Name: _____

New York State Testing Program

2016 Common Core Mathematics Test Book 1

Grade 7

April 13–15, 2016

Released Questions

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) 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.
- Plan your time.

1 The drawing of a building, shown below, has a scale of 1 inch to 30 feet.

1.25 in.

0.75 in.
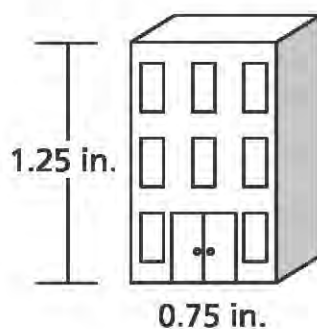
What is the actual height, in feet, of the building?

A 22.5

B 24

C 37.5

D 40

2 What is the value of the expression below?

$$-0.75 - \left(-\frac{2}{5}\right) + 0.4 + \left(-\frac{3}{4}\right)$$

A −1.5

B −0.7

C 0.8

D 2.3

7 Lehana and Marty each opened a savings account with a deposit of $100.

- Lehana earned 2.5% simple interest per year.

- Marty earned 2% simple interest per year.

- Neither of them made additional deposits or withdrawals.

How much more did Lehana receive in interest than Marty after three years?

A $0.50

B $1.50

C $5.00

D $15.00

8 Addison wants to ride her bicycle more than 80 miles this week. She has already ridden her bicycle 18 miles. Which inequality could be used to determine the mean number of miles, *m*, she would need to ride her bicycle each day for six more days to achieve her goal?

A $6m + 18 < 80$

B $6m - 18 < 80$

C $6m + 18 > 80$
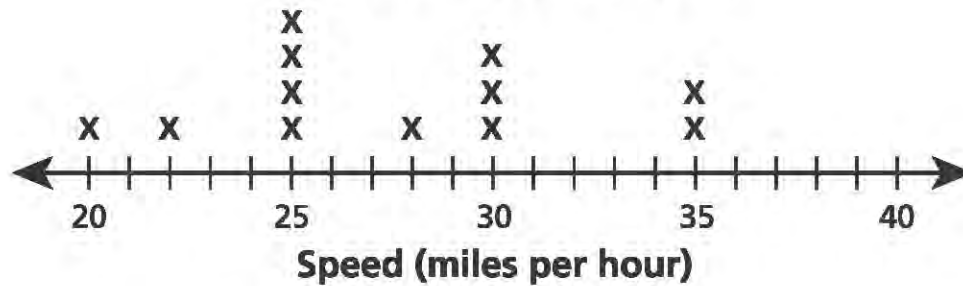
D $6m - 18 > 80$

GO ON

9 An electronic sign that showed the speed of motorists was installed on a road. The line plots below show the speeds of some motorists before and after the sign was installed.

BEFORE SIGN INSTALLATION

Speed (miles per hour)
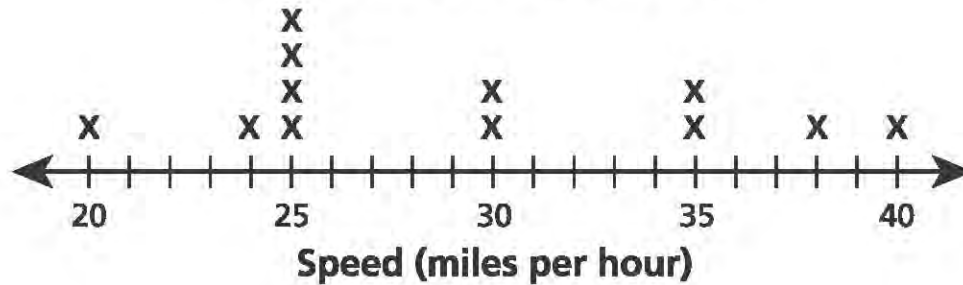
AFTER SIGN INSTALLATION

Speed (miles per hour)

Based on these data, which statement is true about the speeds of motorists after the sign was installed?

A The mean speed and the range of the speeds of the motorists decreased.

B The median speed and the range of the speeds of the motorists increased.

C The mean speed of the motorists decreased and the range of the speeds increased.

D The median speed of the motorists increased and the range of the speeds decreased.

10 A number, n, is multiplied by $-\frac{5}{8}$. The product is -0.4. What is the value of n?
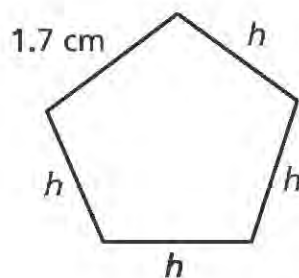
A $-\frac{16}{25}$

B $-\frac{1}{4}$

C $\frac{1}{4}$

D $\frac{16}{25}$

11 The perimeter of a certain pentagon is 10.5 centimeters. Four sides of this pentagon have the same length, in centimeters, h, and the other side has a length of 1.7 centimeters, as shown below.


What is the value of h?

A 2.2

B 3.7

C 4.8

D 8.8

GO ON

12 A school principal wants to determine which type of speaker the students prefer to invite to an assembly for the entire student population. Which survey method would produce the **best** representative sample?

A survey every fifth person who shops at a mall

B survey all of the students on the student council

C survey every tenth student entering the school one morning

D survey all of the students who went to the last basketball game

13 Henry has a fair number pyramid with four faces and a spinner with three equal-sized colored sections. The possible outcomes for each are shown below.

Number Pyramid

1   2   3   4

Spinner

Red   Blue   Green
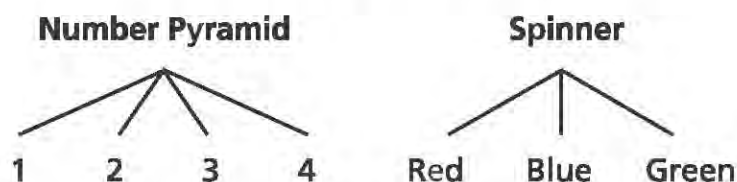
What is the probability that the number pyramid will land on three and the spinner will stop on blue?

A $\frac{1}{12}$

B $\frac{3}{12}$

C $\frac{4}{12}$

D $\frac{7}{12}$

14 A company ordered 10 boxed lunches from a deli for $74.50. Each boxed lunch cost the same amount. Which equation represents the proportional relationship between y, the total cost of the boxed lunches, and x, the number of boxed lunches?

A $7.45x = y$

B $\dfrac{7.45}{x} = \dfrac{10}{y}$

C $74.50x = y$

D $\dfrac{74.50}{x} = \dfrac{10}{y}$

15 What is the value of the expression $\dfrac{\left(\dfrac{2}{3} - \dfrac{5}{6}\right)}{\dfrac{3}{4}}$?

A $-\dfrac{2}{9}$

B $-\dfrac{1}{8}$

C $\dfrac{1}{8}$

D $\dfrac{2}{9}$

16 Which event is **most** likely to occur?

A flipping a fair coin, with sides labeled heads and tails, and the coin landing on tails

B choosing a marble out of a bag, with nine blue marbles and one red marble, and the marble being red

C rolling a fair number cube, with faces labeled one to six, and the cube landing on a number less than six

D spinning the arrow on a spinner, with four equal sectors labeled one to four, and the arrow landing on a number greater than one

GO ON

20 A trailer will be used to transport several 40-kilogram crates to a store. The greatest amount of weight that can be loaded onto the trailer is 1,050 kilograms. An 82-kilogram crate has already been loaded onto the trailer. What is the greatest number of 40-kilogram crates that can also be loaded onto the trailer?

    A 24

    B 25

    C 26

    D 27

21 What is the value of the expression?

$$\frac{8}{15} \div (-0.35)$$

    A $-\frac{75}{14}$

    B $-\frac{32}{21}$

    C $-\frac{21}{32}$

    D $-\frac{14}{75}$

22 What is the value of the expression below?

$$\left(3\frac{1}{2} - 9\frac{3}{4}\right) \div (-2.5)$$

    A -2.5

    B -2.3

    C 2.3

    D 2.5

GO ON

Grade 7
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 7

April 13–15, 2016

Released Questions

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 mathematics tools (a ruler, protractor, and 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.
- Plan your time.

27 Which expression is equivalent to $4 - (-7)$?

A $7 + 4$

B $4 - 7$

C $-7 - 4$

D $-4 + 7$

28 The elevation at ground level is 0 feet. An elevator starts 90 feet below ground level. After traveling for 15 seconds, the elevator is 20 feet below ground level. Which statement describes the elevator's rate of change in elevation during this 15-second interval?

A The elevator traveled upward at a rate of 6 feet per second.

B The elevator traveled upward at a rate of $4\frac{2}{3}$ feet per second.

C The elevator traveled downward at a rate of 6 feet per second.

D The elevator traveled downward at a rate of $4\frac{2}{3}$ feet per second.

29 Which expression represents the product of 3 and $\left(\frac{5}{4}n + 1.8\right)$?

A $5.55n$

B $9.15n$

C $3.75n + 1.8$

D $3.75n + 5.4$

GO ON

33 Mike took a taxi from his home to the airport. The taxi driver charged an initial fee of $6 plus $3 per mile. The total fare was $24, not including the tip. How many miles did Mike travel by taxi on this ride?

A 2

B 6

C 8

D 10

34 The original selling price of a share of stock was d dollars. The selling price for a share of the same stock at a later date was represented by the expression **1.15(0.95d)**. Which description could explain what happened to the price of the share of stock?

A The price decreased by 5% and then increased by 0.15%.

B The price decreased by 95% and then increased by 0.15%.

C The price decreased by 5% and then increased by 15%.

D The price decreased by 95% and then increased by 15%.

35 A clothing store used the sign shown below to advertise a discount on shirts.

<div style="border:1px solid">

DISCOUNT

Buy Two Shirts

Get 50% Off Third Shirt

</div>

Ky wants to buy three shirts, which were originally priced $49.96 each. The store will discount the price of the third shirt and then apply a 7.1% tax to the total cost of all three shirts. Including the tax, what will be the mean cost of each shirt?

A $41.99

B $42.70

C $44.59

D $45.18

GO ON

36 The results for a survey of 120 students who were selected randomly are listed below:

- 60 students have a cell phone plan with company X
- 36 students have a cell phone plan with company Y
- 24 students do not have a cell phone

The total population of students was 380. Based on the data, what is the **best** approximation for the total number of students who have a cell phone plan with company Y?

A 114

B 127

C 143

D 163

37 Wallpaper was applied to one rectangular wall of a large room. The dimensions of the wall are shown below.

42 feet

25.5 feet
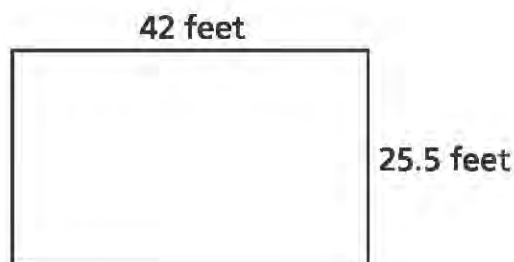
If the total cost of the wallpaper was $771.12, what was the cost, in dollars, of the wallpaper per square foot?

A $0.61

B $0.72

C $1.39

D $1.65

GO ON

38. Three friends own a landscaping business. The number of hours each friend spent on the same project is shown in the table below.

HOURS WORKED ON LANDSCAPING PROJECT

Name	Hours Worked
Edgar	$17\frac{1}{4}$
Kelly	$18\frac{1}{4}$
Shawn	$14\frac{1}{2}$

In total, they earned $850 for the job. They put 15% of this amount into a joint savings account for future expenses. They then divided the rest proportionally based on the number of hours each worked. How much money did Shawn receive?

A $209.53

B $240.83

C $283.48

D $295.11

39 Line KN represents a proportional relationship. Point N lies at **(18, 12)**, as shown on the graph below.
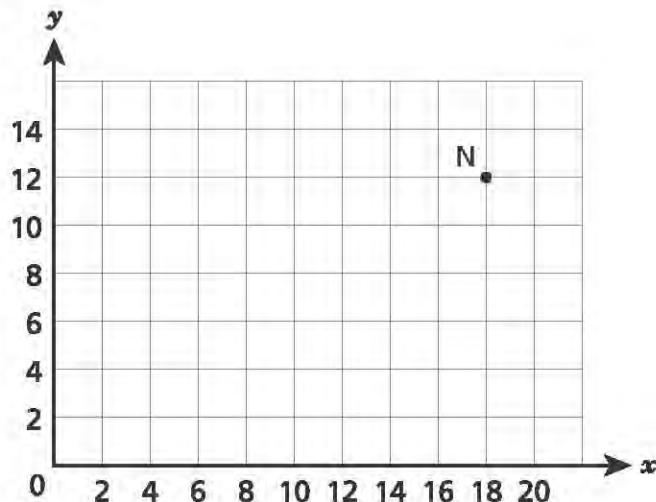
Which ordered pair could represent the coordinates of point K?

A (6, 0)

B (2, 3)

C (1.5, 0)

D (7.5, 5)

40 Which expression is equivalent to the expression $-3(4x - 2) - 2x$?

A $-8x$

B $-16x$

C $-14x - 2$

D $-14x + 6$

41 Maya uses blue and orange fabric to make identical wall decorations. The graph below shows the relationship between the amounts of blue and orange fabric used.

What is the constant of proportionality as shown in the graph?

A $\frac{3}{10}$

B $\frac{2}{5}$

C $\frac{3}{7}$

D $\frac{1}{2}$

42 Lance bought n notebooks that cost \$0.75 each and p pens that cost \$0.55 each. A 6.25% sales tax will be applied to the total cost. Which expression represents the total amount Lance paid, including tax?

A $0.0625(n + p) + 0.0625(0.75n + 0.55p)$

B $(0.75n + 0.55p) + 0.0625(0.75n + 0.55p)$

C $0.75(0.0625n) + 0.55(0.0625n)$

D $0.75(1.0625n) + 0.55(1.0625n)$

43 A recycling plant processes an average of $\frac{1}{3}$ ton of glass each minute. At approximately what rate does the recycling plant process glass, in tons per day? (1 day = 24 hours)

A 20

B 180

C 480

D 4,320

44 When Keisha installed a fence along the 200-foot perimeter of her rectangular back yard, she left an opening for a gate. In the diagram below, she used x to represent the length, in feet, of the gate.
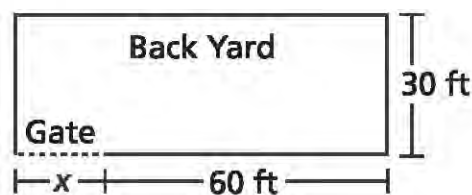
What is the value of x?

A 10

B 20

C 25

D 30

45 Last year 950 people attended a town's annual parade. This year 1,520 people attended. What was the percent increase in attendance from last year to this year?

A 37.5%

B 57.0%

C 60.0%

D 62.5%

Grade 7
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 7

April 13–15, 2016

Released Questions

Book 3

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- Be sure to show your work when asked.

- Plan your time.

52 An after-school program offers tutoring for different subjects. During the last month, a teacher recorded the number of students who participated in tutoring in each subject, as shown in the table below.

TUTORING PARTICIPATION

Subject	Number of Students
Math	40
Science	55
English	47
History	58

Explain how the teacher could use these data to predict **about** how many of the next 100 students will participate in math tutoring.

_____

_____

_____

53 A home-improvement store sold wind chimes for $30 each. A customer signed up for a free membership card and received a 5% discount off the price. Sales tax of 5% was applied after the discount. What was the final price of the wind chime?

Show your work.

Answer $_____

54 Ms. Hernandez has $100 to spend on parking and admission to the zoo. The parking will cost $7, and admission tickets will cost $15.50 per person, including tax. Write and solve an equation that can be used to determine the number of people that she can bring to the zoo, including herself.

Show your work.

Answer _____ people

55 Two math classes took the same quiz. The scores of 10 randomly selected students from each class are listed below.

- Sample of Class A: 75, 80, 60, 90, 85, 80, 70, 90, 70, 65

- Sample of Class B: 95, 90, 85, 90, 100, 75, 90, 85, 90, 85

Based on the medians of the scores for each class, what inference would you make about the quiz scores of all the students in Class A compared to all the students in Class B? Explain your reasoning to justify your answer.

_____

_____

56 A contractor is building the base of a circular fountain. On the blueprint, the base of the fountain has a diameter of 18 centimeters. The blueprint has a scale of three centimeters to four feet. What will be the actual area of the base of the fountain, in square feet, after it is built? Round your answer to the nearest tenth of a square foot.

Show your work.

Answer _____ square feet

57 Explain the steps needed to determine the value of the expression shown below. Be sure to provide the correct value of the expression in your explanation.

$$\dfrac{\frac{1}{2}}{-\frac{2}{5}} + \left(-\frac{1}{4}\right)$$

Answer

_____

_____

_____

58 The lines graphed below show the amounts of water in two tanks as they were being filled over time.

TANK FILLING RATES
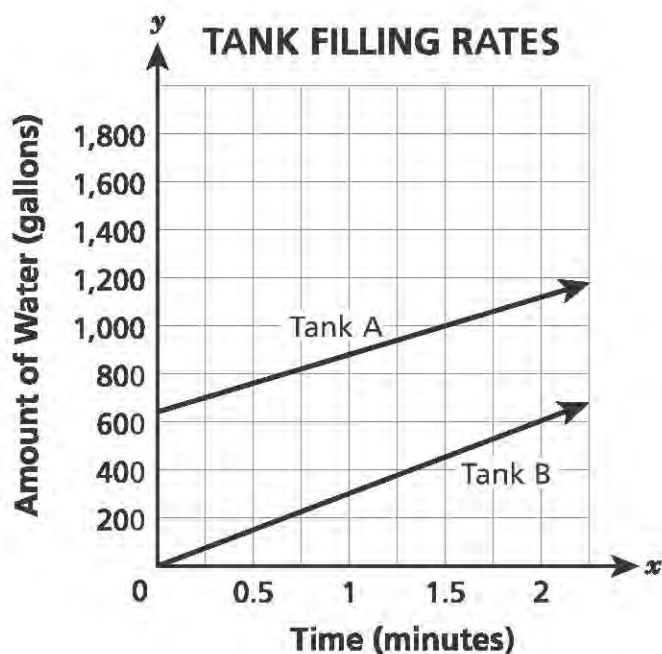
For each tank, explain whether or not there is a proportional relationship between the amount of water, in gallons, and the time, in minutes. If there is a proportional relationship, identify the unit rate. Use specific features of the graph to support your answer.

_____

_____

_____

GO ON

59 Trent is fishing from a pier.

- The tip of his fishing rod is $53\frac{3}{4}$ feet above the surface of the water.
- The hook on the end of the fishing line is directly below the tip of the fishing rod $12\frac{2}{3}$ feet below the surface of the water.

Trent estimates that the distance between the tip of his fishing rod and the hook is less than 65 feet. Is Trent's estimate reasonable? Explain your answer.

Answer

_____

_____

_____

Trent lets his hook drop another 10 inches. What is the distance, in feet, between the tip of the fishing rod and the hook? Do not round your answer.

Show your work.

Answer _____ feet

GO ON

60   The coach for a basketball team wants to buy new shoes for her 12 players.

Super Sports is offering a 20% discount on each pair of shoes, which were originally priced $72.50. A 6.5% sales tax will be applied to the discounted price.

The same shoes are also available on Double Dribble's web site for $54.75. A 9% processing fee will be applied to the cost of the shoes, plus a shipping fee of $5.99 for each pair.

What is the difference in the total costs of the 12 pairs of shoes between the two stores?

Show your work.

Answer $_____

61 Ruby's Market sells smoked meats by the pound. The prices for several different meats are shown in the table.

RUBY'S MARKET PRICES

Type of Meat	Price per pound
Beef	$4.25
Chicken	$2.50
Sausage	$3.25
Turkey	$2.85

How much more does $1\frac{1}{4}$ pounds of beef cost than $1\frac{1}{4}$ pounds of turkey?

Show your work.

Answer $_____

Brad has $10 to spend at Ruby's. He orders $\frac{1}{2}$ pound of sausage and $1\frac{1}{4}$ pounds of chicken. How much money will Brad have left after he pays for this order?

Show your work.

Answer $_____

STOP

Place Student Label Here

Grade 7
2016 Common Core
Mathematics Test
Book 3
April 13–15, 2016

Grade 7   **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	C	1	CCSS.Math.Content.7.G.A.1	Geometry		0.70		
2	Multiple Choice	B	1	CCSS.Math.Content.7.NS.A.1d	The Number System		0.40		
7	Multiple Choice	B	1	CCSS.Math.Content.7.RP.A.3	Ratios and Proportional Relationships		0.44		
8	Multiple Choice	C	1	CCSS.Math.Content.7.EE.B.4b	Expressions and Equations		0.54		
9	Multiple Choice	A	1	CCSS.Math.Content.7.SP.B.3	Statistics and Probability		0.48		
10	Multiple Choice	D	1	CCSS.Math.Content.7.NS.A.2c	The Number System		0.47		
11	Multiple Choice	A	1	CCSS.Math.Content.7.EE.B.4a	Expressions and Equations		0.69		
12	Multiple Choice	C	1	CCSS.Math.Content.7.SP.A.1	Statistics and Probability		0.57		
13	Multiple Choice	A	1	CCSS.Math.Content.7.SP.C.8a	Statistics and Probability		0.51		
14	Multiple Choice	A	1	CCSS.Math.Content.7.RP.A.2c	Ratios and Proportional Relationships		0.33		
15	Multiple Choice	A	1	CCSS.Math.Content.7.NS.A.3	The Number System		0.47		
16	Multiple Choice	C	1	CCSS.Math.Content.7.SP.C.5	Statistics and Probability		0.63		
20	Multiple Choice	A	1	CCSS.Math.Content.7.EE.B.4b	Expressions and Equations		0.60		
21	Multiple Choice	B	1	CCSS.Math.Content.7.NS.A.2c	The Number System		0.44		
22	Multiple Choice	D	1	CCSS.Math.Content.7.EE.B.3	Expressions and Equations		0.38		
Book 2									
27	Multiple Choice	A	1	CCSS.Math.Content.7.NS.A.1c	The Number System		0.67		
28	Multiple Choice	B	1	CCSS.Math.Content.7.NS.A.2b	The Number System	CCSS.Math.Content.7.RP.A.1	0.51		
29	Multiple Choice	D	1	CCSS.Math.Content.7.EE.A.1	Expressions and Equations		0.48		
33	Multiple Choice	B	1	CCSS.Math.Content.7.EE.B.4a	Expressions and Equations		0.67		
34	Multiple Choice	C	1	CCSS.Math.Content.7.EE.A.2	Expressions and Equations		0.39		
35	Multiple Choice	C	1	CCSS.Math.Content.7.RP.A.3	Ratios and Proportional Relationships		0.48		
36	Multiple Choice	A	1	CCSS.Math.Content.7.SP.C.6	Statistics and Probability		0.51		

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	P-Value (Average Points Earned ÷ Total Possible Points)
37	Multiple Choice	B	1	CCSS.Math.Content.7.RP.A.1	Ratios and Proportional Relationships		0.42		
38	Multiple Choice	A	1	CCSS.Math.Content.7.NS.A.3	The Number System		0.45		
39	Multiple Choice	D	1	CCSS.Math.Content.7.RP.A.2a	Ratios and Proportional Relationships		0.35		
40	Multiple Choice	D	1	CCSS.Math.Content.7.EE.A.1	Expressions and Equations		0.57		
41	Multiple Choice	C	1	CCSS.Math.Content.7.RP.A.2b	Ratios and Proportional Relationships		0.39		
42	Multiple Choice	B	1	CCSS.Math.Content.7.EE.A.2	Expressions and Equations		0.50		
43	Multiple Choice	C	1	CCSS.Math.Content.7.RP.A.1	Ratios and Proportional Relationships		0.64		
44	Multiple Choice	A	1	CCSS.Math.Content.7.EE.B.4a	Expressions and Equations		0.48		
45	Multiple Choice	C	1	CCSS.Math.Content.7.RP.A.3	Ratios and Proportional Relationships		0.39		
Book 3									
52	Constructed Response		2	CCSS.Math.Content.7.SP.C.6	Statistics and Probability			0.61	0.30
53	Constructed Response		2	CCSS.Math.Content.7.RP.A.3	Ratios and Proportional Relationships			0.88	0.44
54	Constructed Response		2	CCSS.Math.Content.7.EE.B.4a	Expressions and Equations			1.16	0.58
55	Constructed Response		2	CCSS.Math.Content.7.SP.A.2	Statistics and Probability			0.93	0.46
56	Constructed Response		2	CCSS.Math.Content.7.G.B.4	Geometry	CCSS.Math.Content.7.G.A.1		0.56	0.28
57	Constructed Response		2	CCSS.Math.Content.7.NS.A.3	The Number System			1.12	0.56
58	Constructed Response		3	CCSS.Math.Content.7.RP.A.2a	Ratios and Proportional Relationships	CCSS.Math.Content.7.RP.A.2b		0.95	0.32
59	Constructed Response		3	CCSS.Math.Content.7.EE.B.3	Expressions and Equations			0.92	0.31
60	Constructed Response		3	CCSS.Math.Content.7.RP.A.3	Ratios and Proportional Relationships			1.01	0.34
61	Constructed Response		3	CCSS.Math.Content.7.NS.A.3	The Number System			1.43	0.48

*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.