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Our Students. Their Moment.

New York State Testing Program
Grade 4 Common Core
Mathematics Test

Released Questions

June 2017

New York State administered the Mathematics Common Core Tests in May 2017 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 2017 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 2017 NYS Grades 3-8 Common Core English Language Arts and Mathematics test materials for review, discussion, and use.

For 2017, included in these released materials are at least 75 percent of the test questions that appeared on the 2017 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.

Name: _____

New York State Testing Program

2017 Common Core Mathematics Test Book 1

Grade 4

May 2–4, 2017

Released Questions

Developed and published under contract with the New York State Education Department by Questar Assessment Inc., 5550 Upper 147th Street West, Minneapolis, 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 mathematics tools (a ruler and a protractor) to use during the test. It is up to you to decide when each tool will be helpful. You should use mathematics tools whenever you think they will help you to answer the question.

1 The population of a certain city is 836,527. What is the population of this city rounded to the nearest ten thousand?

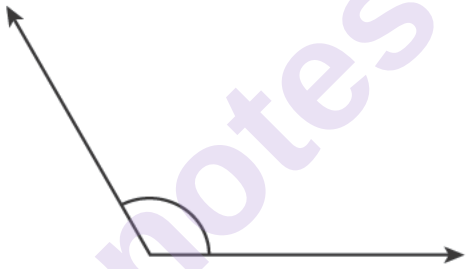
A 800,000

B 830,000

C 836,000

D 840,000

2 What is the measure of the angle shown below?



A 60°

B 90°

C 110°

D 120°

3 Which expression is equivalent to $\frac{7}{10} - \frac{2}{10}$?

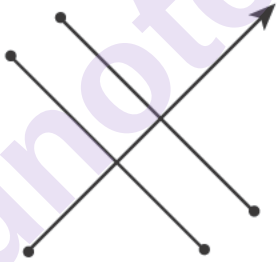
A $\frac{2}{10} + \frac{3}{10}$

B $\frac{5}{10} + \frac{4}{10}$

C $\frac{1}{5} + \frac{4}{5}$

D $\frac{3}{6} + \frac{2}{4}$

4 Which statement **best** describes the figure shown below?



A The ray appears to be perpendicular to 2 line segments that appear to be parallel.

B The ray appears to be parallel to 2 line segments that appear to be perpendicular.

C The line segment appears to be perpendicular to 2 lines that appear to be parallel.

D The line segment appears to be parallel to 2 lines that appear to be perpendicular.

5 What is the product of 32×67?

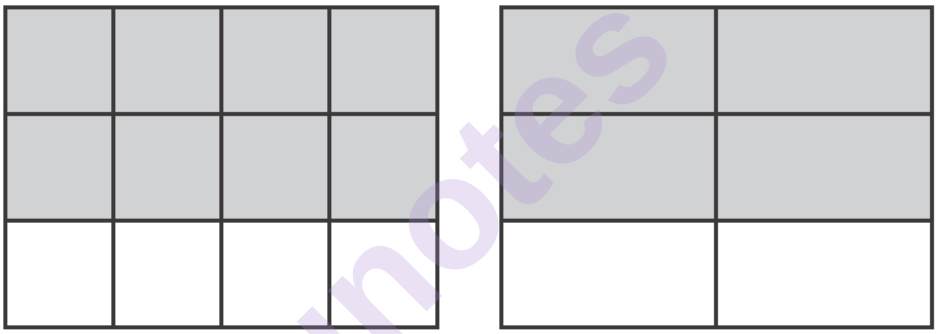
A 1,824

B 1,934

C 2,044

D 2,144

6 The models below are shaded to represent equivalent fractions.



Which fraction is equivalent to the fractions shown by the models?

A $\frac{2}{3}$

B $\frac{4}{8}$

C $\frac{6}{10}$

D $\frac{9}{12}$

7 What is the measure of an angle that turns through $\frac{3}{4}$ of a complete circle?

A 34°

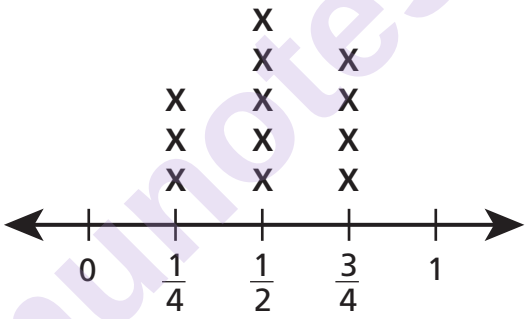
B 43°

C 75°

D 270°

8 Andrew is growing tomato plants in his garden. The line plot below shows the height of each tomato plant on Wednesday.

HEIGHTS OF TOMATO PLANTS



What was the difference in height between the tallest plant and the shortest plant?

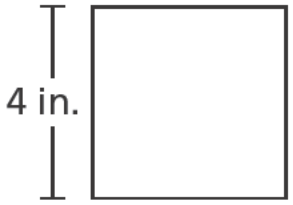
A $\frac{1}{4}$ foot

B $\frac{2}{4}$ foot

C $\frac{3}{4}$ foot

D $\frac{4}{4}$ foot

11 A square is shown below.



Kelsey drew a rectangle with the same area as the square. The length of Kelsey's rectangle is 8 inches. What is the perimeter, in inches, of Kelsey's rectangle?

A 10

B 16

C 20

D 32

12 Some bakers make apple pies.

- They have 15 boxes of apples.
- Each box has 18 apples.
- They use 7 apples for each pie.

What is the total number of apple pies that the bakers can make?

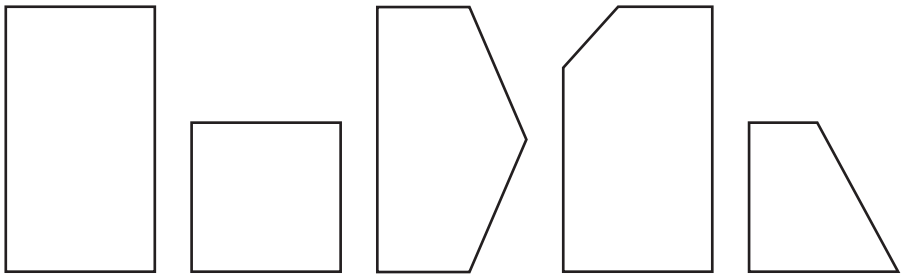
A 33

B 38

C 39

D 40

15 The shapes that each of 5 students drew are shown below.



Ashley **Camden** **Fiona** **George** **Hayden**

Which list has the names of all the students who drew quadrilaterals?

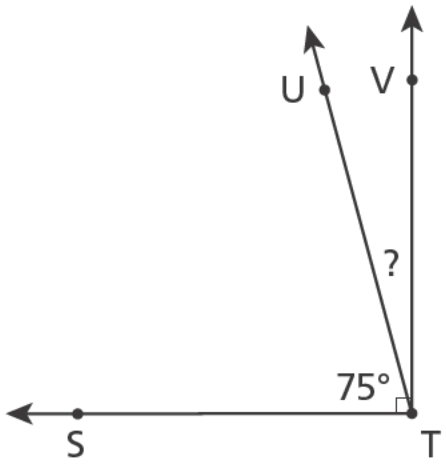
A Fiona and George

B Ashley and Camden

C Ashley, Camden, and Hayden

D Ashley, Camden, Fiona, and George

16 Angles STU and UTV combine to form right angle STV.



Which expression could be used to find the measure, in degrees, of angle UTV?

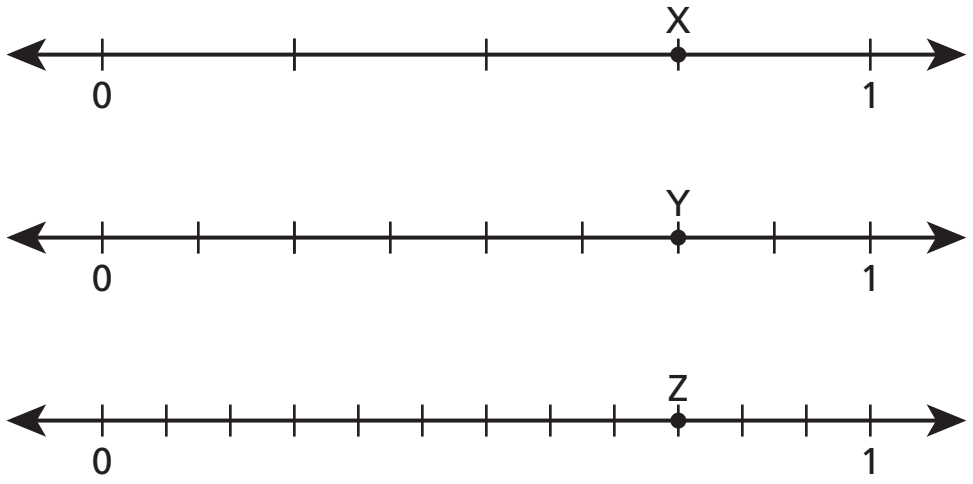
A $90 - 75$

B $90 + 75$

C $180 - 75$

D $180 + 75$

17 On the number lines shown below, points Y and Z represent fractions that are equivalent to the fraction represented by point X.



Which fractions do points Y and Z represent on the number lines?

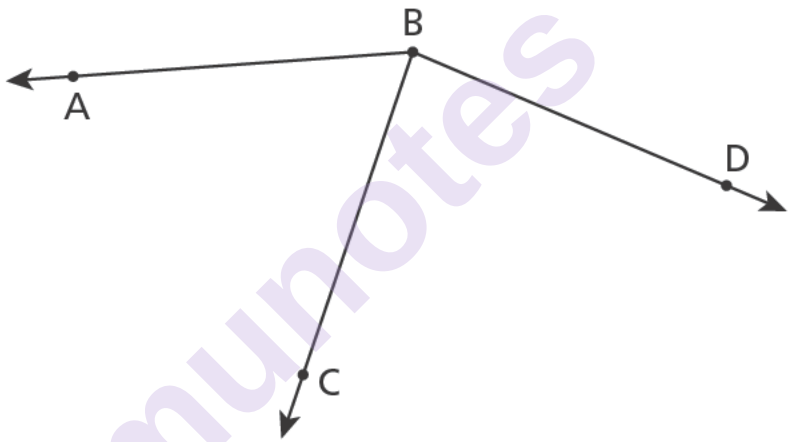
A Point Y represents $\frac{4}{6}$ and point Z represents $\frac{8}{12}$.

B Point Y represents $\frac{4}{6}$ and point Z represents $\frac{9}{12}$.

C Point Y represents $\frac{6}{8}$ and point Z represents $\frac{8}{12}$.

D Point Y represents $\frac{6}{8}$ and point Z represents $\frac{9}{12}$.

21 In the diagram below, angle ABD measures 153° and angle ABC measures 67°.



What is the measure of angle CBD?

A 84°

B 86°

C 94°

D 96°

22 What is the quotient of $1{,}224 \div 9$?

A 135

B 136

C 1,215

D 1,360

STOP

Grade 4
2017 Common Core Mathematics Test
Book 1
May 2–4, 2017

Name: _____

New York State Testing Program

2017 Common Core Mathematics Test Book 2

Grade 4

May 2–4, 2017

Released Questions

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

Book 2

TIPS FOR TAKING THE TEST

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23 Which number is a multiple of 7?

A 27

B 48

C 56

D 74

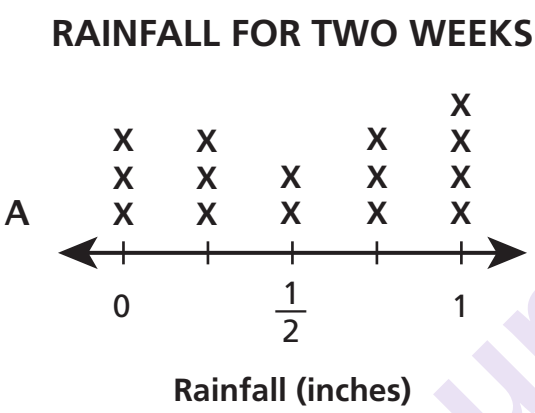
24 For a science project, Joseph recorded the amount of rainfall each day for 2 weeks. The table below shows his data.

RAINFALL FOR TWO WEEKS

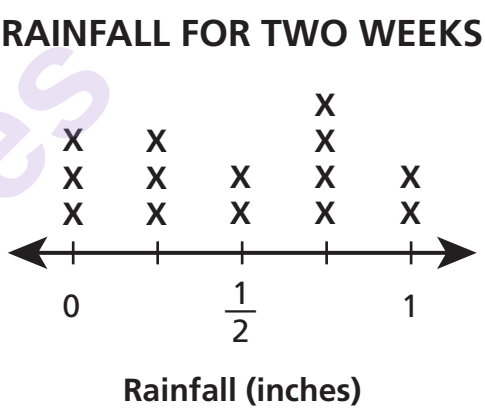
Inches of Rainfall	0	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1
Number of Days	3	3	2	4	2

Which line plot correctly displays Joseph's data?

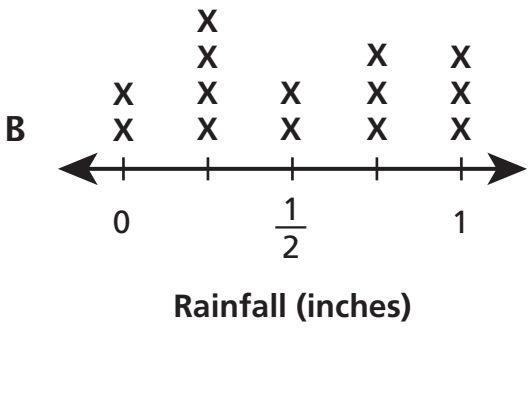
A



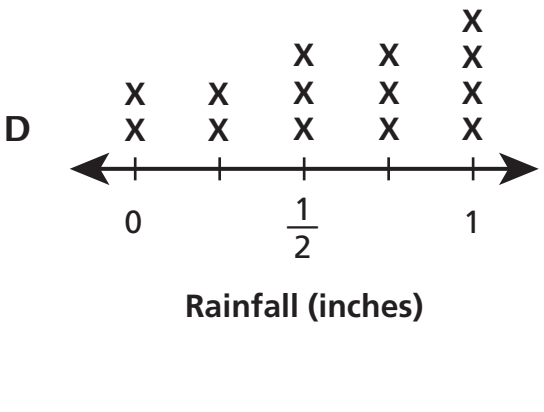
C



B



D



25 A student has 3 puzzles. Each puzzle has 1,250 pieces. What is the total number of pieces in the puzzles?

A 3,650

B 3,750

C 4,650

D 4,750

26 A baseball cap costs $8. A matching shirt costs 4 times as much as the cap. Which of the following can be used to determine the cost of the shirt?

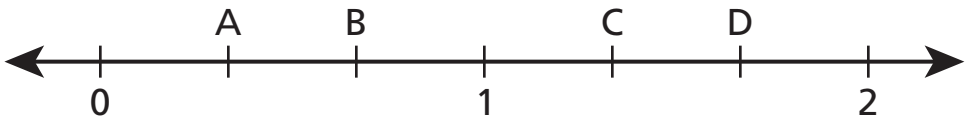
A $8 \div 2 = \underline{\ ?\ }$

B $8 - 4 = \underline{\ ?\ }$

C $8 + 4 = \underline{\ ?\ }$

D $8 \times 4 = \underline{\ ?\ }$

27 Which letter on the number line below represents a fraction equivalent to $\frac{4}{6}$?



A A

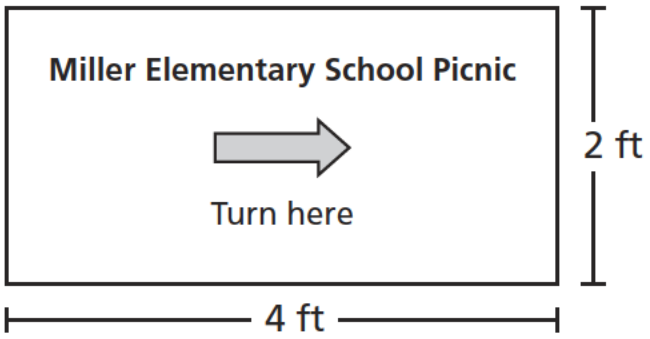
B B

C C

D D

GO ON

28 A rectangular sign is shown.



What is the perimeter, in feet, of the sign?

A 6

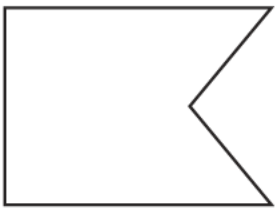
B 8

C 12

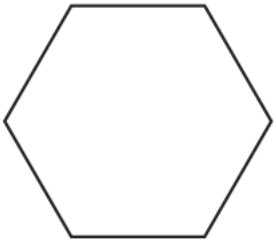
D 16

29 Which figure has exactly one line of symmetry?

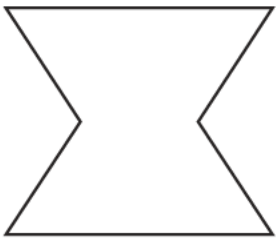
A



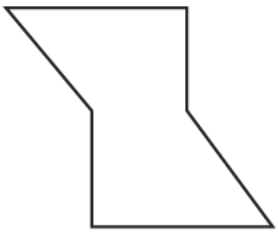
C



B



D



30 If a total of 762 students at a citywide competition are divided into 6 equal-sized teams, how many students are on each team?

A 110

B 120

C 127

D 137

31 At a neighborhood park, there are 11 spaces for bicycles on a rack by the basketball court. The bicycle rack by the playground has 3 times as many spaces for bicycles as the one by the basketball court. Which equation could be used to find the total number of bicycle spaces on the rack by the playground?

A $3 \times 11 = ?$

B $11 + 3 = ?$

C $11 \div ? = 3$

D $? + 3 = 11$

32 Melina walked $\frac{9}{12}$ mile each day for 5 days. What was the total distance, in miles, she walked in the 5 days?

A $\frac{9}{60}$

B $\frac{45}{60}$

C $\frac{14}{12}$

D $\frac{45}{12}$

GO ON

35 Rowan has 3 pieces of yarn, as described below.

- a red piece of yarn that is $\frac{3}{4}$ foot long
- a yellow piece of yarn that is $\frac{6}{8}$ foot long
- a blue piece of yarn that is $\frac{4}{12}$ foot long

Which number sentence correctly compares the lengths of 2 of these pieces of yarn?

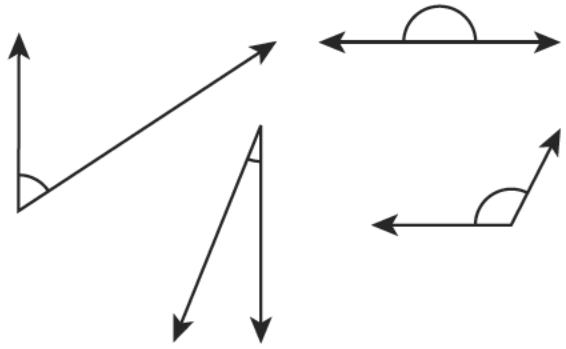
A $\frac{3}{4} < \frac{6}{8}$

B $\frac{4}{12} < \frac{3}{4}$

C $\frac{3}{4} > \frac{6}{8}$

D $\frac{4}{12} > \frac{6}{8}$

36 Four angles are shown below.



How many of these angles are acute?

A 1

B 2

C 3

D 4

37 Each time Rami turned the dial on a machine, the dial moved 1 degree. Rami turned the dial 10 times. What is the total number of degrees the dial moved?

A 10

B 90

C 110

D 360

40 Which method can be used to solve 11×13?

A Multiply 11×10 and 10×3, then add the two products.

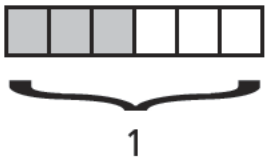
B Multiply 11×10 and 11×3, then add the two products.

C Multiply 11×100 and 10×3, then add the two products.

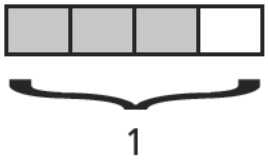
D Multiply 11×100 and 11×3, then add the two products.

41 Which model is shaded to represent a fraction that is equivalent to $\frac{9}{12}$?

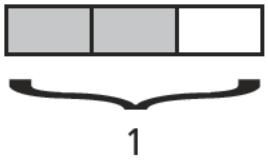
A



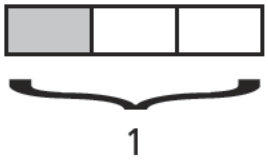
B



C



D



44 What is $123 \div 8$?

A 15 remainder 7

B 15 remainder 3

C 16 remainder 5

D 16 remainder 1

45 Becky and James have a total of $4\frac{2}{8}$ feet of yarn. Becky has $1\frac{5}{8}$ feet of yarn. How many feet of yarn does James have?

A $2\frac{5}{8}$

B $2\frac{7}{8}$

C $3\frac{3}{8}$

D $3\frac{5}{8}$

STOP

Grade 4
2017 Common Core Mathematics Test
Book 2
May 2–4, 2017

Name: _____

New York State Testing Program

2017 Common Core Mathematics Test Book 3

Grade 4

May 2–4, 2017

Released Questions

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Book 3

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- Be sure to show your work when asked.

46 A loaf of bread is cut into slices of equal size. Some of the loaf is used in a recipe and $\frac{2}{12}$ of the loaf is used to make a sandwich. The remaining $\frac{7}{12}$ of the loaf is put into the refrigerator.

Write and solve an equation to find the fraction of the loaf of bread that is used in the recipe.

Show your work.

Fraction _____

GO ON

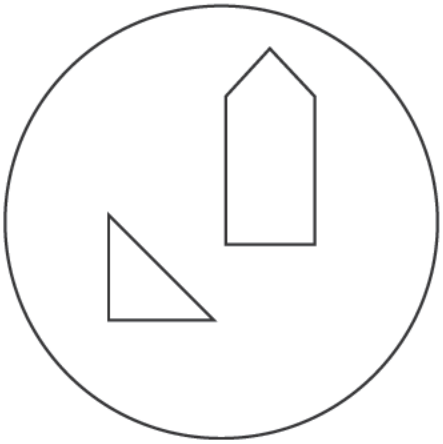
47 During a weekend sale, a store sold 85 DVDs for $19 each. What is the total amount of money, rounded to the nearest hundred, the store made by selling DVDs?

Show your work.

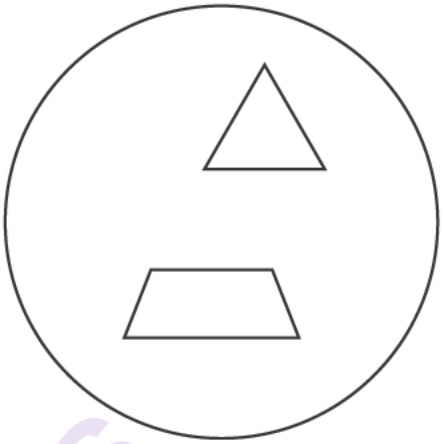
Answer $ _____

48 Jodi sorted shapes into two groups based on the types of angles they appear to have, as shown below.

Group A



Group B



What do both shapes in Group A have in common? What do both shapes in Group B have in common?

Group A _____

Group B _____

Into which group does the shape below belong?

Group _____

49 For a math project, Roxana made the table below to show the amount of time she spent doing different activities last weekend.

WEEKEND ACTIVITIES

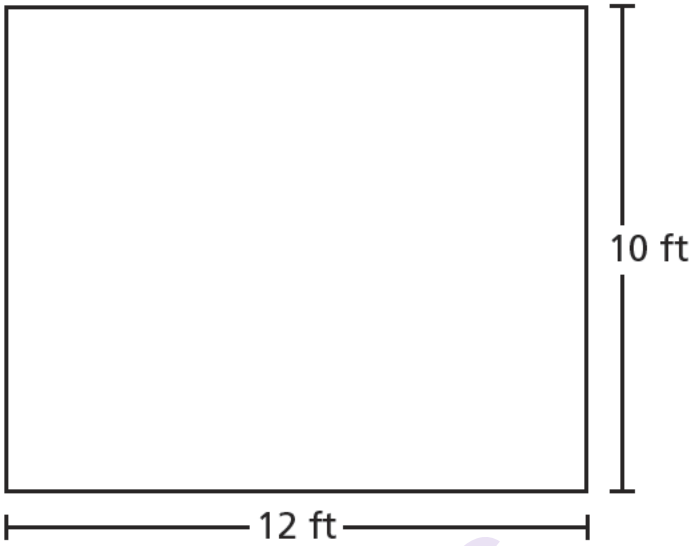
Activity	Time Spent (hours)
Dance Class	$\frac{6}{5}$
Reading	$\frac{4}{12}$
Soccer	$\frac{7}{8}$
Swimming	$\frac{2}{6}$

On which activities did Roxana spend more than $\frac{1}{2}$ an hour? Explain how you know which activities took more than $\frac{1}{2}$ an hour.

Show your work.

Answer

50 The figure below represents a play space that Logan fenced in for his dog.



Logan is getting a second dog and wants to increase the length of the play space by 3 feet and the width by 3 feet. What will be the difference in the area, in square feet, between the original play space and the new play space?

Show your work.

Answer _____ square feet

GO ON

51 Aisha and Dave play the same computer game and compare their highest score each morning. Today, Aisha said that she scored thirty thousand twenty-five points, and Dave said that he scored thirty thousand two hundred five points.

Write a number sentence using one of the symbols, $>$, $<$, or $=$, to correctly compare Aisha's number of points to Dave's number of points.

Answer _____

52 Sam was in a contest at the library to read as many books as he could in three months. At the end of the contest he earned 2 tickets for each book he read. The table below shows the number of books Sam read each month.

BOOKS SAM READ

Month	Number of Books
January	15
February	13
March	16

Sam was able to buy 1 prize for every 5 tickets he had earned. Sam bought as many prizes as he could with his tickets. How many prizes was Sam able to buy?

Show your work and explain your answer.

Answer _____ prizes

GO ON

53 A tree farmer planted 3 types of trees on 22 acres of land. He planted 48 trees per acre. What was the total number of trees the farmer planted?

Show your work.

Answer _____ trees

The farmer planted an equal number of each type of tree. Oak trees were one of the 3 types of trees planted. What was the total number of oak trees planted?

Answer _____ oak trees

54 The table below shows the sizes and weights of containers of potato salad sold at a store.

POTATO SALAD

Size	Weight (pounds)
Small	$\frac{2}{8}$
Medium	$\frac{3}{8}$
Large	$\frac{6}{8}$
Extra Large	$\frac{9}{8}$

Kim purchased 6 small containers of potato salad and Seth purchased 2 extra large containers of potato salad. What is the difference in the weights, in pounds, of Kim's and Seth's purchases?

Show your work.

Answer _____ pounds

GO ON

55 Bill is shopping for folders, notebooks, and pencils for the first day of school. A notebook costs 4 times as much as a folder. A notebook costs 2 times as much as a set of pencils. Each folder costs $2. Determine the total cost for 1 folder, 1 notebook, and 1 set of pencils.

Show your work.

Answer $ _____

STOP

Grade 4
2017 Common Core Mathematics Test
Book 3
May 2–4, 2017

THE STATE EDUCATION DEPARTMENT
THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234
2017 Mathematics Tests Map to the Standards
Released Questions on EngageNY

Grade 4

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	D	1	CCSS.Math.Content.4.NBT.A.3	Number and Operations in Base Ten		0.73		
2	Multiple Choice	D	1	CCSS.Math.Content.4.MD.C.6	Measurement and Data		0.78		
3	Multiple Choice	A	1	CCSS.Math.Content.4.NF.B.3a	Number and Operations— Fractions		0.74		
4	Multiple Choice	A	1	CCSS.Math.Content.4.G.A.1	Geometry		0.59		
5	Multiple Choice	D	1	CCSS.Math.Content.4.NBT.B.5	Number and Operations in Base Ten		0.74		
6	Multiple Choice	A	1	CCSS.Math.Content.4.NF.A.1	Number and Operations— Fractions		0.59		
7	Multiple Choice	D	1	CCSS.Math.Content.4.MD.C.5a	Measurement and Data		0.62		
8	Multiple Choice	B	1	CCSS.Math.Content.4.MD.B.4	Measurement and Data		0.61		
11	Multiple Choice	C	1	CCSS.Math.Content.4.MD.A.3	Measurement and Data		0.32		
12	Multiple Choice	B	1	CCSS.Math.Content.4.OA.A.3	Operations and Algebraic Thinking		0.44		
15	Multiple Choice	C	1	CCSS.Math.Content.3.G.A.1	Geometry		0.55		
16	Multiple Choice	A	1	CCSS.Math.Content.4.MD.C.7	Measurement and Data		0.71		
17	Multiple Choice	D	1	CCSS.Math.Content.4.NF.A.1	Number and Operations— Fractions		0.66		
21	Multiple Choice	B	1	CCSS.Math.Content.4.MD.C.7	Measurement and Data		0.55		
22	Multiple Choice	B	1	CCSS.Math.Content.4.NBT.B.6	Number and Operations in Base Ten		0.71		
Book 2									
23	Multiple Choice	C	1	CCSS.Math.Content.4.OA.B.4	Operations and Algebraic Thinking		0.83		

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24	Multiple Choice	C	1	CCSS.Math.Content.4.MD.B.4	Measurement and Data		0.81		
25	Multiple Choice	B	1	CCSS.Math.Content.4.NBT.B.5	Number and Operations in Base Ten		0.88		
26	Multiple Choice	D	1	CCSS.Math.Content.4.OA.A.1	Operations and Algebraic Thinking		0.93		
27	Multiple Choice	B	1	CCSS.Math.Content.4.NF.A.1	Number and Operations— Fractions		0.36		
28	Multiple Choice	C	1	CCSS.Math.Content.3.MD.D.8	Measurement and Data		0.76		
29	Multiple Choice	A	1	CCSS.Math.Content.4.G.A.3	Geometry		0.66		
30	Multiple Choice	C	1	CCSS.Math.Content.4.NBT.B.6	Number and Operations in Base Ten		0.77		
31	Multiple Choice	A	1	CCSS.Math.Content.4.OA.A.2	Operations and Algebraic Thinking		0.92		
32	Multiple Choice	D	1	CCSS.Math.Content.4.NF.B.4c	Number and Operations— Fractions		0.70		
35	Multiple Choice	B	1	CCSS.Math.Content.4.NF.A.2	Number and Operations— Fractions		0.59		
36	Multiple Choice	B	1	CCSS.Math.Content.4.G.A.1	Geometry		0.70		
37	Multiple Choice	A	1	CCSS.Math.Content.4.MD.C.5b	Measurement and Data		0.88		
40	Multiple Choice	B	1	CCSS.Math.Content.4.NBT.B.5	Number and Operations in Base Ten		0.66		
41	Multiple Choice	B	1	CCSS.Math.Content.4.NF.A.1	Number and Operations— Fractions		0.61		
44	Multiple Choice	B	1	CCSS.Math.Content.4.NBT.B.6	Number and Operations in Base Ten		0.76		
45	Multiple Choice	A	1	CCSS.Math.Content.4.NF.B.3c	Number and Operations— Fractions		0.41		

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Book 3									
46	Constructed Response		2	CCSS.Math.Content.4.NF.B.3d	Number and Operations— Fractions			0.86	0.43
47	Constructed Response		2	CCSS.Math.Content.4.NBT.B.5	Number and Operations in Base Ten			1.04	0.52
48	Constructed Response		2	CCSS.Math.Content.4.G.A.1	Geometry			1.11	0.55
49	Constructed Response		2	CCSS.Math.Content.4.NF.A.2	Number and Operations— Fractions			0.97	0.48
50	Constructed Response		2	CCSS.Math.Content.4.MD.A.3	Measurement and Data			0.65	0.32
51	Constructed Response		2	CCSS.Math.Content.4.NBT.A.2	Number and Operations in Base Ten			1.56	0.78
52	Constructed Response		3	CCSS.Math.Content.4.OA.A.3	Operations and Algebraic Thinking			1.59	0.53
53	Constructed Response		3	CCSS.Math.Content.4.NBT.B.5	Number and Operations in Base Ten			1.38	0.46
54	Constructed Response		3	CCSS.Math.Content.4.NF.B.4b	Number and Operations— Fractions	CCSS.Math.Content.4.NF.B.4c		1.56	0.52
55	Constructed Response		3	CCSS.Math.Content.4.OA.A.2	Operations and Algebraic Thinking			1.74	0.58

*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.