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Our Students. Their Moment.

New York State Testing Program
Grade 6
Mathematics Test

Released Questions

June 2019

New York State administered the Mathematics Tests in May 2019
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 2019 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 2019 NYS Grades 3-8 English Language Arts and Mathematics test materials for review, discussion, and use.

For 2019, included in these released materials are at least 75 percent of the test questions that appeared on the 2019 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-andmathematics.

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

2019 Mathematics Test Session 1

Grade 6

May 1–3, 2019

RELEASED QUESTIONS

Grade 6 Mathematics Reference Sheet

CONVERSIONS

1 inch = 2.54 centimeters	1 kilometer = 0.62 mile	1 cup = 8 fluid ounces
1 meter = 39.37 inches	1 pound = 16 ounces	1 pint = 2 cups
1 mile = 5,280 feet	1 pound = 0.454 kilogram	1 quart = 2 pints
1 mile = 1,760 yards	1 kilogram = 2.2 pounds	1 gallon = 4 quarts
1 mile = 1.609 kilometers	1 ton = 2,000 pounds	1 gallon = 3.785 liters
		1 liter = 0.264 gallon
		1 liter = 1,000 cubic centimeters

FORMULAS

|	
Triangle	$A = \dfrac{1}{2}bh$
Right Rectangular Prism	$V = Bh$ or $V = lwh$

Session 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 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 Which coordinate plane shows a polygon with four vertices graphed at $(-5, 5)$, $(2, 4)$, $(6, -2)$, and $(-3, -6)$?

A

B

C

D
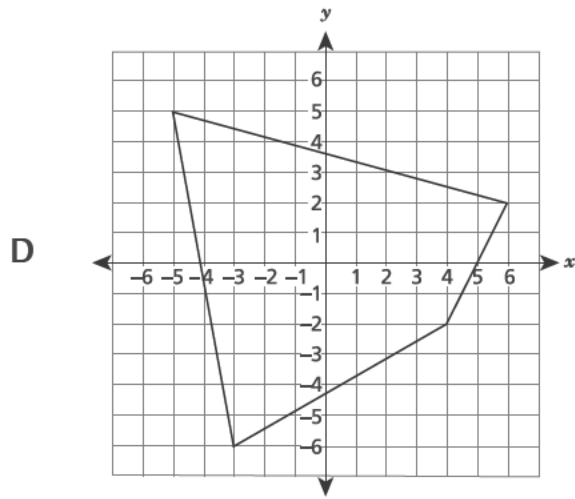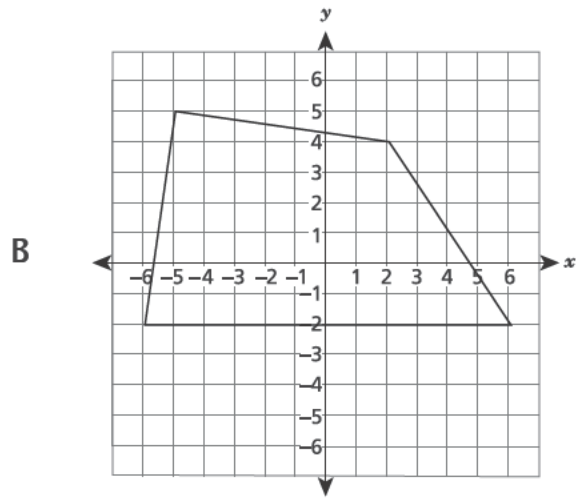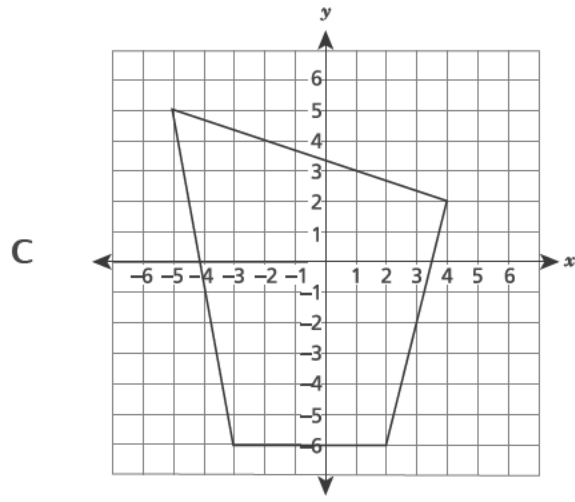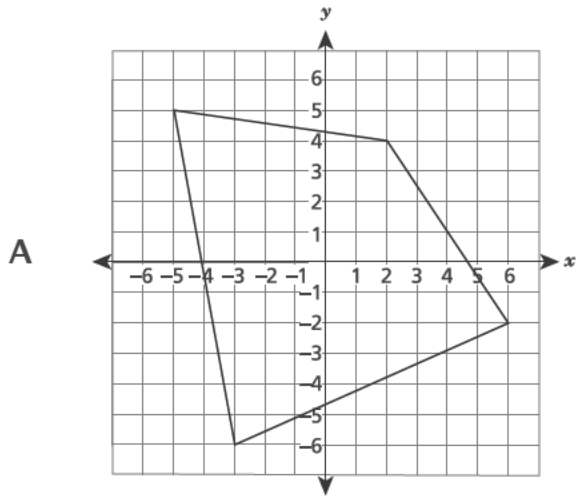
2 What is the value of the expression $\dfrac{3^2 \cdot (2^3 + 4)}{2^2}$?

A   10

B   15

C   19

D   27

3 The grid shown below is in the shape of a rectangle.
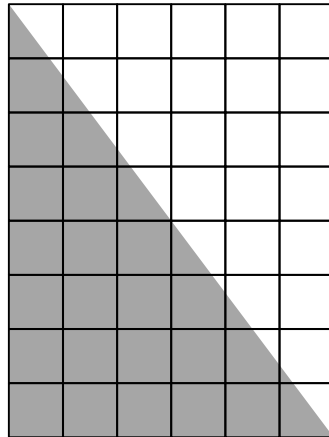
What is the area, in square units, of the shaded part of the rectangle?

A   14

B   24

C   28

D   48

4 Debnil has 6 teaspoons of salt. The ratio of teaspoons to tablespoons is $3 : 1$. How many tablespoons of salt does Debnil have?

A $\dfrac{1}{18}$

B $\dfrac{1}{2}$

C 2

D 18

GO ON

7 Which expression is equivalent to the phrase shown below?

the quotient of the sum of $2t$ and 2, and twice the cube of s

A $2t + \dfrac{2}{3s^2}$

B $2t + \dfrac{2}{2s^3}$

C $\dfrac{2t + 2}{3s^2}$

D $\dfrac{2t + 2}{2s^3}$

10 A custodian plans to repaint some classroom bookcases. She has $5\frac{1}{4}$ gallons of paint. All of the bookcases are the same size and each requires $\frac{3}{4}$ gallon of paint. How many bookcases will the custodian be able to repaint with that amount of paint?

A   3

B   4

C   7

D   15

GO ON

13 Carly purchased $9\frac{1}{2}$ pints of ice cream for a party. If each guest will be served exactly $\frac{3}{5}$ pint of ice cream, what is the greatest number of guests that Carly can serve?

A   5

B   9

C   15

D   16

16 At a bus station, buses begin their routes at 6:00 a.m. The schedule for two of the buses is based on the time intervals listed below.

- Bus A has a long route and leaves the station every 75 minutes.

- Bus B has a short route and leaves the station every 15 minutes.

What is the next time Bus A and Bus B will leave the bus station at the same time?

A   7:00 a.m.

B   7:15 a.m.

C   7:30 a.m.

D   8:30 a.m.

17 Which number has an absolute value greater than 5 ?

A -6

B -5

C 0

D 5

GO ON

26 A bakery made 9 cakes using 3 bags of flour. The bakery uses the same relationship between cakes made and the amount of flour used to make all of their cakes. Which table of values shows the relationship between the number of cakes the bakery makes to the number of bags of flour the bakery uses?

A

CAKES BAKED

Cakes	1	2	3	4	5
Bags of Flour	3	6	9	12	15

C

CAKES BAKED

Cakes	7	8	9	10	11
Bags of Flour	1	2	3	4	5

B

CAKES BAKED

Cakes	3	6	9	12	15
Bags of Flour	1	2	3	4	5

D

CAKES BAKED

Cakes	1	2	3	4	5
Bags of Flour	7	8	9	10	11

27 The volume, V, of any cube with a side length, s, can be determined using the formula $V = s^3$. What is the volume, in cubic centimeters, of a cube with a side length of 2.3 centimeters?

A   5.29

B   6.9

C   8.027

D   12.167

GO ON

28 Mr. Tola has a piece of wood that is $8\frac{1}{4}$ feet in length. He wants to cut it into pieces that are each $\frac{3}{4}$ foot in length. How many $\frac{3}{4}$-foot pieces of wood can Mr. Tola make?

A 7

B 8

C 9

D 11

29 A zoo has 15 toucans and 60 parrots. What is the ratio of the number of toucans to the number of parrots at the zoo?

A 1 : 4

B 1 : 5

C 4 : 1

D 4 : 5

30 A restaurant used 231 eggs last week. Of these, 46 were brown in color. The remaining eggs were white in color. Which equation can be used to solve for w, the number of white eggs used last week?

A $231 + 46w = 0$

B $46 + w = 231$

C $w = 231 + 46$

D $231 = 46w$

31 Which expression is equivalent to $9(9m + 3t)$?

A $18m + 3t$

B $81m + 3t$

C $18m + 12t$

D $81m + 27t$

STOP

Grade 6
2019
Mathematics Test
Session 1
May 1–3, 2019

Name:_____

New York State Testing Program

2019
Mathematics Test
Session 2

Grade 6

May 1–3, 2019

RELEASED QUESTIONS

Grade 6 Mathematics Reference Sheet

CONVERSIONS

1 inch = 2.54 centimeters	1 kilometer = 0.62 mile	1 cup = 8 fluid ounces
1 meter = 39.37 inches	1 pound = 16 ounces	1 pint = 2 cups
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1 mile = 1,760 yards	1 kilogram = 2.2 pounds	1 gallon = 4 quarts
1 mile = 1.609 kilometers	1 ton = 2,000 pounds	1 gallon = 3.785 liters
		1 liter = 0.264 gallon
		1 liter = 1,000 cubic centimeters

FORMULAS

Triangle	$A = \frac{1}{2}bh$
Right Rectangular Prism	$V = Bh$ or $V = lwh$

Session 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 making your choice or writing your response.

- You have been provided with mathematics tools (a ruler, a protractor, and a calculator) 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.

32 Which set of values makes the inequality $n \geq -5$ true?

A $\{-5, -5.5, -6\}$

B $\{-5, -4.5, -3\}$

C $\{-6, 0, 5\}$

D $\{-6, -7, -8\}$

33 An ice cream shop sold 48 vanilla milkshakes in a day, which was 40% of the total number of milkshakes sold that day. What was the total number of milkshakes that the ice cream shop sold that day?

A 60

B 72

C 100

D 120

34 Which expression represents the phrase below?

3 fewer than a number, p

A $3 - p$

B $p \div 3$

C $3 \div p$

D $p - 3$

GO ON

35 What number is **not** part of the solution set to the inequality below?

$$w - 10 \le 16$$

A 11

B 15

C 26

D 27

36 The coordinates of the vertices of triangle ABC are $\mathrm{A}(1, -1)$, $\mathrm{B}(1, 4)$, and $\mathrm{C}(8, 4)$. What is the length, in units, of the line segment that connects vertex A and vertex B?

A 1

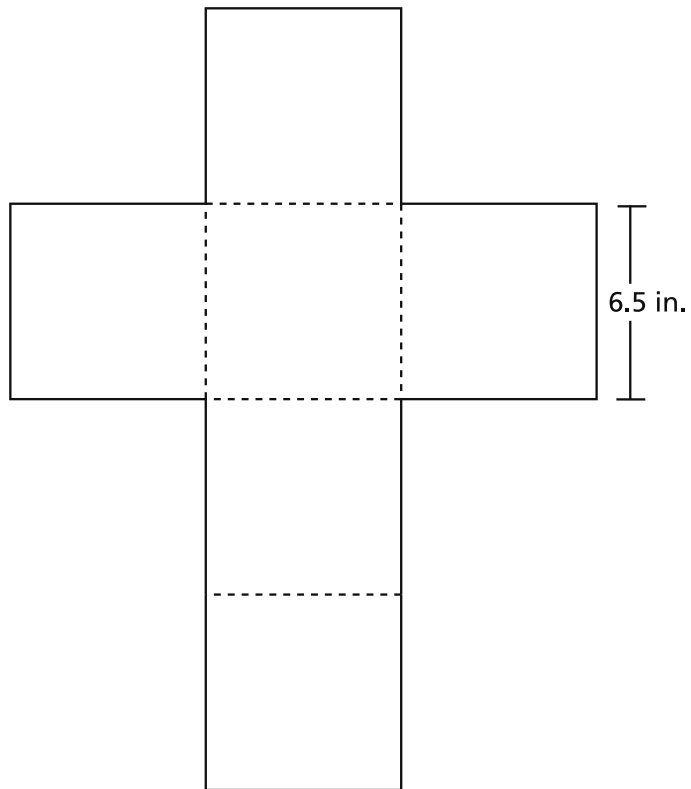**B** 4

C 5

D 7

37 Ken and Tami are making necklaces. Ken makes 25 necklaces. Tami makes m more necklaces than Ken. Which expression represents the total number of necklaces Ken and Tami made?

A $25 + (25 + m)$

B $25 + 25m$

C $25 + m$

D $25m$

38 Kira decorates the exterior faces of a gift box in the shape of a cube. The figure below shows the net of the gift box.

NET OF KIRA'S GIFT BOX

6.5 in.

What is the surface area, in square inches, of the gift box that Kira decorates?
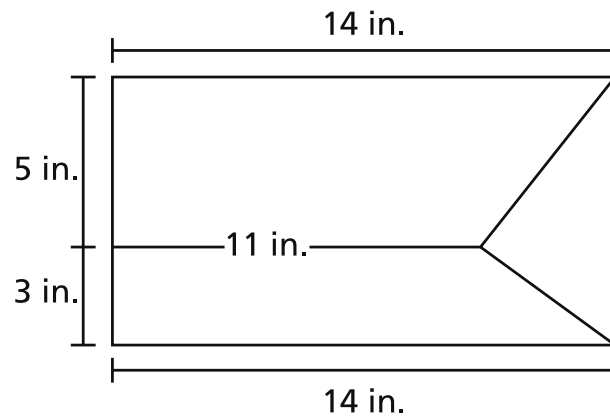
A   91.0

B   169.0

C   253.5

D   274.6

GO ON

39 David made a class banner out of a large rectangular piece of paper. He cut a triangular piece out of one side, as pictured below.

What is the area, in square inches, of the banner?

Show your work.

Answer _____ square inches

40 Abdi has two electric train sets: A and B. Each train is on its own circular track. He starts both trains at the same time. Train A returns to its starting point every 12 seconds. Train B returns to its starting point every 9 seconds. If the trains continue traveling, what is the **least** amount of time, in seconds, that both trains will arrive at the starting points at the same time?

Show your work.

Answer _____ seconds

GO ON

41 Winston earns $140.00 by selling 56 hot dogs at a concession stand at school. Using the same rate for the cost of one hot dog, how many more hot dogs would Winston need to sell to earn a total of $175.00?

Show your work.

Answer _____ hot dogs

42 At the end of a baseball game, the players were given the choice of having a bottle of

water or a box of juice. Of all of the players, 12 chose a bottle of water, which was

$\frac{3}{4}$ of the total number of players. Write and solve an equation to determine p,

the total number of players at the baseball game.

Show your work.

Answer _____ players

43 Tristan is comparing two number patterns based on the information below.

- Both patterns start with the number 1.

- Pattern A follows the rule "add 3".

- Pattern B follows the rule "add 4".

How do each of the first 5 terms in Pattern A compare to the first 5 terms in Pattern B ?
As part of your answer, list the first 5 terms of each pattern.

Explain your answer.

_____

_____

_____

44 Mr. Jackson orders lunches to be delivered to his workplace for himself and some coworkers. The cost of each lunch is $6.25. There is also a one-time delivery fee of $3.50 to deliver the lunches. What expression could Mr. Jackson use to find the cost of ordering *n* lunches?

Expression _____

Use your expression to find the total cost of delivering 5 lunches.

Show your work.

Answer $ _____

45　A recipe uses $1\frac{1}{4}$ cups of milk to make 10 servings. If the same amount of milk is used for each serving, how many servings can be made using 1 gallon of milk?

Show your work.

Answer _____ servings

46   A store sells two different packages of glue sticks as described below.

- Package A: 18 glue sticks

- Package B: 12 glue sticks

Write an equation for Package A and an equation for Package B that represent the total number of glue sticks, g, in p packages.

Package A _____

Package B _____

Mr. Davis buys 5 packages of the Package A glue sticks. Ms. Wilson buys 8 packages of the Package B glue sticks. Use your equations to find the difference in the total number of glue sticks that each person purchased.

Show your work.

Answer _____ glue sticks

STOP

Grade 6
2019
Mathematics Test
Session 2
May 1–3, 2019

THE STATE EDUCATION DEPARTMENT
THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234
2019 Mathematics Tests Map to the Standards
Grade 6 Released Questions on EngageNY

Question	Type	Key	Points	Standard	Cluster	Multiple Choice Questions: Percentage of Students Who Answered Correctly (P-Value)	Constructed Response Questions: Average Points Earned	P-Value (Average Points Earned ÷ Total Possible Points)
Session 1								
1	Multiple Choice	A	1	CCSS.Math.Content.6.G.A.3	Geometry	0.76		
2	Multiple Choice	D	1	CCSS.Math.Content.6.EE.A.1	Expressions and Equations	0.71		
3	Multiple Choice	B	1	CCSS.Math.Content.6.G.A.1	Geometry	0.62		
4	Multiple Choice	C	1	CCSS.Math.Content.6.RP.A.3d	Ratios and Proportional Relationships	0.64		
7	Multiple Choice	D	1	CCSS.Math.Content.6.EE.A.2a	Expressions and Equations	0.53		
10	Multiple Choice	C	1	CCSS.Math.Content.6.NS.A.1	The Number System	0.72		
13	Multiple Choice	C	1	CCSS.Math.Content.6.NS.A.1	The Number System	0.56		
16	Multiple Choice	B	1	CCSS.Math.Content.6.NS.B.4	The Number System	0.61		
17	Multiple Choice	A	1	CCSS.Math.Content.6.NS.C.7d	The Number System	0.6		
26	Multiple Choice	B	1	CCSS.Math.Content.6.RP.A.3a	Ratios and Proportional Relationships	0.7		
27	Multiple Choice	D	1	CCSS.Math.Content.6.EE.A.2c	Expressions and Equations	0.42		
28	Multiple Choice	D	1	CCSS.Math.Content.6.NS.A.1	The Number System	0.65		
29	Multiple Choice	A	1	CCSS.Math.Content.6.RP.A.1	Ratios and Proportional Relationships	0.62		
30	Multiple Choice	B	1	CCSS.Math.Content.6.EE.B.7	Expressions and Equations	0.7		
31	Multiple Choice	D	1	CCSS.Math.Content.6.EE.A.3	Expressions and Equations	0.61		
Session 2								
32	Multiple Choice	B	1	CCSS.Math.Content.6.EE.B.5	Expressions and Equations	0.57		
33	Multiple Choice	D	1	CCSS.Math.Content.6.RP.A.3c	Ratios and Proportional Relationships	0.72		
34	Multiple Choice	D	1	CCSS.Math.Content.6.EE.A.2a	Expressions and Equations	0.63		
35	Multiple Choice	D	1	CCSS.Math.Content.6.EE.B.5	Expressions and Equations	0.61		
36	Multiple Choice	C	1	CCSS.Math.Content.6.G.A.3	Geometry	0.6		
37	Multiple Choice	A	1	CCSS.Math.Content.6.EE.B.6	Expressions and Equations	0.36		
38	Multiple Choice	C	1	CCSS.Math.Content.6.G.A.4	Geometry	0.51		
39	Constructed Response		2	CCSS.Math.Content.6.G.A.1	Geometry		0.68	0.34
40	Constructed Response		2	CCSS.Math.Content.6.NS.B.4	The Number System		1.27	0.63

41	Constructed Response		2	CCSS.Math.Content.6.RP.A.2	Ratios and Proportional Relationships		0.93	0.46
42	Constructed Response		2	CCSS.Math.Content.6.EE.B.7	Expressions and Equations		0.82	0.41
43	Constructed Response		2	CCSS.Math.Content.5.OA.B.3	Expressions and Equations		0.7	0.35
44	Constructed Response		2	CCSS.Math.Content.6.EE.A.2a	Expressions and Equations		0.99	0.49
45	Constructed Response		2	CCSS.Math.Content.6.RP.A.3d	Ratios and Proportional Relationships		0.41	0.21
46	Constructed Response		3	CCSS.Math.Content.6.EE.C.9	Expressions and Equations		1.62	0.54

*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.