NAEP 2013

Released Questions & Performance Data

NAEP DELAWARE
NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

Mathematics

Grade 4

The Mathematics Assessment

The NAEP mathematics assessment measures what students across the country know and are able to do in mathematics. Assessment questions are classified in two dimensions: content area and mathematical complexity. This booklet contains actual items from the 2013 NAEP assessments at grades 4 and 8.

NAEP questions are anchored in five broad areas of mathematical content:

(1) Number Properties and Operations;
(2) Measurement;
(3) Geometry;
(4) Data Analysis, Statistics, and Probability; and
(5) Algebra

Each item also makes certain demands on students' thinking, which determines the mathematical complexity of an item. Item complexity is assigned by one of three levels - low, moderate, or high.

The NAEP Mathematics Assessment contains multiple-choice questions, as well as short and extended constructed-response questions. Testing time on NAEP is divided evenly between multiple-choice and both types of constructed-response questions.

NAEP Mathematics Framework
Distribution of Item Pool Across Contexts

	Grade 4
Number Properties and Operations	40%
Measurement	20%
Geometry	15%
Data Analysis, Statistics, and Probability	10%
Algebra	15%

More information about the NAEP released questions and performance data for students, visit the NAEP Questions Tool at http://nces.ed.gov/nationsreportcard/itmrlsx/

For more information regarding the assessment frameworks, please visit http://www.nagb.org/publications/frameworks.htm

Each item within this document appears as it did during the NAEP 2013 administration. Additionally, each question is accompanied by a table that includes a description of the item and specific item details: grade level, difficulty level, item complexity, and content area.

Example of Question Details:

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Low
Description	Multiply three whole numbers			Content Area	Number Properties and Operations

NAEP Item Difficulty Level and Complexity	
Difficulty Level	• Easy – answered correctly by 60% or more students • Medium – answered correctly by 40% to 59% of students • Hard – answered correctly by fewer than 40% of students
Complexity	• Low – items requiring recall and recognition of previously learned concepts and principles • Moderate – items requiring more flexibility of thinking as well as informal methods of reasoning and problem solving • High – items that require more abstract thinking, planning, analysis, and creative thought

Each question also includes performance data for students in Delaware and the results for public students nationally. The example below illustrates the average scale score for students who selected each letter choice option and the percent of students who selected each option.

All Students – Performance Data									* Denotes the correct answer	
	A		B		C*		D		E	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	218	7	219	10	249	75	224	5	227	3
Delaware	‡	4	‡	10	251	76	‡	6	‡	3

‡ Reporting standards not met.

† Not applicable.

For short and extended response questions, each question is scored by hand and performance data is reported by how well the students answered based upon a pre-established rubric.

All Students – Performance Data										
	Incorrect		Partial		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	234	52	248	15	262	32	225	1	‡	#
Delaware	234	51	‡	14	263	35	‡	1	‡	#

More information on the NAEP scoring process is available at
http://nces.ed.gov/nationsreportcard/contracts/item_score.asp

1. Multiply: 4 x 50 x 9 =

A. 180
B. 360
C. 1,800
D. 3,600

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Low
Description	Multiply three whole numbers			Content Area	Number Properties and Operations

All Students – Performance Data										* Denotes the correct answer
	A		B		C*		D		E	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	218	7	219	10	249	75	224	5	227	3
Delaware	‡	4	‡	10	251	76	‡	6	‡	3

‡ Reporting standards not met.

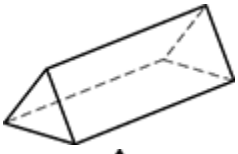
† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

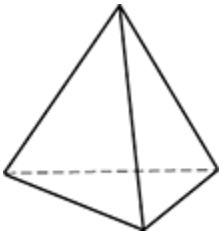
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

2. Kyle makes a 3-dimensional shape using 3 rectangles and 2 triangles as the faces. Which of these could be his shape?

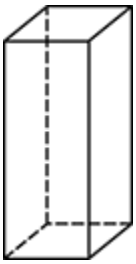
A.



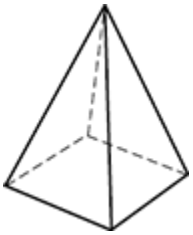
B.



C.



D.



Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Moderate
Description	Use description of faces to identify 3-D shape			Content Area	Geometry

All Students – Performance Data										* Denotes the correct answer
	A*		B		C		D		E	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	246	86	214	5	215	4	212	4	221	1
Delaware	249	86	‡	5	‡	3	‡	5	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

50-YARD RACE	
Girl	**Time (seconds)**
Christa	8.28
Kelly	7.82
Lorinda	7.9
Sonja	8.31
Tanya	8.2

3. The table shows the times for five girls who ran a 50-yard race.

The goal was for each girl to run the race in less than 8.25 seconds.

Which girls met this goal?

A. Christa and Sonja
B. Christa and Tanya
C. Kelly, Lorinda, and Sonja
D. Kelly, Lorinda, and Tanya

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Moderate
Description	Order decimal numbers from a table			Content Area	Number Properties and Operations

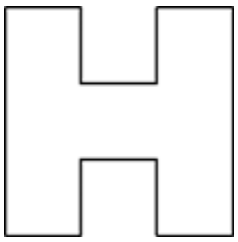
All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	224	25	219	4	218	4	251	67	224	1
Delaware	230	26	‡	3	‡	3	253	68	‡	#

‡ Reporting standards not met.

† Not applicable.

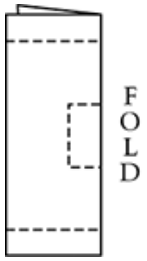
NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

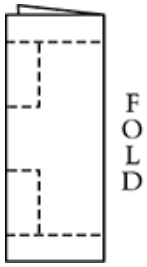


4. Which figure below, when cut on the dotted lines and unfolded, will look like the figure shown above?

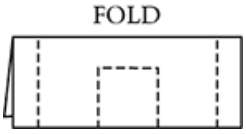
A.



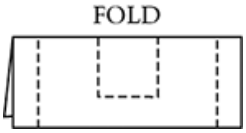
B.



C.



D.



Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Moderate
Description	Recognize result of cutting and folding paper			Content Area	Geometry

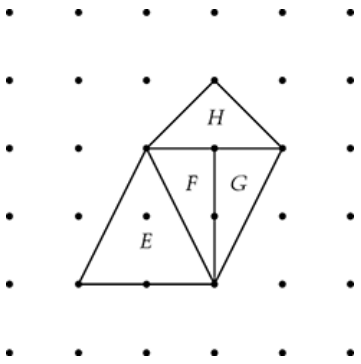
All Students – Performance Data										* Denotes the correct answer
	A		B		C*		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	230	17	239	34	251	41	233	6	230	1
Delaware	241	14	242	35	252	43	‡	7	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.



5. Which two figures are congruent?

A. *E* and *H*
B. *F* and *G*
C. *F* and *H*
D. *G* and *H*

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Low
Description	Identify congruent triangles			Content Area	Geometry

All Students – Performance Data										* Denotes the correct answer
	A		B*		C		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	229	12	246	80	222	3	218	3	233	1
Delaware	234	14	249	79	‡	3	‡	3	‡	1

‡ Reporting standards not met.

† Not applicable.

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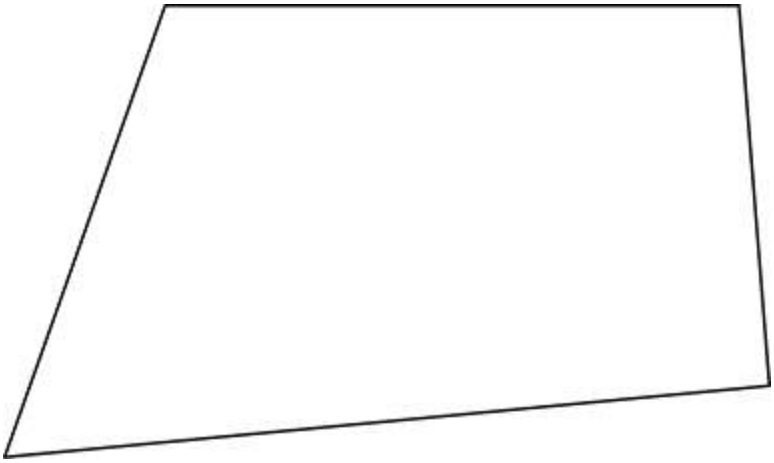
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.



Use inches for this question.

6. What is the perimeter of the figure?

A. 9 inches

B. $10\frac{1}{2}$ inches

C. 11 inches

D. $11\frac{1}{2}$ inches

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Moderate
Description	Measure to find perimeter of figure			Content Area	Measurement

All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	219	10	224	18	224	9	254	62	225	1
Delaware	228	13	230	18	‡	10	257	59	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

7. Which of these operations will give the smallest answer?

A. Subtract 1 from 1,000.
B. Multiply 1,000 by 1.
C. Divide 1,000 by 1.
D. Divide 1,000 by 10.

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Moderate
Description	Recognize effect of number operations			Content Area	Number Properties and Operations

All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	224	20	212	4	228	10	253	62	226	4
Delaware	227	16	‡	4	‡	7	254	68	‡	5

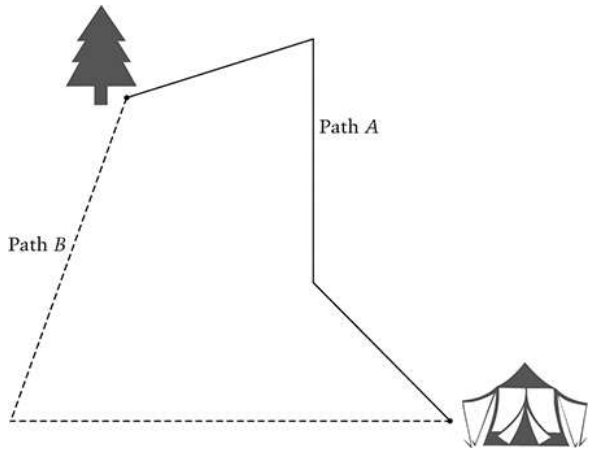
‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

8. **Use centimeters in this question.**



Which path from the tree to the tent is longer, path *A* or path *B*?

Answer: _____

How much longer?

Answer: _____ centimeters

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Moderate
Description	Measure and compare distances on a path.			Content Area	Measurement

All Students – Performance Data										
	Incorrect		Partial		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	234	52	248	15	262	32	225	1	‡	#
Delaware	234	51	‡	14	263	35	‡	1	‡	#

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

9. $\frac{2}{5}+\frac{3}{5}+\frac{4}{5}=$

A. $\frac{7}{5}$

B. $\frac{8}{5}$

C. $\frac{9}{5}$

D. $\frac{9}{15}$

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Low
Description	Add 3 fractions with like denominators			Content Area	Number Properties and Operations

All Students – Performance Data										* Denotes the correct answer
	A		B		C*		D		E	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	213	2	216	2	248	55	237	38	234	2
Delaware	‡	2	‡	2	250	60	241	34	‡	2

‡ Reporting standards not met.

† Not applicable.

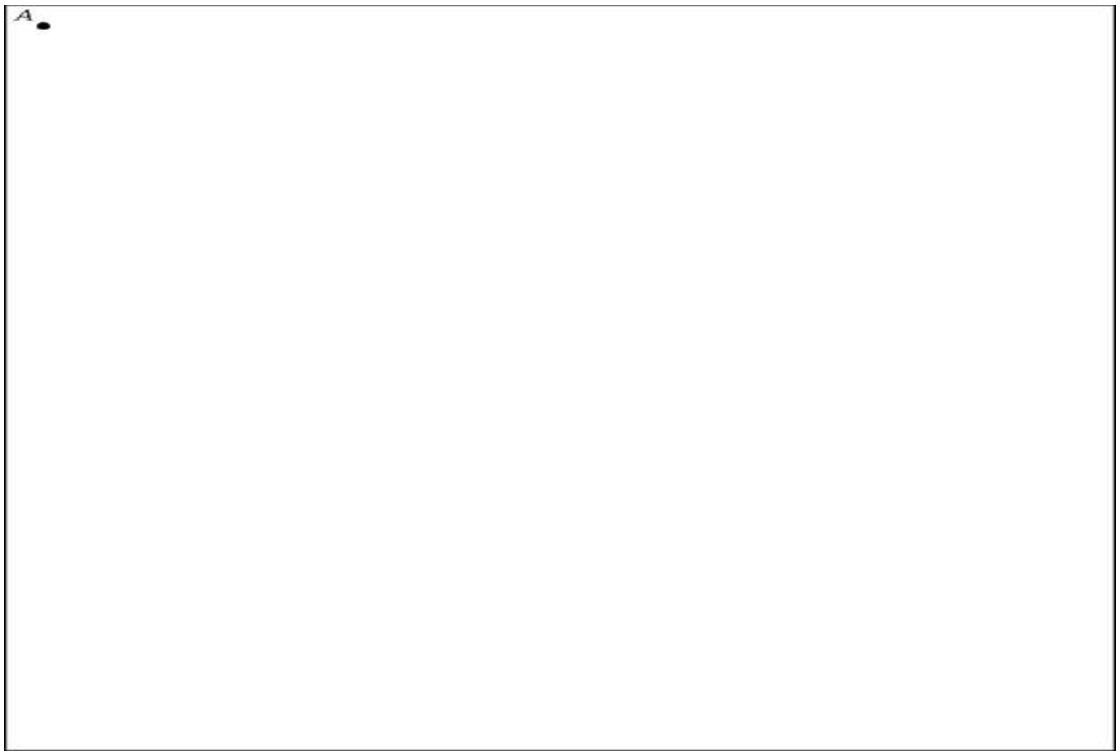
NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

10. **Use inches for this question.**

Start at point *A*. Draw a line segment that is $5\frac{1}{2}$ inches long.

DRAW YOUR LINE SEGMENT IN THE BOX.



Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Low
Description	Draw a line segment of given length			Content Area	Measurement

All Students – Performance Data								
	Incorrect		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	238	62	260	37	226	2	‡	#
Delaware	234	61	265	36	‡	#	‡	#

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

11. Lisa sold 15 cups of lemonade on Saturday and twice as many on Sunday. Which expression represents the total number of cups of lemonade she sold on both days?

A. $15 + 15$
B. 2×15
C. $15 + (2 \times 15)$
D. $2 \times (15 + 15)$

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Low
Description	Identify number sentence from verbal description			Content Area	Algebra

All Students – Performance Data										* Denotes the correct answer
	A		B		C*		D		E	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	227	16	239	44	257	32	233	8	227	1
Delaware	232	14	240	47	260	33	‡	6	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

HOW BUTTONS ARE SOLD

Type	Number of Buttons
Box of buttons	1,000 buttons
Package of buttons	100 buttons
Card of buttons	10 buttons
Single button	1 button

12. The art teacher bought buttons for a project.

    The teacher bought 1 box, 9 packages, 12 cards, and 5 single buttons.

    How many buttons did the teacher buy altogether?

    Answer: _____ buttons

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Moderate
Description	Use place value to determine value			Content Area	Number Properties and Operations

All Students – Performance Data										
	Incorrect		Partial		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	228	57	249	6	265	35	231	2	‡	#
Delaware	231	46	‡	9	263	44	‡	1	‡	#

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

13. **Use inches for this question.**

On line segment *AC*, mark point *B* so that the distance from *A* to *B* is twice the distance from *B* to *C*.

How long is segment *AB*?

Answer: _____ inches

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Moderate
Description	Measure to locate point on line segment			Content Area	Measurement

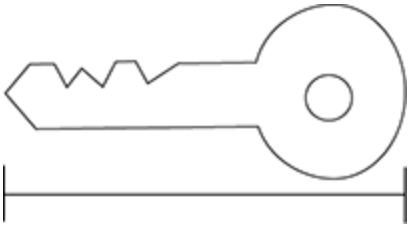
All Students – Performance Data										
	Incorrect		Partial		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	230	57	253	30	274	11	232	1	‡	#
Delaware	234	55	255	31	276	13	‡	1	‡	#

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.



Use millimeters for this question.

14. What is the length of the key in millimeters (mm)?

A. 5 mm
B. 8 mm
C. 50 mm
D. 53 mm

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Low
Description	Measure the length of an object			Content Area	Measurement

All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	229	37	234	19	243	13	264	29	235	2
Delaware	238	27	240	26	249	14	268	19	‡	3

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

3, 4, 6, 9, 13, ...

15. The growing number pattern above follows a rule.

Explain the rule.

Write a new growing pattern beginning with 21 that follows the same rule.

21, _____ , _____ , _____ , _____ , _____

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	High
Description	Construct new pattern from given pattern			Content Area	Algebra

All Students – Performance Data										
	Incorrect		Minimal		Partial		Satisfactory		Extended	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	217	26	235	13	246	21	253	16	267	20
Delaware	225	22	237	12	247	23	252	18	266	23

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

16. Kelly is playing outside. She is wearing shorts and a T-shirt. Which is most likely the temperature outside?

A. 0° F
B. 32° F
C. 85° F
D. 212° F

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Low
Description	Infer outside temperature based on context			Content Area	Measurement

All Students – Performance Data										* Denotes the correct answer
	A		B		C*		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	205	1	209	5	246	86	221	7	225	1
Delaware	‡	1	‡	3	246	87	‡	8	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

17. Part of a closed shape is shown above. When the shape is completed, which of these could it be?

A. Pentagon
B. Rectangle
C. Square
D. Triangle

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Low
Description	Recognize shape when completed			Content Area	Geometry

All Students – Performance Data										* Denotes the correct answer
	A*		B		C		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	243	95	216	2	221	1	216	1	227	1
Delaware	244	95	‡	4	‡	2	‡	1	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

18. A bag of potatoes weighs 12.4 pounds. Which of the following statements is true?

A. There are between 1 and 2 pounds of potatoes in the bag.
B. There are between 12 and 13 pounds of potatoes in the bag.
C. There are between 124 and 125 pounds of potatoes in the bag.
D. There are between 1,246 and 1,247 pounds of potatoes in the bag.

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Moderate
Description	Identify true statement about a quantity			Content Area	Number Properties and Operations

All Students – Performance Data										* Denotes the correct answer
	A		B*		C		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	236	14	247	78	215	7	202	1	225	1
Delaware	231	19	249	72	‡	7	‡	#	‡	2

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

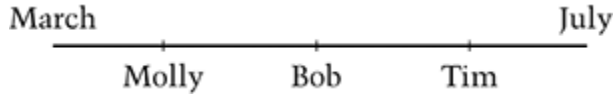
SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

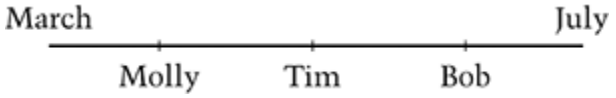
19. Tim, Bob, and Molly joined a club between March and July.

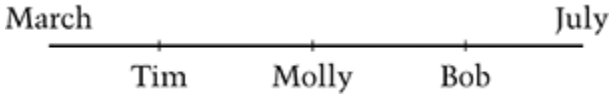
Tim joined the club after Bob.

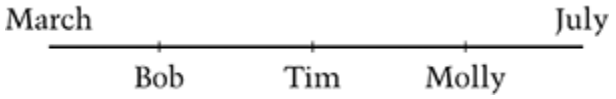
Molly joined the club before Bob.

Which time line shows the order in which they joined the club?

A. 

B. 

C. 

D. 

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Low
Description	List events in order they occurred			Content Area	Algebra

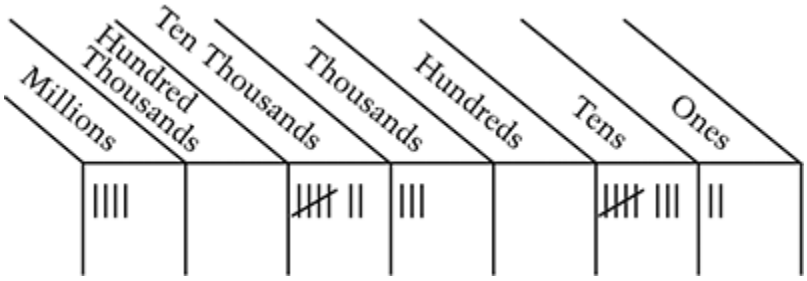
All Students – Performance Data										* Denotes the correct answer
	A*		B		C		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	249	75	219	5	218	11	224	9	225	1
Delaware	248	78	‡	4	‡	10	‡	7	‡	2

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.



20. Which number does the diagram above represent?

A. 4,703,082
B. 4,073,082
C. 473,820
D. 407,382

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Moderate
Description	Determine number expressed in place value diagram			Content Area	Number Properties and Operations

All Students – Performance Data										* Denotes the correct answer
	A		B*		C		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	225	10	246	82	208	3	212	4	226	1
Delaware	227	12	247	81	‡	2	‡	4	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

Louisa walked for 15 minutes from her house to Mary's house. She spent 25 minutes at Mary's house. She walked 10 minutes to the store. She bought groceries at the store. She walked 10 more minutes to get home.

21. What one additional piece of information is needed to find how many minutes Luisa was gone from her house?

A. What time Luisa left home
B. How fast Luisa walked
C. How far Luisa lives from Mary
D. How long Luisa was at the store

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Moderate
Description	Identify missing information to solve a problem			Content Area	Number Properties and Operations

All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	236	33	230	13	229	15	256	38	230	2
Delaware	236	32	‡	10	230	14	254	43	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

22. In the diagram, what is the relationship between the number of △ s and the number of ★ s

A. For every 1 △, there are 2 ★ s
B. For every 1 △, there are 10 ★ s
C. For every 2 △ s, there is 1 ★
D. For every 5 △ s, there is 1 ★

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Moderate
Description	Determine ration from a diagram			Content Area	Number Properties and Operations

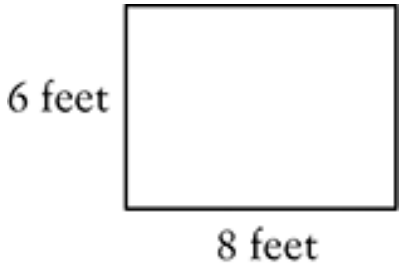
All Students – Performance Data										* Denotes the correct answer
	A*		B		C		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	250	72	216	14	231	6	225	7	228	1
Delaware	248	74	222	12	‡	6	‡	7	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.



23. A teacher drew this rectangle on a playground. Sam walked around the rectangle on the lines shown. How far did Sam walk?

A. 14 feet
B. 20 feet
C. 28 feet
D. 48 feet

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Low
Description	Determine the perimeter of a rectangle			Content Area	Measurement

All Students – Performance Data										* Denotes the correct answer
	A		B		C*		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	224	22	209	2	250	65	237	10	229	1
Delaware	226	23	‡	1	250	63	‡	11	‡	2

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

24. Kim, Les, Mario, and Nina each had a string 10 feet long.

Kim cut hers into fifths.

Les cut his into fourths.

Mario cut his into sixths.

Nina cut hers into thirds.

After the cuts were made, who had the longest pieces of string?

A. Kim
B. Les
C. Mario
D. Nina

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Low
Description	Compare unit fractions in context			Content Area	Number Properties and Operations

All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	226	6	224	3	222	32	255	59	228	1
Delaware	‡	5	‡	3	225	28	253	63	‡	2

‡ Reporting standards not met.

† Not applicable.

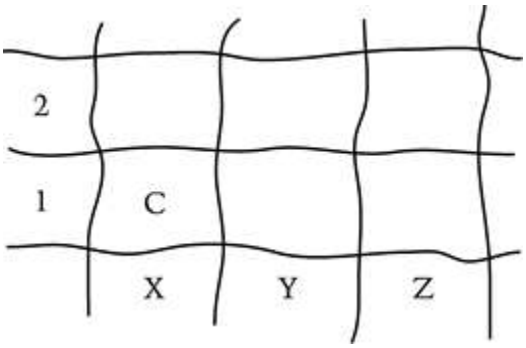
NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

Vegetable	Symbol	Section
Corn	C	X1
Beans	B	Y2, Z1, Z2
Tomatoes	T	X2, Y1

25. Andrea is planning a garden. She divided her garden into sections.

Use the information in the chart above to complete the grid below. In each section of the grid, write the symbol C, B, or T to show where each vegetable goes.



Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Low
Description	Mark locations on a grid			Content Area	Algebra

All Students – Performance Data								
	Incorrect		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	223	38	255	59	220	3	225	#
Delaware	226	37	253	62	‡	1	‡	#

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

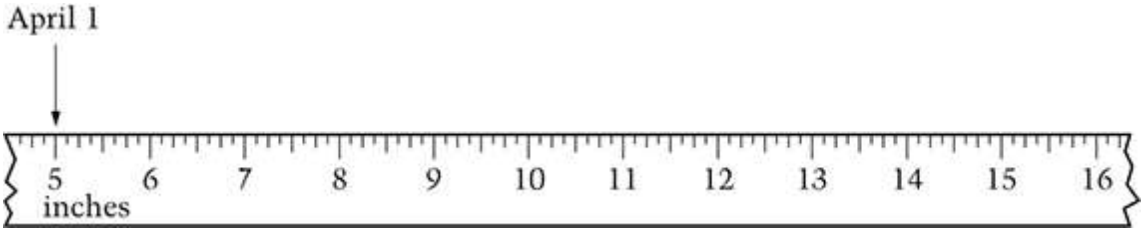
26. On April 1, Larry's puppy was 5 inches high. Larry measured the height of his puppy three more times during the year.

May 1: $6\frac{1}{2}$ inches

August 1: 10 inches

December 1: $15\frac{1}{4}$ inches

On the picture of a ruler below, mark the three measurements and label the dates of the three measurements.



Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Low
Description	Indicate measurements on a ruler			Content Area	Measurement

All Students – Performance Data										
	Incorrect		Partial		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	222	35	246	29	264	32	209	4	‡	#
Delaware	226	38	247	31	262	28	‡	2	‡	#

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

27. Which expression has the least value?

A. $2 + 7 + 0 + 4$
B. $(2 \times 7) + 0 + 4$
C. $2 + (7 \times 0) + 4$
D. $2 \times 7 \times 0 \times 4$

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Low
Description	Determine expression with least value			Content Area	Number Properties and Operations

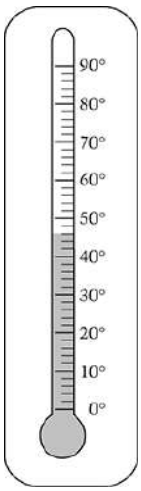
All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	226	19	237	9	240	35	254	36	228	2
Delaware	228	21	‡	7	244	36	253	33	‡	2

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.



28. What temperature does the thermometer show?

A. 43°
B. 46°
C. 52°
D. 54°

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Low
Description	Read temperature on a thermometer			Content Area	Measurement

All Students – Performance Data										* Denotes the correct answer
	A		B*		C		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	232	50	255	47	205	2	216	1	226	1
Delaware	235	56	257	39	‡	2	‡	1	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

29. Al, Bev, and Carmen are going on a ride at the park. Only 2 people can go on the ride at a time. They can pair up 3 different ways, as shown below.

Al and Bev

Al and Carmen

Bev and Carmen

Derek decides to join the group. How many different ways can the 4 students pair up?

Answer: _____

Show your work or explain how you got your answer.

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Moderate
Description	Determine number of ways friends can pair up			Content Area	Data Analysis & Prob.

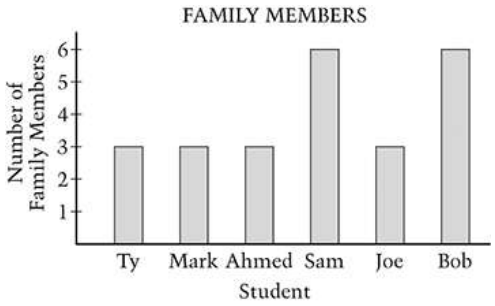
All Students – Performance Data										
	Incorrect		Partial		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	224	44	256	54	‡	#	225	1	227	#
Delaware	227	41	253	58	‡	#	‡	1	‡	#

‡ Reporting standards not met.

† Not applicable.

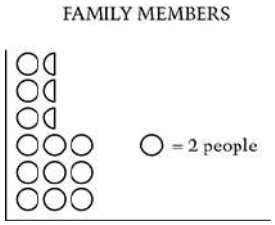
NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

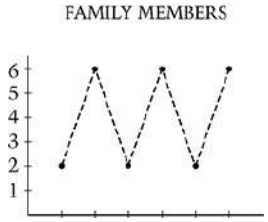


30. The graph above shows the number of family members for six students. Which graph below is the best summary of the data?

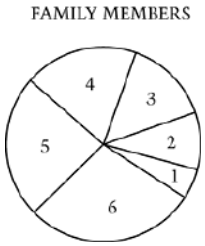
A.



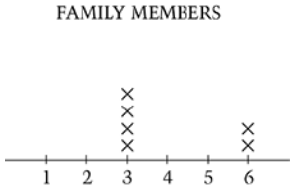
B.



C.



D.



Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Moderate
Description	Choose graph that best summarizes data			Content Area	Data Analysis & Prob.

All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	237	18	231	13	231	16	251	52	227	2
Delaware	239	18	‡	10	235	16	251	54	‡	3

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

$$\frac{1}{20}, \frac{4}{20}, \frac{7}{20}, \frac{10}{20}, \frac{13}{20}, \ldots$$

31. If the pattern shown continues, what is the first fraction in the pattern that will be greater than 1?

A. $\frac{20}{20}$

B. $\frac{21}{20}$

C. $\frac{22}{20}$

D. $\frac{25}{20}$

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Moderate
Description	Determine specific term in a fraction pattern			Content Area	Algebra

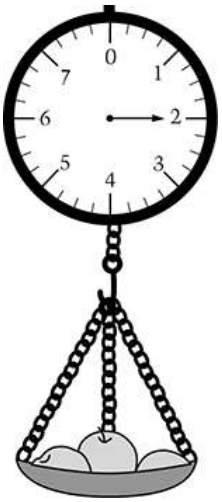
All Students – Performance Data										* Denotes the correct answer
	A		B		C*		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	234	31	246	21	255	31	230	17	‡	#
Delaware	235	27	248	23	254	30	233	20	‡	#

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.



32. How much do these apples weigh?

A. 2 cups
B. 2 feet
C. 2 pounds
D. 2 quarts

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Low
Description	Select unit for specific attribute			Content Area	Measurement

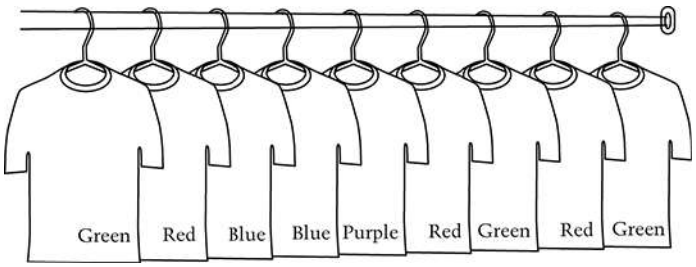
All Students – Performance Data										* Denotes the correct answer
	A		B		C*		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	212	4	206	2	242	91	222	3	226	1
Delaware	‡	3	‡	2	242	92	‡	3	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.



33. Mark has nine shirts in his closet as shown.

If Mark picks a shirt out of the closet without looking, which two colors have the greatest chance of being picked?

A. Blue and purple
B. Green and blue
C. Red and blue
D. Red and green

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Moderate
Description	Determine outcome with greatest probability using picture			Content Area	Data Analysis & Prob.

All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	218	8	223	8	221	9	247	74	226	1
Delaware	220	10	‡	8	‡	7	247	74	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

34. Last month a musical group had 13 concerts.

There were 12,000 tickets printed for each concert.

What was the total number of tickets printed for the concerts last month?

Answer: _____ tickets

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Low
Description	Multiply 5-digit number by 2-digit number in context			Content Area	Number Properties and Operations

All Students – Performance Data								
	Incorrect		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	225	49	256	49	231	2	‡	#
Delaware	226	45	254	53	‡	2	‡	#

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

35. Divide:

$$27\overline{)15{,}336}$$

A. 0.00176
B. 56.78
C. 568
D. 17,605

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Low
Description	Divide 5-digit number by 2-difit number			Content Area	Number Properties and Operations

All Students – Performance Data										* Denotes the correct answer
	A		B		C*		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	232	13	219	2	252	48	228	36	232	2
Delaware	237	13	‡	1	251	50	228	32	‡	3

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

INPUT-OUTPUT TABLE	
INPUT	**OUTPUT**
0	0
1	2
2	4
3	6

36. Which rule works for every pair of numbers in the INPUT-OUTPUT table?

A. Each OUTPUT number is equal to the INPUT number.
B. Each OUTPUT number is one more than the INPUT number.
C. Each OUTPUT number is two more than the INPUT number.
D. Each OUTPUT number is two times the INPUT number.

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Low
Description	Find rule for proportional change in input-output table			Content Area	Algebra

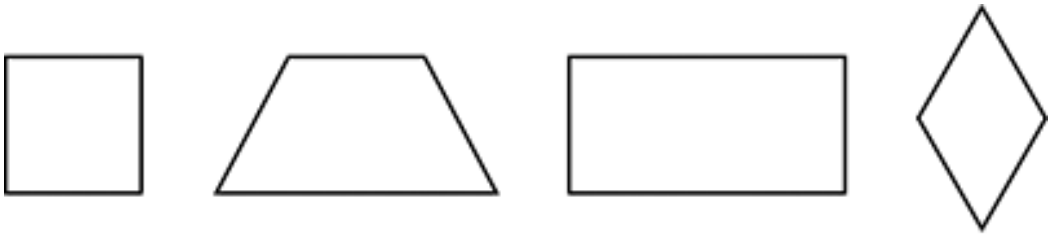
All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	219	8	224	17	226	18	253	55	226	1
Delaware	221	10	227	15	227	20	254	54	‡	2

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.



37. Which statement is true about all four shapes shown?

A. Each shape is a rectangle.
B. Each shape is a quadrilateral.
C. Each shape has two pairs of parallel sides.
D. Each shape has one or more right angles.

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Low
Description	Compare properties of simple figures			Content Area	Geometry

All Students – Performance Data										* Denotes the correct answer
	A		B*		C		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	211	3	250	60	230	20	220	16	226	1
Delaware	‡	2	249	53	238	22	226	21	‡	2

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment

38. Elsa works at the library.

She puts a total of 54 books onto 3 shelves.

Elsa puts at least 16 books on each shelf.

Complete the table to show one way Elsa could put the books on the shelves.

Shelf	Number of Books
1	
2	
3	
Total	54

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Moderate
Description	Rename whole number as sum of three numbers in context			Content Area	Number Properties and Operations

All Students – Performance Data								
	Incorrect		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	230	64	261	32	231	3	240	‡
Delaware	230	58	259	38	‡	3	‡	1

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

39. Ned is taller than both Paul and Juan.

Eric is shorter than Juan but taller than Paul.

Juan is 66 inches tall.

Which boy is the shortest? _____

Which boy is the tallest? _____

Question Details					
Grade	4	Difficulty Level	Easy	Complexity	Moderate
Description	Reason about relationships to reach a conclusion			Content Area	Algebra

All Students – Performance Data										
	Incorrect		Partial		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	213	13	230	33	253	53	230	2	‡	#
Delaware	216	12	232	32	254	54	‡	1	‡	#

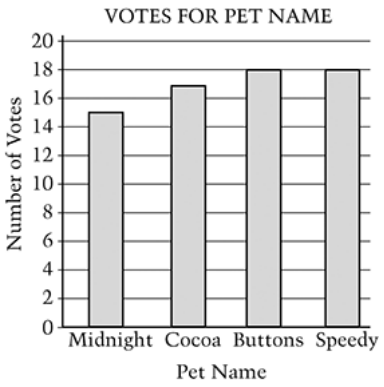
‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

The fourth graders voted for a name for their pet. The graph shows the result of the vote.



40. The students voted a second time. For the second vote, 4 students changed their vote from Buttons to Midnight. All other students voted for the same name they voted for the first time. Which name had the most votes the second time?

A. Midnight
B. Cocoa
C. Buttons
D. Speedy

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Moderate
Description	Compute with data from graph to solve a problem			Content Area	Data Analysis & Prob.

All Students – Performance Data										* Denotes the correct answer
	A*		B		C		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	254	50	219	4	224	14	228	30	232	2
Delaware	255	51	‡	4	226	12	230	31	‡	2

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

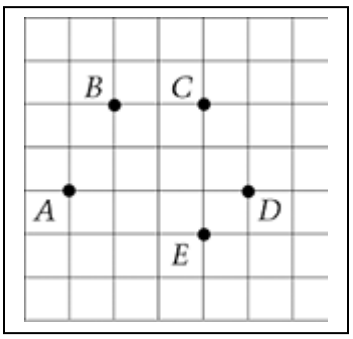
41. Pablo connected points, with straight lines, in the following order:

A to *B*

B to *C*

C to *D*

D to *A*



What shape did he make?

A. Hexagon
B. Pentagon
C. Rectangle
D. Trapezoid

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Low
Description	Construct and identify shape on coordinate grid			Content Area	Geometry

All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	222	17	237	27	225	4	250	50	230	1
Delaware	229	17	236	30	‡	4	251	47	‡	2

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

42. Andy has three cards, A, B, and C. Each card has one number on it.

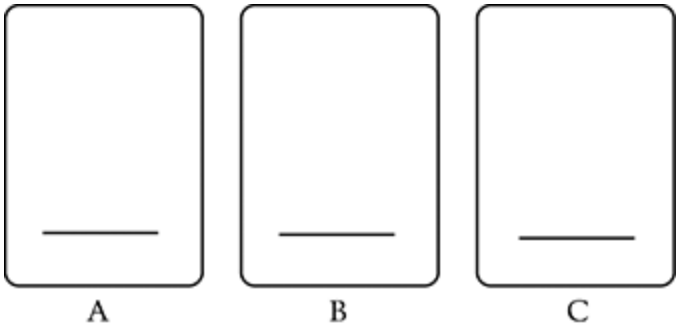
One card has the number 4 on it.

One card has the number 6 on it.

One card has the number 10 on it.

The number on card B is a factor of 8, and the number on card C is a factor of 12.

Write the correct number on each of the cards below so that they are the same as Andy's cards.



Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Moderate
Description	Identify and use factors to solve problems			Content Area	Number Properties and Operations

All Students – Performance Data										
	Incorrect		Partial		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	223	42	227	8	248	48	231	2	‡	#
Delaware	224	36	‡	7	256	55	‡	2	‡	#

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

43. There are 22 students in a class.

There are 12 girls in the class.

What is the ratio of the number of boys to the number of girls in the class?

A. 10 to 12
B. 10 to 22
C. 12 to 10
D. 22 to 12

Question Details					
Grade	4	Difficulty Level	Medium	Complexity	Moderate
Description	Use ratio to describe a situation in context			Content Area	Number Properties and Operations

All Students – Performance Data									* Denotes the correct answer	
	A*		B		C		D		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	250	50	233	10	239	21	221	17	231	2
Delaware	250	50	‡	9	244	23	220	15	‡	2

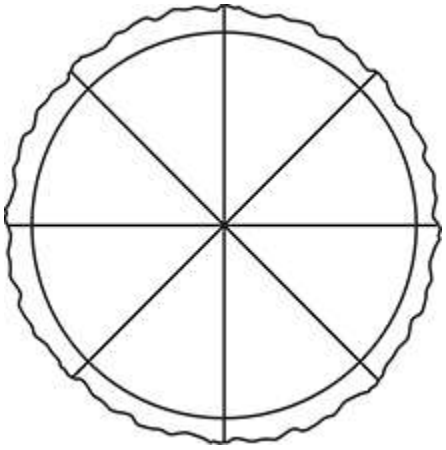
‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

Nick has a whole pizza.



44. Nick says he will eat $\frac{1}{2}$ of the pizza.

He says he will give $\frac{3}{8}$ of the pizza to Sam and $\frac{3}{8}$ of the pizza to Joe.

Can Nick do what he says?

◯ Yes ◯ No

Explain or show why or why not.

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Moderate
Description	Solve problems using operations with fractions			Content Area	Number Properties and Operations

All Students – Performance Data										
	Incorrect		Partial		Correct		Omitted		Off task	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	227	56	246	18	264	26	237	1	‡	#
Delaware	227	48	246	21	264	30	‡	1	‡	#

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

The table shows the length and the width of the gym floors in four schools.

GYM FLOORS		
School	**Length of Floor**	**Width of Floor**
Adams	95 ft.	40 ft.
Brooks	90 ft.	55 ft.
Carter	100 ft.	50 ft.
Dunbar	85 ft.	60 ft.

45. Each floor is in the shape of a rectangle.

Which school's gym floor has the greatest area?

A. Adams
B. Brooks
C. Carter
D. Dunbar

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	Moderate
Description	Determine which rectangular floor has greatest area			Content Area	Measurement

All Students – Performance Data										* Denotes the correct answer
	A		B		C		D*		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	221	3	227	4	239	68	252	23	237	1
Delaware	‡	2	‡	5	240	73	256	19	‡	2

‡ Reporting standards not met.

† Not applicable.

NOTE: The NAEP Mathematics scale ranges from 0 to 500. Some apparent differences between estimates may not be statistically significant.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

A yellow box holds 72 pencils.

[Y] is the same as [72].

Two red boxes hold as many pencils as 1 yellow box.

[R] [R] is the same as [Y].

Three blue boxes hold as many pencils as 1 red box.

[B] [B] [B] is the same as [R].

46. How many pencils does 1 blue box hold?

Answer: _____

Show or explain how you got your answer.

Question Details					
Grade	4	Difficulty Level	Hard	Complexity	High
Description	Reason using equivalences to make & explain conclusions			Content Area	Algebra

All Students – Performance Data										
	Incorrect		Minimal		Partial		Correct		Omitted	
	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.	Avg. score	Row Pct.
National Public	236	61	256	12	264	5	276	15	237	6
Delaware	227	61	‡	10	‡	4	277	18	‡	6

‡ Reporting standards not met.

† Not applicable.

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SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2013 Mathematics Assessment.

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