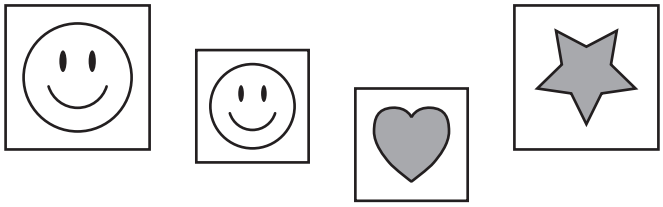
New England Common Assessment Program

Released Items Support Materials 2011

Grade 3 Mathematics

N&O 2.1 **Demonstrates conceptual understanding of rational numbers with respect to: whole numbers** from 0 to 199 using place value, by applying the concepts of equivalency in composing or decomposing numbers (e.g., 34 = 17 + 17; 34 = 29 + 5); and in expanded notation (e.g., 141 = 1 hundred + 4 tens + 1 one or 141 = 100 + 40 + 1) **using models, explanations, or other representations**; and **positive fractional numbers** (benchmark fractions: *a*/2, *a*/3, or *a*/4, where *a* is a whole number greater than 0 and less than or equal to the denominator) as a part to whole relationship in area and set models where the denominator is equal to the number of parts in the whole **using models, explanations, or other representations**.

1 Look at this set of stickers.

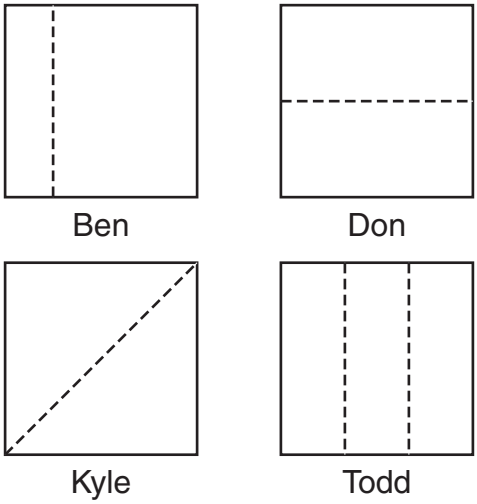


What fraction of this set of stickers is a star?

- ○ A. $\frac{1}{4}$
- ○ B. $\frac{1}{3}$
- ○ C. $\frac{3}{1}$
- ○ D. $\frac{4}{1}$

N&O 2.1 **Demonstrates conceptual understanding of rational numbers with respect to: whole numbers** from 0 to 199 using place value, by applying the concepts of equivalency in composing or decomposing numbers (e.g., 34 = 17 + 17; 34 = 29 + 5); and in expanded notation (e.g., 141 = 1 hundred + 4 tens + 1 one or 141 = 100 + 40 + 1) **using models, explanations, or other representations**; and **positive fractional numbers** (benchmark fractions: *a*/2, *a*/3, or *a*/4, where *a* is a whole number greater than 0 and less than or equal to the denominator) as a part to whole relationship in area and set models where the denominator is equal to the number of parts in the whole **using models, explanations, or other representations**.

2 Mrs. Cassidy gave squares to Ben, Don, Kyle, and Todd. Each boy drew dotted lines on his square to divide it into parts.



Which of the boys divided a square into halves?

- ○ A. only Todd
- ○ B. only Don
- ○ C. only Don and Kyle
- ○ D. only Ben, Don, and Kyle

N&O 2.2 **Demonstrates understanding of the relative magnitude of numbers** from 0 to 199 by ordering whole numbers; by comparing whole numbers to each other or to benchmark whole numbers (10, 25, 50, 75, 100, 125, 150, or 175); by demonstrating an understanding of the relation of inequality when comparing whole numbers by using "1 more", "1 less", "10 more", "10 less", "100 more", or "100 less"; or by connecting number words and numerals to the quantities they represent using models, number lines, or explanations.

3 Look at this chart.

Points Scored

Team	Number of Points
Red	65
Blue	90
Green	91
Yellow	86

Which team scored more than 75 points but less than 90 points?

- ○ A. Red
- ○ B. Blue
- ○ C. Green
- ○ D. Yellow

N&O 2.3 **Demonstrates conceptual understanding of mathematical operations involving** addition and subtraction of whole numbers by solving problems involving joining actions, separating actions, part-part whole relationships, and comparison situations; and addition of multiple one-digit whole numbers.

4 Mrs. Lin bought a box of 115 straws. She used 19 of the straws. How many straws does Mrs. Lin have now?

- ○ A. 94
- ○ B. 96
- ○ C. 104
- ○ D. 106

N&O 2.3 **Demonstrates conceptual understanding of mathematical operations involving** addition and subtraction of whole numbers by solving problems involving joining actions, separating actions, part-part whole relationships, and comparison situations; and addition of multiple one-digit whole numbers.

5 Olivia had some stickers. Then Craig gave her 3 stickers. Now she has 12 stickers. How many stickers did Olivia start with?

- ○ A. 15
- ○ B. 10
- ○ C. 9
- ○ D. 8

N&O 2.5 **Demonstrates understanding of monetary value** by adding coins together to a value no greater than $1.99 and representing the result in dollar notation; making change from $1.00 or less, or recognizing equivalent coin representations of the same value (values up to $1.99).

6 Shane had $0.65 in his pocket. Then he lost a nickel. How much money does he have now?

○ A. 

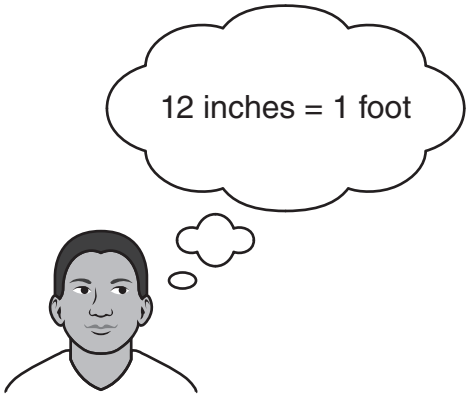
○ B. 

○ C. 

○ D. 

G&M 2.7 **Measures and uses units of measures appropriately and consistently, and makes conversions within systems when solving problems** across the content strands.

7 A fence is 3 feet 6 inches tall.

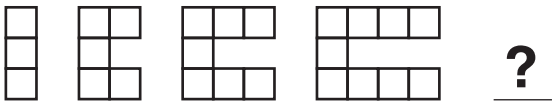


How many inches tall is the fence?

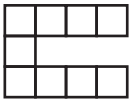
- ○ A. 21 inches
- ○ B. 30 inches
- ○ C. 36 inches
- ○ D. 42 inches

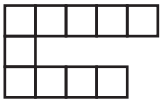
F&A 2.1 **Identifies and extends to specific cases a variety of patterns** (linear and non-numeric) represented in models, tables, or sequences by extending the pattern to the next element, or finding a missing element (e.g., 2, 4, 6, ___, 10).

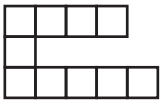
8 Look at this pattern.



What figure comes next in the pattern?

○ A. 

○ B. 

○ C. 

○ D. 

F&A 2.1 **Identifies and extends to specific cases a variety of patterns** (linear and non-numeric) represented in models, tables, or sequences by extending the pattern to the next element, or finding a missing element (e.g., 2, 4, 6, ___, 10).

9 This table shows the number of balloons in different numbers of bags.

Balloons

Number of Bags	Number of Balloons
	?
	12
	18
	24
	30

How many balloons are in one bag?

- ○ A. 8
- ○ B. 6
- ○ C. 4
- ○ D. 3

F&A 2.4 **Demonstrates conceptual understanding of equality** by finding the value that will make an open sentence true (e.g., 2 + □ = 7). (limited to one operation and limited to use addition or subtraction)

10 Look at this number sentence.

$$\boxed{?} - 10 = 15 - 2$$

What number makes this number sentence true?

- ○ A. 13
- ○ B. 15
- ○ C. 23
- ○ D. 25

N&O 2.1 **Demonstrates conceptual understanding of rational numbers with respect to: whole numbers** from 0 to 199 using place value, by applying the concepts of equivalency in composing or decomposing numbers (e.g., 34 = 17 + 17; 34 = 29 + 5); and in expanded notation (e.g., 141 = 1 hundred + 4 tens + 1 one or 141 = 100 + 40 + 1) **using models, explanations, or other representations**; and **positive fractional numbers** (benchmark fractions: *a*/2, *a*/3, or *a*/4, where *a* is a whole number greater than 0 and less than or equal to the denominator) as a part to whole relationship in area and set models where the denominator is equal to the number of parts in the whole **using models, explanations, or other representations**.

11 A number has

- 5 in the tens place,
- 2 in the ones place, and
- 1 in the hundreds place.

What is the number?

Scoring Guide:

Score	Description
1	for correct answer, (**152** or **equivalent**)
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

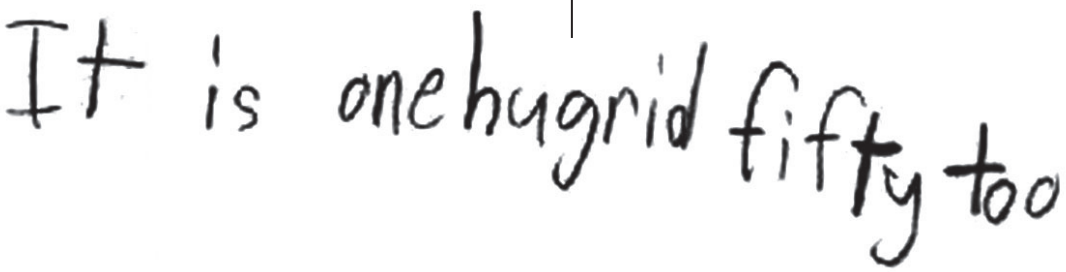
Score Point 1
(Example A)

11 A number has

- 5 in the tens place,
- 2 in the ones place, and
- 1 in the hundreds place.

What is the number?

The student's answer is correct. (Student was not penalized for incorrect spelling.)



Score Point 1
(Example B)

11 A number has

- 5 in the tens place,
- 2 in the ones place, and
- 1 in the hundreds place.

What is the number?

152

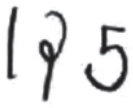
The student's answer is correct.

Score Point 0
(Example A)

11 A number has

- 5 in the tens place,
- 2 in the ones place, and
- 1 in the hundreds place.

What is the number?



The student's answer is incorrect.

Score Point 0
(Example B)

11 A number has

- 5 in the tens place,
- 2 in the ones place, and
- 1 in the hundreds place.

What is the number?

The student's answer is incorrect.

N&O 2.2 **Demonstrates understanding of the relative magnitude of numbers** from 0 to 199 by ordering whole numbers; by comparing whole numbers to each other or to benchmark whole numbers (10, 25, 50, 75, 100, 125, 150, or 175); by demonstrating an understanding of the relation of inequality when comparing whole numbers by using "1 more", "1 less", "10 more", "10 less", "100 more", or "100 less"; or by connecting number words and numerals to the quantities they represent using models, number lines, or explanations.

12 Look at this number line.

Circle the point on the number line that represents 70.

Scoring Guide:

Score	Description
1	for identifying the correct point on the number line
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

SCORE POINT 1
(EXAMPLE A)

⓬ Look at this number line.

Circle the point on the number line that represents 70.

The student response is correct.
(The student identified the correct point.)

SCORE POINT 1
(EXAMPLE B)

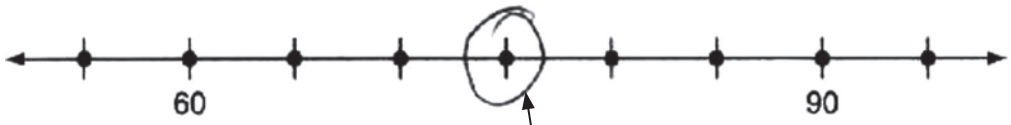
⓬ Look at this number line.

Circle the point on the number line that represents 70.

The student response is correct.
(The student identified the correct point.)

Score Point 0
(Example A)

⓬ Look at this number line.

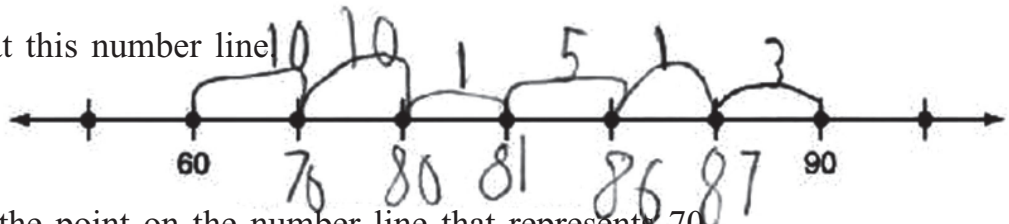


Circle the point on the number line that represents 70.

The student response is incorrect.

Score Point 0
(Example B)

⓬ Look at this number line.



Circle the point on the number line that represents 70.

The student response is incorrect.

DSP 2.4 **Uses counting techniques to solve problems** involving combinations using a variety of strategies (e.g., student diagrams, organized lists, tables, tree diagrams, or others); (e.g., How many ways can you make 50 cents using nickels, dimes and quarters?)

13 Manuel wants to make an ice cream cone. He can choose one ice cream flavor and one topping from the flavors and toppings shown below.

Flavors	**Toppings**
Vanilla	Nuts
Chocolate	Fudge
Strawberry	

Show all the different ways Manuel can choose one flavor and one topping.

Scoring Guide:

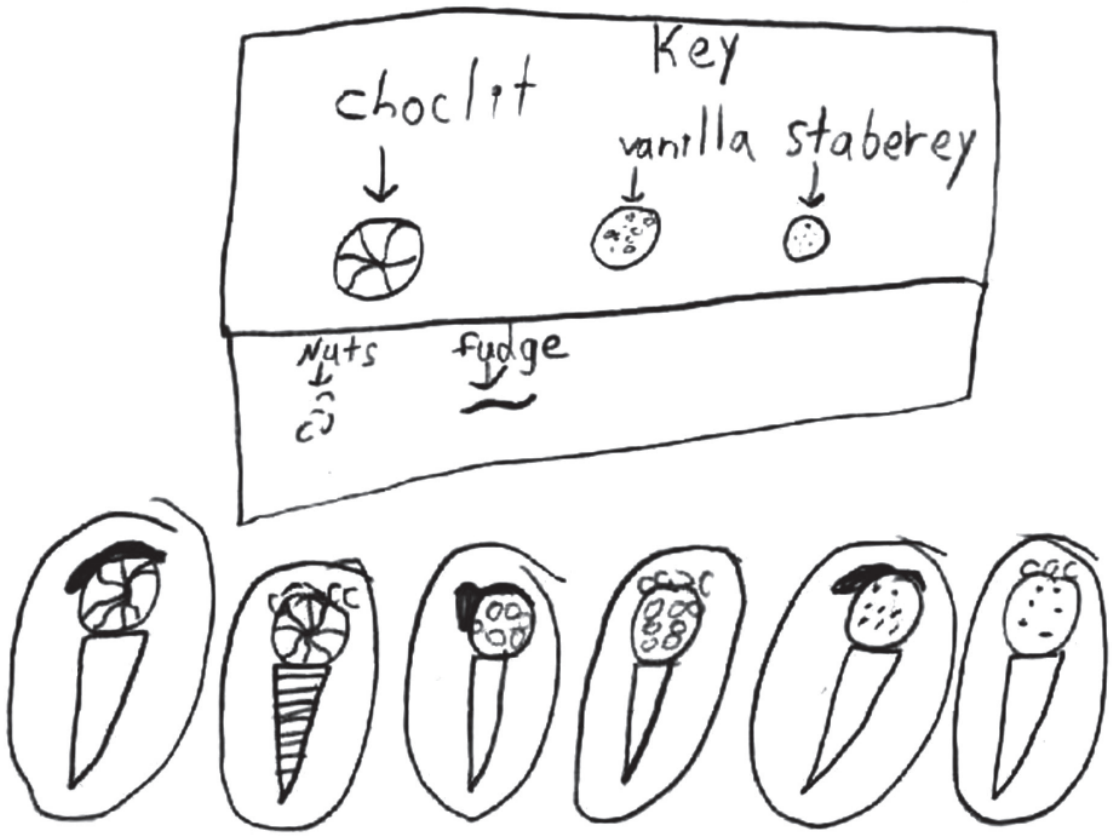
Score	Description
1	for six correct combinations with no incorrect combinations
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

Score Point 1
(Example A)

13 Manuel wants to make an ice cream cone. He can choose one ice cream flavor and one topping from the flavors and toppings shown below.

Flavors	Toppings
Vanilla	Nuts
Chocolate	Fudge
Strawberry	

Show all the different ways Manuel can choose one flavor and one topping.

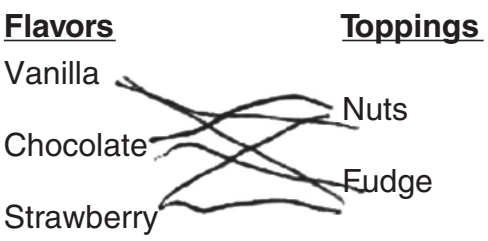


6

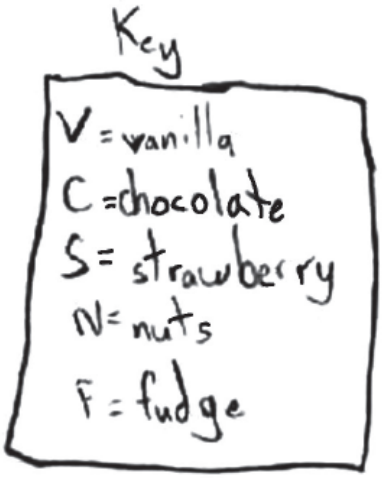
The student's response is correct.

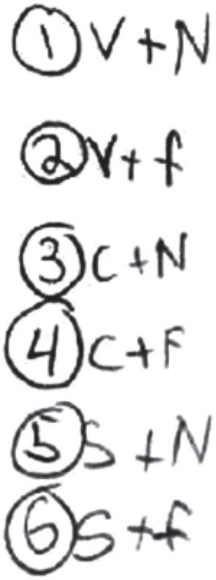
SCORE POINT 1
(EXAMPLE B)

13 Manuel wants to make an ice cream cone. He can choose one ice cream flavor and one topping from the flavors and toppings shown below.



Show all the different ways Manuel can choose one flavor and one topping.





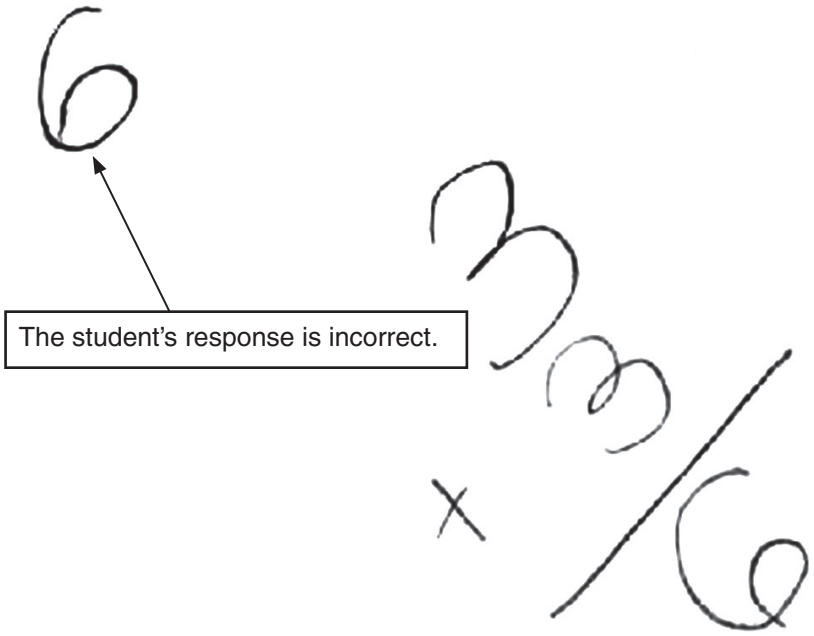
The student's response is correct.

SCORE POINT 0
(EXAMPLE A)

13 Manuel wants to make an ice cream cone. He can choose one ice cream flavor and one topping from the flavors and toppings shown below.

Flavors	Toppings
Vanilla	Nuts
Chocolate	Fudge
Strawberry	

Show all the different ways Manuel can choose one flavor and one topping.



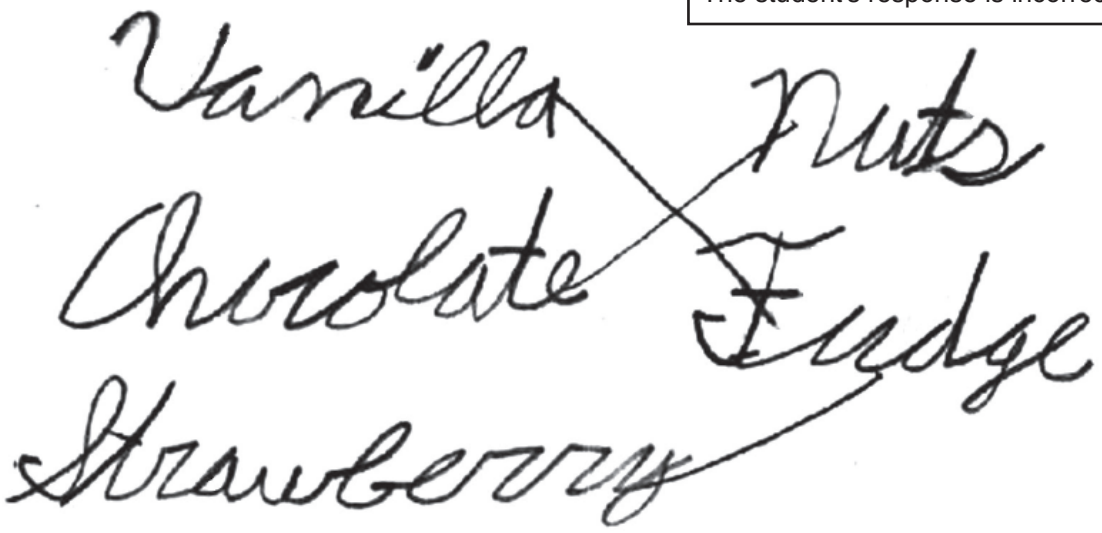
Score Point 0
(Example B)

13 Manuel wants to make an ice cream cone. He can choose one ice cream flavor and one topping from the flavors and toppings shown below.

Flavors	Toppings
Vanilla	Nuts
Chocolate	Fudge
Strawberry	

Show all the different ways Manuel can choose one flavor and one topping.

The student's response is incorrect.



SCORE POINT 0
(EXAMPLE C)

13 Manuel wants to make an ice cream cone. He can choose one ice cream flavor and one topping from the flavors and toppings shown below.

Flavors	Toppings
Vanilla	Nuts
Chocolate	Fudge
Strawberry	

Show all the different ways Manuel can choose one flavor and one topping.

1. Vanilla Nuts, Vanilla Fudge
2. Chocolate Fudge, Chocolate Nuts
3. Strawberry Nuts, Stawberry Fudge
4. Strawberry/choclate, Vanilla Fudge, Nuts

The student's response is incorrect. (The student shows 6 correct combinations but adds a 7th incorrect combination.)

N&O 2.3 **Demonstrates conceptual understanding of mathematical operations involving** addition and subtraction of whole numbers by solving problems involving joining actions, separating actions, part-part whole relationships, and comparison situations; and addition of multiple one-digit whole numbers.

14 A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class? Use words or numbers to show your work or explain how you know.

Scoring Guide:

Score	Description
2	for correct answer, **75**, with sufficient explanation or work shown to indicate correct strategy
1	for correct answer with insufficient or no explanation or work shown OR for sufficient strategy with incorrect or no answer
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

Score Point 2
(Example A)

14 A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class? Use words or numbers to show your work or explain how you know.

second grade has 75 Stadents

first 63+12=75

The student's answer is correct with sufficient work shown.

Score Point 2
(Example B)

14 A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class? Use words or numbers to show your work or explain how you know. 75

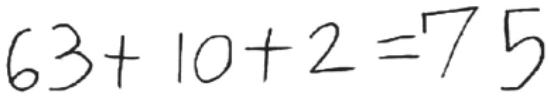
$$\begin{array}{r} 63 \\ +\ 12 \\ \hline 75 \end{array}$$

The student's answer is correct with sufficient work shown.

Score Point 2
(Example C)

14 A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class? Use words or numbers to show your work or explain how you know.



The student's answer is correct with sufficient work shown.

Score Point 1
(Example A)

14 A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class? Use words or numbers to show your work or explain how you know.

The student's answer is incorrect, with sufficient work shown to indicate correct strategy.

Score Point 1
(Example B)

14 A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class? Use words or numbers to show your work or explain how you know.

75

The student's answer is correct, with no explanation or work shown.

Score Point 0
(Example A)

14 A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class? Use words or numbers to show your work or explain how you know.

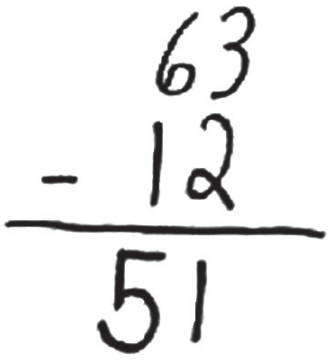
79

The student's answer is incorrect, with no explanation or work shown.

SCORE POINT 0
(EXAMPLE B)

14 A third-grade class has 63 students. A second-grade class has 12 more students than the third-grade class.

How many students are in the second-grade class? Use words or numbers to show your work or explain how you know.

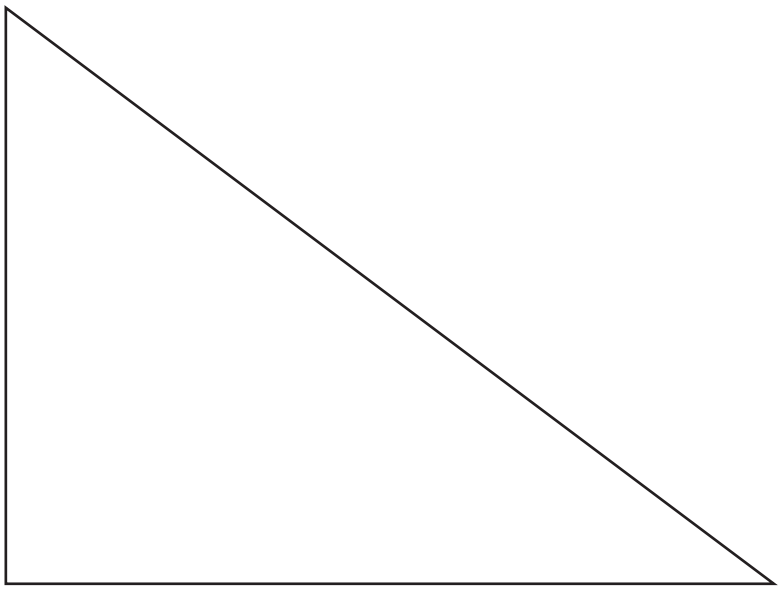


The student's answer is incorrect, based on an incorrect strategy.

G&M 2.6 **Demonstrates conceptual understanding of perimeter and area** by using models or manipulatives to surround and cover polygons.

15 Use your ruler to answer this question.

Look at this triangle.



Find the distance around this triangle to the nearest inch. Show your work or explain how you know.

_____ inches

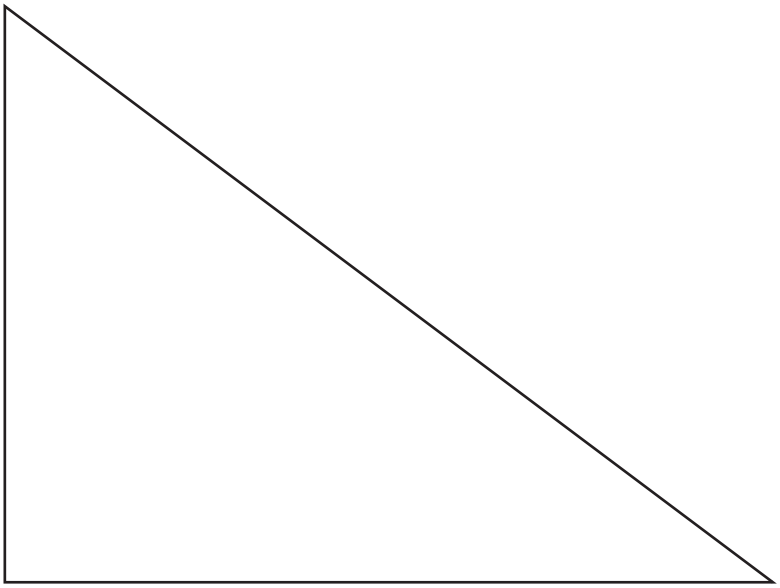
Scoring Guide:

Score	Description
2	for correct answer, **12**, with sufficient explanation given or work shown to indicate correct strategy
1	for correct answer, with insufficient or no explanation given or work shown OR for appropriate strategy, with incorrect answer or missing answer
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

SCORE POINT 2
(EXAMPLE A)

15 Use your ruler to answer this question.

Look at this triangle.



Find the distance around this triangle to the nearest inch. Show your work or explain how you know.

12 inches

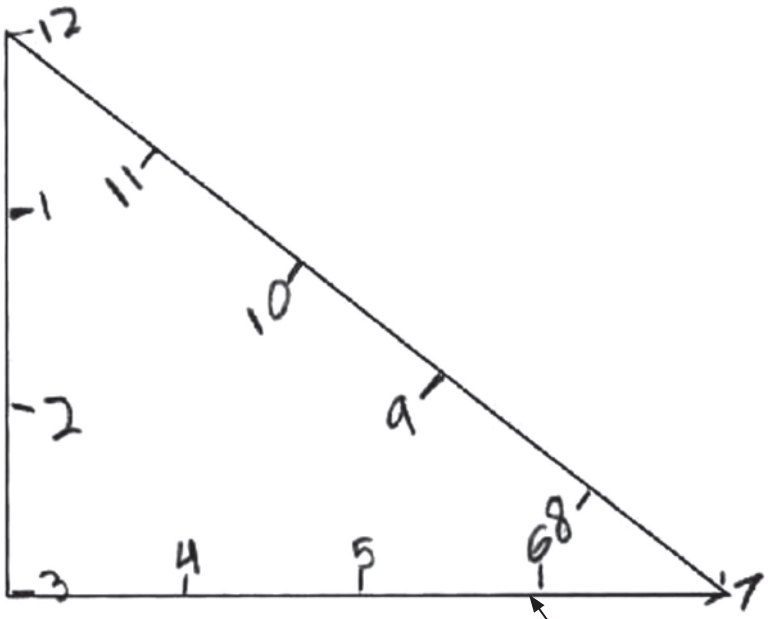
3 + 4 = 7
7 + 5 = 12
So 12 is the answer.

The student's answer is correct, with sufficient work shown to indicate correct strategy.

SCORE POINT 2
(EXAMPLE B)

15 Use your ruler to answer this question.

Look at this triangle.



Find the distance around this triangle to the nearest inch. Show your work or explain how you know.

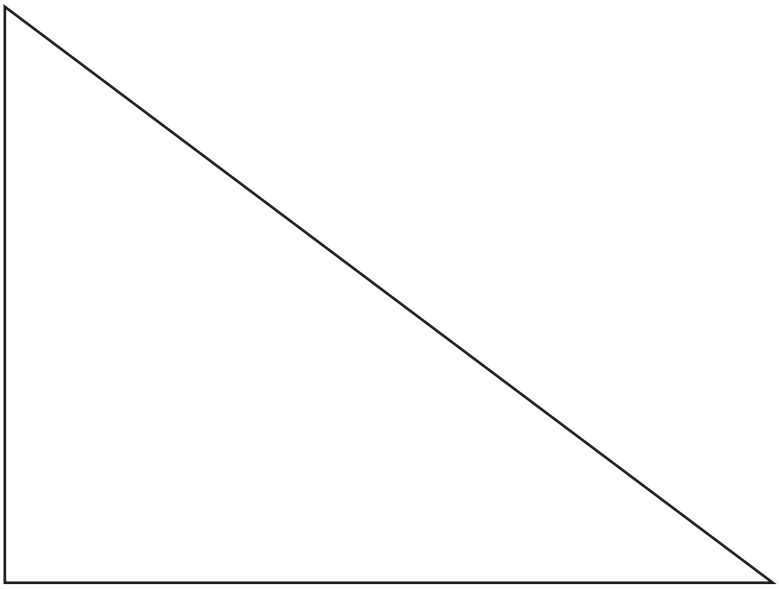
12 inches

The student's answer is correct, with sufficient work shown to indicate correct strategy.

SCORE POINT 1
(EXAMPLE A)

15 Use your ruler to answer this question.

Look at this triangle.



Find the distance around this triangle to the nearest inch. Show your work or explain how you know.

I used a ruler

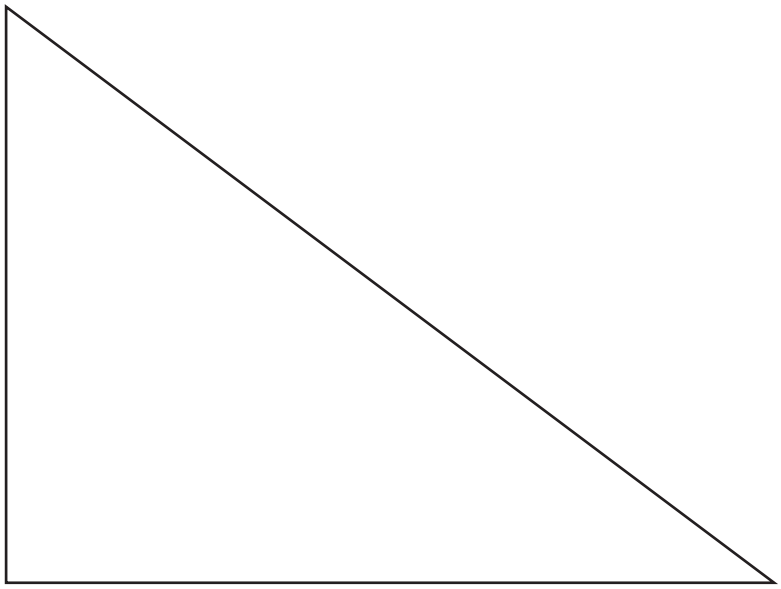
12 inches

The student's answer is correct, with insufficient explanation.

Score Point 1
(Example B)

15 Use your ruler to answer this question.

Look at this triangle.



Find the distance around this triangle to the nearest inch. Show your work or explain how you know.

14 inches

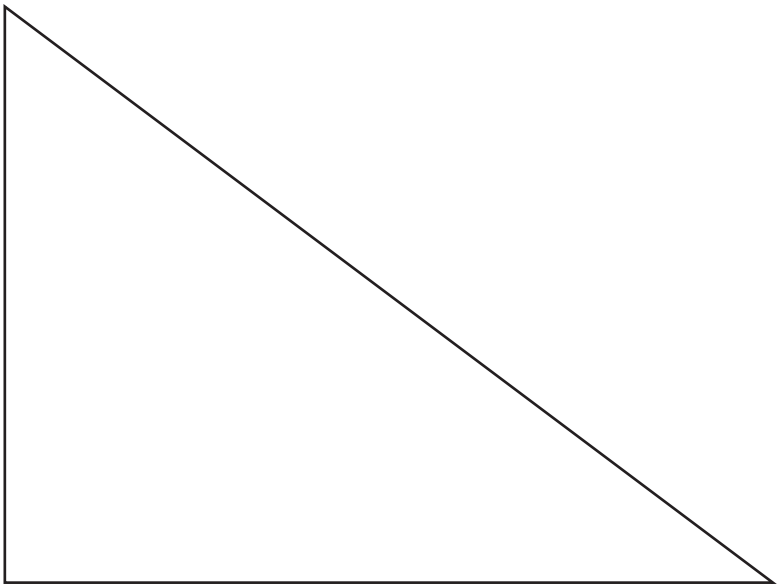
I used my ruler and I got 5 inches, 4 inches, and 3 inches and I added it all together and I got 14

The student's answer is incorrect, with sufficient explanation to indicate correct strategy.

SCORE POINT 0
(EXAMPLE A)

15 Use your ruler to answer this question.

Look at this triangle.



Find the distance around this triangle to the nearest inch. Show your work or explain how you know.

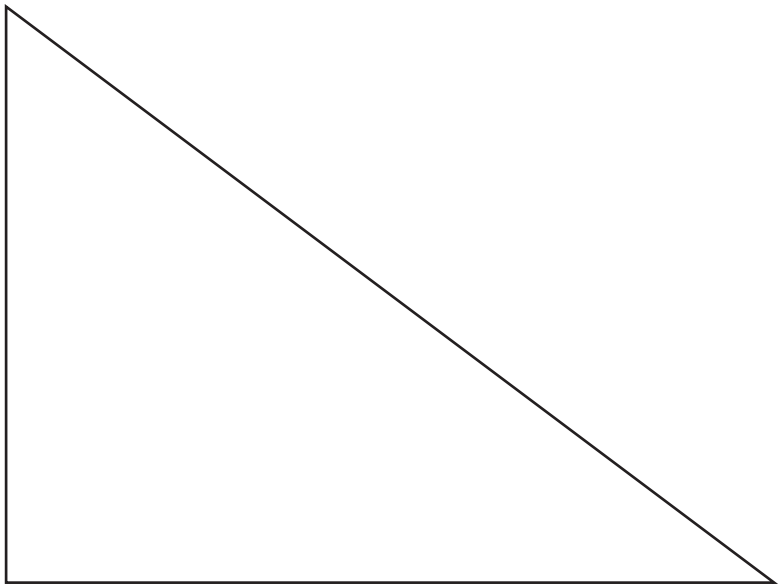
12 1/2 inches

The student's answer is incorrect, with no explanation or work shown.

SCORE POINT 0
(EXAMPLE B)

15 Use your ruler to answer this question.

Look at this triangle.



Find the distance around this triangle to the nearest inch. Show your work or explain how you know.

5 inches

The student's answer is incorrect, with incorrect strategy.

when I megard it. I t stoped at five inches.

DSP 2.2 **Analyzes patterns, trends, or distributions in data in a variety of contexts by determining or using** more, less, or equal.

16 Each student in Ms. Jackson's class voted for one game to play outside. All the students will play the game that gets the most votes. This tally chart shows the number of students who voted for each game.

Game Vote

Game	Number of Students
Duck Duck Goose	𝍸 |
Kickball	𝍸 ||
Red Light Green Light	𝍸 ||
Freeze Tag	||||

a. How many more students voted for Duck Duck Goose than voted for Freeze Tag?

Ms. Jackson said, "We need to vote again."

b. Explain why the students need to vote again.

Scoring Guide:

Score	Description
2	for correct answer in part a, **2**, and for an appropriate explanation in part b
1	for correct answer in part a or for an appropriate explanation in part b
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response

SCORE POINT 2
(EXAMPLE A)

16 Each student in Ms. Jackson's class voted for one game to play outside. All the students will play the game that gets the most votes. This tally chart shows the number of students who voted for each game.

Game Vote

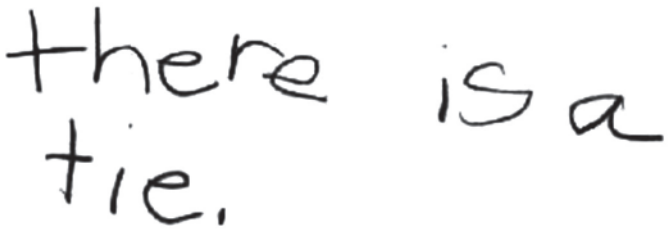
Game	Number of Students
Duck Duck Goose	𝍸 |
Kickball	𝍸 ||
Red Light Green Light	𝍸 ||
Freeze Tag	||||

a. How many more students voted for Duck Duck Goose than voted for Freeze Tag?

a) The student's answer is correct.

Ms. Jackson said, "We need to vote again."

b. Explain why the students need to vote again.



b) The student's explanation is correct.

SCORE POINT 2
(EXAMPLE B)

16 Each student in Ms. Jackson's class voted for one game to play outside. All the students will play the game that gets the most votes. This tally chart shows the number of students who voted for each game.

Game Vote

Game	Number of Students
Duck Duck Goose	𝍸 |
Kickball	𝍸 ||
Red Light Green Light	𝍸 ||
Freeze Tag	||||

a. How many more students voted for Duck Duck Goose than voted for Freeze Tag?

2 more People voted for duck duck goose.

a) The student's answer is correct.

Ms. Jackson said, "We need to vote again."

b. Explain why the students need to vote again.

the students need to vote again because kickball & Red light green light have the same number of tallys.

b) The student's explanation is correct.

Score Point 1
(Example A)

16 Each student in Ms. Jackson's class voted for one game to play outside. All the students will play the game that gets the most votes. This tally chart shows the number of students who voted for each game.

Game Vote

Game	Number of Students
Duck Duck Goose	𝍸 |
Kickball	𝍸 ||
Red Light Green Light	𝍸 ||
Freeze Tag	||||

a. How many more students voted for Duck Duck Goose than voted for Freeze Tag?

6 students voted for duck duck Goose and 4 student voted for Freeze tag.

a) The student's answer is incorrect.

Ms. Jackson said, "We need to vote again."

b. Explain why the students need to vote again.

The student need to vote agin because kick ball and Red light green light have the same number of votes They both have 7 votes.

b) The student's explanation is correct.

SCORE POINT 1
(EXAMPLE B)

16 Each student in Ms. Jackson's class voted for one game to play outside. All the students will play the game that gets the most votes. This tally chart shows the number of students who voted for each game.

Game Vote

Game	Number of Students
Duck Duck Goose	𝍸 |
Kickball	𝍸 ||
Red Light Green Light	𝍸 ||
Freeze Tag	||||

a. How many more students voted for Duck Duck Goose than voted for Freeze Tag?

2 more people voted four duck duck goose

a) The student's answer is correct.

Ms. Jackson said, "We need to vote again."

b. Explain why the students need to vote again.

because there has to be atleast 5 people in a game. And you can't play freez tag with four people.

b) The student's explanation is incorrect.

SCORE POINT 0

16 Each student in Ms. Jackson's class voted for one game to play outside. All the students will play the game that gets the most votes. This tally chart shows the number of students who voted for each game.

Game Vote

Game	Number of Students
Duck Duck Goose	𝍸 |
Kickball	𝍸 ||
Red Light Green Light	𝍸 ||
Freeze Tag	||||

a. How many more students voted for Duck Duck Goose than voted for Freeze Tag?

6 + 4 = 10

a) The student's answer is incorrect.

Ms. Jackson said, "We need to vote again."

b. Explain why the students need to vote again.

becos freeze tag has only 4 students voted

b) The student's explanation is incorrect.

Grade 3 Mathematics Released Item Information – 2011

Released Item Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No Tools Allowed				✓	✓								✓	✓		
Content Strand[1]	NO	NO	NO	NO	NO	NO	GM	FA	FA	FA	NO	NO	DP	NO	GM	DP
GLE Code	2-1	2-1	2-2	2-3	2-3	2-5	2-7	2-1	2-1	2-4	2-1	2-2	2-4	2-3	2-6	2-2
Depth of Knowledge Code	1	2	2	1	2	2	1	2	2	2	2	2	2	2	2	3
Item Type[2]	MC	MC	MC	MC	MC	MC	MC	MC	MC	MC	SA	SA	SA	SA	SA	SA
Answer Key	A	C	D	B	C	B	D	D	B	C						
Total Possible Points	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2

[1]Content Strand: NO = Numbers & Operations, GM = Geometry & Measurement, FA = Functions & Algebra, DP = Data, Statistics, & Probability

[2]Item Type: MC = Multiple Choice, SA = Short Answer