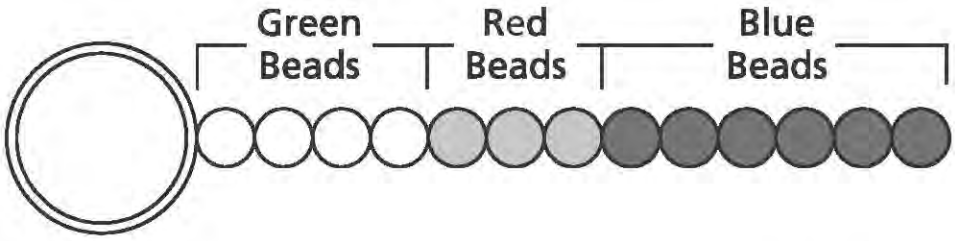
***Answer*** _____ square yards



***GO ON***

50 Sharon wants to make key chains with different-colored beads, as shown below.

**KEY CHAIN**




Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

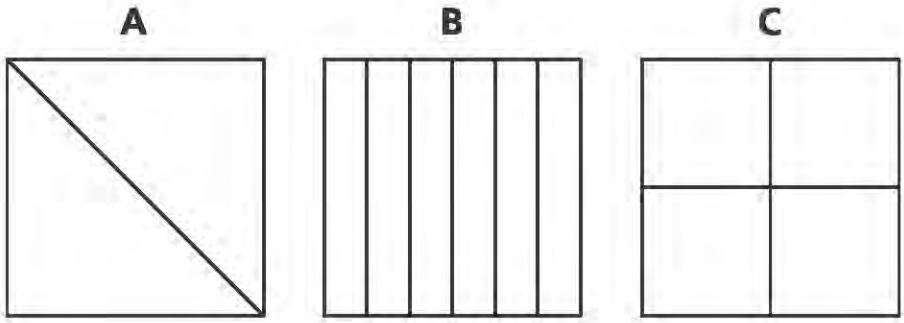
***Show your work.***



***Answer*** _____ red beads

_____ blue beads

51 Shade the models below to show 3 equivalent fractions and explain why they are equivalent.



52 There were 80 adults and 20 children at a school play. The school collected $8 for each adult's ticket and $3 for each child's ticket. The school donated $125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

***Show your work.***



***Answer*** $ _____

**STOP**

Place Student Label Here



# Grade 3
## 2016 Common Core Mathematics Test
## Book 3
April 13–15, 2016

# THE STATE EDUCATION DEPARTMENT

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

**2016 Mathematics Tests Map to the Standards**

**Grade 3** **Released Questions Available on EngageNY**

| 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 | Constructed Response Questions: P-Value (Average Points Earned ÷ Total Possible Points) |
|---|---|---|---|---|---|---|---|---|---|
| **Book 1** | | | | | | | | | |
| 1 | Multiple Choice | A | 1 | CCSS.Math.Content.3.MD.A.1 | Measurement and Data | | 0.79 | | |
| 2 | Multiple Choice | C | 1 | CCSS.Math.Content.3.NBT.A.1 | Number and Operations in Base Ten | | 0.77 | | |
| 3 | Multiple Choice | A | 1 | CCSS.Math.Content.3.NF.A.3c | Number and Operations—Fractions | CCSS.Math.Content.3.NF.A.2b | 0.31 | | |
| 7 | Multiple Choice | A | 1 | CCSS.Math.Content.3.NBT.A.3 | Number and Operations in Base Ten | CCSS.Math.Content.3.OA.D.9 | 0.83 | | |
| 8 | Multiple Choice | B | 1 | CCSS.Math.Content.3.OA.A.4 | Operations and Algebraic Thinking | | 0.58 | | |
| 12 | Multiple Choice | C | 1 | CCSS.Math.Content.3.OA.D.9 | Operations and Algebraic Thinking | | 0.81 | | |
| 13 | Multiple Choice | D | 1 | CCSS.Math.Content.3.OA.B.6 | Operations and Algebraic Thinking | | 0.55 | | |
| 14 | Multiple Choice | B | 1 | CCSS.Math.Content.3.MD.C.7d | Measurement and Data | | 0.62 | | |
| 19 | Multiple Choice | A | 1 | CCSS.Math.Content.3.OA.A.3 | Operations and Algebraic Thinking | | 0.65 | | |
| 20 | Multiple Choice | A | 1 | CCSS.Math.Content.3.NF.A.1 | Number and Operations—Fractions | CCSS.Math.Content.3.G.A.2 | 0.85 | | |
| 21 | Multiple Choice | A | 1 | CCSS.Math.Content.3.OA.A.1 | Operations and Algebraic Thinking | | 0.73 | | |
| 22 | Multiple Choice | B | 1 | CCSS.Math.Content.3.NF.A.3a | Number and Operations—Fractions | | 0.49 | | |
| **Book 2** | | | | | | | | | |
| 23 | Multiple Choice | B | 1 | CCSS.Math.Content.3.OA.A.4 | Operations and Algebraic Thinking | | 0.84 | | |
| 24 | Multiple Choice | C | 1 | CCSS.Math.Content.3.NBT.A.3 | Number and Operations in Base Ten | | 0.57 | | |
| 25 | Multiple Choice | A | 1 | CCSS.Math.Content.3.OA.D.8 | Operations and Algebraic Thinking | | 0.53 | | |
| 26 | Multiple Choice | C | 1 | CCSS.Math.Content.3.NF.A.1 | Number and Operations—Fractions | CCSS.Math.Content.3.G.A.2 | 0.72 | | |

**Grade 3** **Released Questions Available on EngageNY**

| 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 | Constructed Response Questions: P-Value (Average Points Earned ÷ Total Possible Points) |
|---|---|---|---|---|---|---|---|---|---|
| 27 | Multiple Choice | A | 1 | CCSS.Math.Content.3.OA.A.1 | Operations and Algebraic Thinking | | 0.64 | | |
| 31 | Multiple Choice | D | 1 | CCSS.Math.Content.3.MD.C.6 | Measurement and Data | CCSS.Math.Content.3.MD.C.5b | 0.89 | | |
| 32 | Multiple Choice | B | 1 | CCSS.Math.Content.3.NBT.A.1 | Number and Operations in Base Ten | | 0.67 | | |
| 33 | Multiple Choice | A | 1 | CCSS.Math.Content.3.MD.A.2 | Measurement and Data | | 0.60 | | |
| 34 | Multiple Choice | A | 1 | CCSS.Math.Content.3.G.A.2 | Geometry | | 0.89 | | |
| 38 | Multiple Choice | A | 1 | CCSS.Math.Content.3.MD.C.7a | Measurement and Data | CCSS.Math.Content.3.MD.C.7b | 0.59 | | |
| 39 | Multiple Choice | D | 1 | CCSS.Math.Content.3.OA.D.9 | Operations and Algebraic Thinking | | 0.41 | | |
| 40 | Multiple Choice | C | 1 | CCSS.Math.Content.3.OA.A.3 | Operations and Algebraic Thinking | | 0.81 | | |
| 41 | Multiple Choice | C | 1 | CCSS.Math.Content.3.NF.A.1 | Number and Operations—Fractions | | 0.58 | | |
| 42 | Multiple Choice | A | 1 | CCSS.Math.Content.3.OA.D.8 | Operations and Algebraic Thinking | | 0.59 | | |
| **Book 3** | | | | | | | | | |
| 45 | Constructed Response | | 2 | CCSS.Math.Content.3.NF.A.2 | Number and Operations—Fractions | | | 0.86 | 0.43 |
| 46 | Constructed Response | | 2 | CCSS.Math.Content.3.OA.B.5 | Operations and Algebraic Thinking | CCSS.Math.Content.3.OA.A.3 | | 1.27 | 0.63 |
| 47 | Constructed Response | | 2 | CCSS.Math.Content.3.MD.B.3 | Measurement and Data | CCSS.Math.Content.3.NF.A.1 | | 1.37 | 0.69 |
| 48 | Constructed Response | | 2 | CCSS.Math.Content.3.OA.A.2 | Operations and Algebraic Thinking | CCSS.Math.Content.3.OA.A.3 | | 0.49 | 0.24 |
| 49 | Constructed Response | | 2 | CCSS.Math.Content.3.MD.C.7c | Measurement and Data | CCSS.Math.Content.3.MD.C.7b | | 1.10 | 0.55 |
| 50 | Constructed Response | | 3 | CCSS.Math.Content.3.OA.A.3 | Operations and Algebraic Thinking | CCSS.Math.Content.3.OA.D.8 | | 1.12 | 0.37 |
| 51 | Constructed Response | | 3 | CCSS.Math.Content.3.NF.A.3b | Number and Operations—Fractions | CCSS.Math.Content.3.NF.A.3d, CCSS.Math.Content.3.NF.A.3a | | 1.59 | 0.53 |
| 52 | Constructed Response | | 3 | CCSS.Math.Content.3.OA.D.8 | Operations and Algebraic Thinking | CCSS.Math.Content.3.NBT.A.3 | | 1.01 | 0.34 |

*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.