

# Smarter Balanced Assessment Consortium:

Mathematics Practice Test Scoring Guide  
Grade 5

08/01/2016



### About the Practice Test Scoring Guides

The Smarter Balanced Mathematics Practice Test Scoring Guides provide details about the items, student response types, correct responses, and related scoring considerations for the Smarter Balanced Practice Test items. The items selected for the Practice Test are designed to reflect

- a broad coverage of claims and targets that closely mirror the summative blueprint.
- a range of student response types.
- a breadth of difficulty levels across the items, ranging from easier to more difficult items.

It is important to note that all student response types are not fully represented on every practice test, but a distribution can be observed across all the practice tests. The items presented are reflective of refinements and adjustments to language based on pilot test results and expert recommendations from both content and accessibility perspectives.

Within this guide, each item is presented with the following information<sup>1</sup>:

- Claim: statement derived from evidence about college and career readiness
- Domain: a broad content area that contains related targets and standards (i.e., Geometry)
- Target: statement that bridges the content standards and the assessment evidence that supports the claim
- Depth of Knowledge (DOK): measure of complexity considering the student's cognitive process in response to an item. There are four DOK levels, a 4 being the highest level.
- Common Core State Standards for Mathematical Content (CCSS-MC)
- Common Core State Standards for Mathematical Practice (CCSS-MP)
- Percent Receiving (Number) Point(s): Percent of students that received the point(s) indicated following the scoring of student responses
- Static presentation of the item: static presentation of item from test administration system
- Static presentation of student response field(s): static presentation of response field from test administration system
- Answer key or exemplar: expected student response or example response from score point value
- Rubric and applicable score points for each item: score point representations for student responses

The following items are representative of the kinds of items that students can expect to experience when taking the Computer Adaptive Test (CAT) portion of the summative assessment for grade 5. A separate document is available that provides a grade 5 sample performance task and scoring guide.

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<sup>1</sup> Most of these terms (Claim, Domain, Target, DOK, etc.) are defined in various other Smarter Balanced documents, as well as the Common Core State Standards for Mathematics. Refer to the *Content Specifications for the Summative Assessment of the Common Core State Standards for Mathematics* for more information.

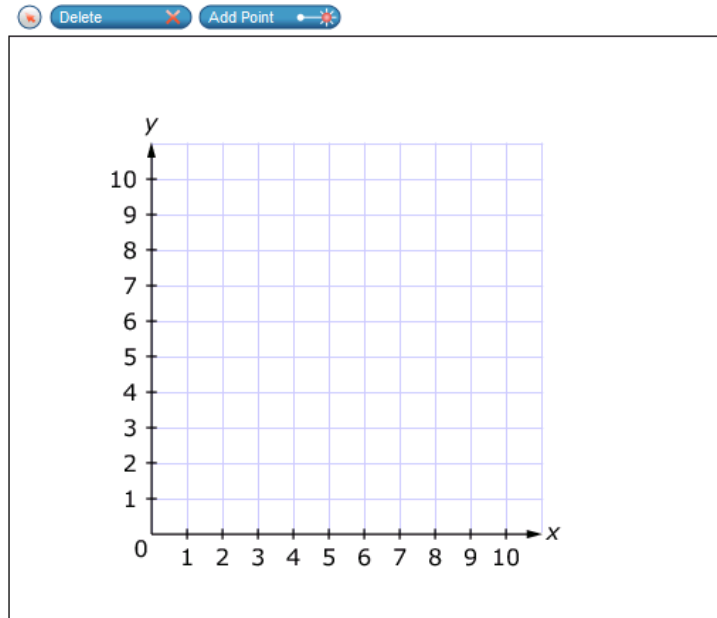
Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#1	1	G	J	1	5.G.A.2	N/A	59

Use the **Add Point** tool to plot each point on the coordinate plane.

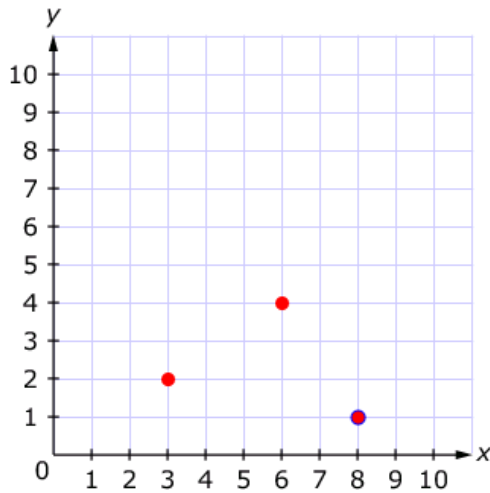
Part A: Plot the point (3, 2).

Part B: Plot the point (6, 4).

Part C: Plot the point (8, 1).



**Exemplar:** (shown below)



**Rubric:** (1 point) The student plots all three points correctly.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#2	3	NBT	E	2	5.NBT.B	3	61

Chevon is using a calculator to multiply 5426 and 30. He enters  $5426 \times 300$  by mistake.

What can Chevon do to correct his mistake?

- Ⓐ add 270 to the product
- Ⓑ subtract 270 from the product
- Ⓒ multiply the product by 10
- Ⓓ divide the product by 10

**Key:** D

**Rubric:** (1 point) The student selects the action that would correct Chevon's mistake.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#3	1	OA	A	1	5.OA.A	N/A	59

Which expression correctly shows the sum of the product of 9 and 5 and the difference of 24 and 6?

- Ⓐ  $9 + (5 \times 24) - 6$
- Ⓑ  $(9 \times 5) + (24 - 6)$
- Ⓒ  $(9 \times 5) - (24 + 6)$
- Ⓓ  $9 - (5 \times 24) + 6$

**Key:** B

**Rubric:** (1 point) The student selects the correct expression.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#4	1	NBT	D	1	5.NBT.B.6	N/A	58

Which equation has the same unknown value as  $405 \div 15 = \square$  ?

- A  $405 \times \square = 15$
- B  $\square \div 405 = 15$
- C  $15 \times \square = 405$
- D  $\square \div 15 = 405$

**Key:** C

**Rubric:** (1 point) The student selects the correct equation.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#5	3	NBT	A	2	5.NBT.A.2	3	60

Lisa claims that when multiplying **any** number between 0 and 10 by 100, the product is **greater** than 100.

What is a possible number that can be multiplied by 100 to show that Lisa's claim is not correct? Enter your answer in the response box.

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:** any number less than or equal to 1 and greater than 0 (e.g., 1/6, 0.5, 1)

**Rubric:** (1 point) The student enters a correct number.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#6	1	NF	F	2	5.NF.B.5	8	55

Enter a positive value for  $n$  that makes this statement true:  
 $1 \times n$  is less than 1 but greater than 0.

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$



Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#7	1	NF	F	1	5.NF.B.3	N/A	54

Which expression is equal to  $\frac{7}{8}$ ?

- Ⓐ  $7 \div 8$
- Ⓑ  $8 \times 7$
- Ⓒ  $8 \div 7$
- Ⓓ  $7 \times 8$

**Key:** A

**Rubric:** (1 point) The student selects the correct expression.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#8	2	MD	A	2	5.MD.C.5	7	52

A rectangular prism has a volume of 42 cubic units. The length is 3 units. The width is 2 units. What is the height?

- Ⓐ 6 units
- Ⓑ 7 units
- Ⓒ 14 units
- Ⓓ 21 units

**Key:** B

**Rubric:** (1 point) The student selects the correct height.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#9	1	NBT	D	1	5.NBT.B.5	N/A	48

Enter the product.

$$2684 \times 24$$

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:** 9135

**Rubric:** (1 point) The student enters the correct product.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#10	1	NF	F	2	5.NF.B.7	N/A	46

There are 7 math folders on a classroom shelf. This is  $\frac{1}{3}$  of the total number of math folders in the classroom.

Enter the total number of math folders in the classroom.

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:** 21

**Rubric:** (1 point) The student enters the correct number of folders.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#11	4	NF	E	2	5.NF.B.7	4	48

Which situation can be represented by this equation?

$$4 \div \frac{1}{8} = \square$$

- Ⓐ Jack has 4 pieces of fabric. Each piece is  $\frac{1}{8}$  of a yard long. How many yards of fabric does Jack have?
- Ⓑ Jack has 4 pieces of fabric. He gets  $\frac{1}{8}$  more yards of fabric. How many yards of fabric does Jack have now?
- Ⓒ Jack has 4 yards of fabric. He gives away  $\frac{1}{8}$  of his pieces of fabric. How many pieces of fabric does Jack have left?
- Ⓓ Jack has 4 yards of fabric. He cuts the fabric into pieces  $\frac{1}{8}$  of a yard long. How many pieces of fabric does Jack have?

**Key:** D

**Rubric:** (1 point) The student identifies the correct situation.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#12	1	NF	E	1	5.NF.A.1	N/A	47

Roland's family drove  $4\frac{6}{10}$  kilometers from their home to the gas station.

They drove  $2\frac{30}{100}$  kilometers from the gas station to the store.

Which expression can be used to determine the number of kilometers Roland's family drove altogether?

- (A)  $6 + \frac{180}{1000}$
- (B)  $4 + 2 + \frac{36}{110}$
- (C)  $6 + \frac{6}{100} + \frac{30}{100}$
- (D)  $4 + 2 + \frac{60}{100} + \frac{30}{100}$

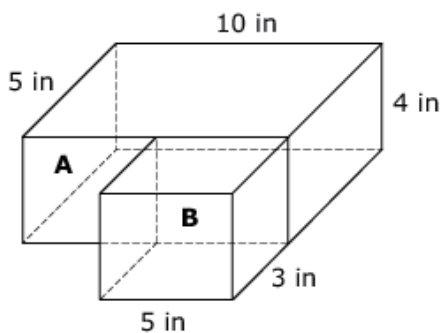
**Key:** D

**Rubric:** (1 point) The student selects the correct expression.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#13	1	MD	I	2	5.MD.C.5	N/A	36

Megan arranges Box A and Box B on her study table.

- The dimensions of Box A are 10 by 5 by 4 inches.
- The dimensions of Box B are 5 by 3 by 4 inches.



Enter the combined volume, in cubic inches, of both boxes.

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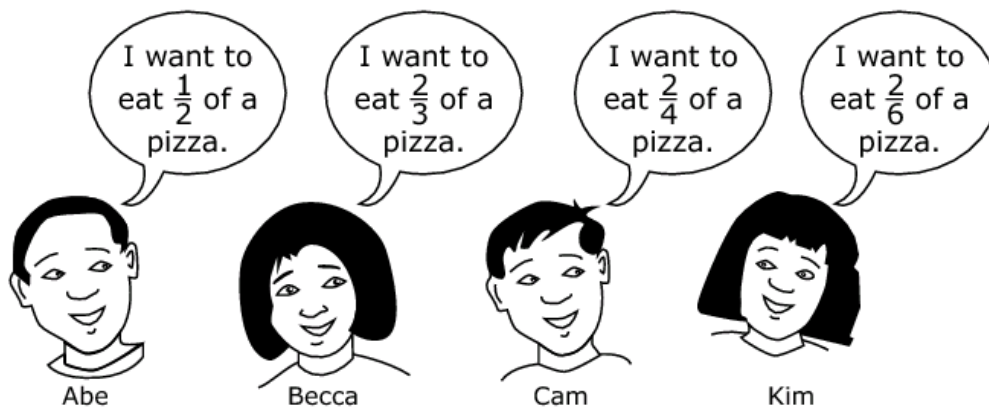
1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:** 260

**Rubric:** (1 point) The student selects the correct number of cubic inches.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#14	3	NF	D	3	5.NF.A.2	1	24

Four students plan to share the cost for ordering pizza. Each student says how much of a whole pizza they want to eat, as shown.



- Abe and Becca only want pepperoni pizza.
- Cam and Kim only want cheese pizza.
- Cheese and pepperoni pizzas can only be ordered as whole pizzas.

What is the **minimum** number of whole pizzas they must order so that each student has as much of the kind of pizza they say they want to eat?

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:** 3

**Rubric:** (1 point) The student enters the correct minimum number of pizzas.



Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#15	2	NBT	A	2	5.NBT.B.7	6	24

Use this table to solve the problem.

Item	Cost per Package
Napkins	\$1.89
Forks	\$1.79

Allie buys 2 packages of napkins and 3 packages of forks for a class party. She gives the store clerk \$10.00. What is the total amount of money that Allie should receive back from the clerk?

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:** 0.85 or .85

**Rubric:** (1 point) The student enters the correct amount of money.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#16	1	NBT	C	1	5.NBT.3	7	46

Which expression is equal to 5,007.992?

- Ⓐ  $5 \times 1,000 + 7 \times 1 + 9 \times \left(\frac{1}{10}\right) + 9 \times \left(\frac{1}{100}\right) + 2 \times \left(\frac{1}{1,000}\right)$
- Ⓑ  $5 \times 1,000 + 7 \times 1 + 9 \times 10 + 9 \times 100 + 2 \times 1,000$
- Ⓒ  $5 \times 1,000,000 + 7 \times 1,000 + 9 \times \left(\frac{1}{1}\right) + 9 \times \left(\frac{1}{10}\right) + 2 \times \left(\frac{1}{100}\right)$
- Ⓓ  $5 \times 1,000,000 + 7 \times 1,000 + 9 \times 100 + 9 \times 10 + 2 \times 1$

**Key:** A

**Rubric:** (1 point) The student selects the correct expression.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#17	3	G	F	3	5.G.B	2	3

A **regular polygon** is a polygon with:

- all sides the same length, and
- all angles the same size.

Decide if each shape is always, sometimes, or never a regular polygon. Click in the table to respond.

	Always a Regular Polygon	Sometimes a Regular Polygon	Never a Regular Polygon
Acute triangle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obtuse triangle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Right triangle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rectangle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Square	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



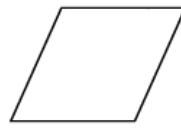
**Exemplar:** (shown at right)

**Rubric:** (1 point) The student selects the correct designations for each polygon.

	Always a Regular Polygon	Sometimes a Regular Polygon	Never a Regular Polygon
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

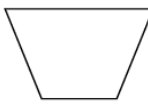

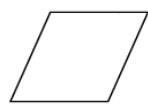
Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#18	1	G	K	2	5.G.B.3	N/A	8

Determine which category each polygon belongs to. Select **all** boxes that apply. Shapes may belong to more than one category. If the polygon is **not** a square, parallelogram, or quadrilateral, select None of These.

	Square	Parallelogram	Quadrilateral	None of These
 Trapezoid	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 Hexagon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
 Rhombus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Exemplar:** (shown at right)

**Rubric:** (1 point) The student correctly and completely indicates the shape(s) that classify each polygon shown.

	Square	Parallelogram	Quadrilateral	None of These
 Trapezoid	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
 Hexagon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
 Rhombus	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 2 Points	Percent Receiving 1 Point
#19	4	MD	A	3	5.MD.C.5	6	10	40

Justin is packing a container with books.

- The dimensions of each book are 8 inches by 6 inches by 2 inches.
- The dimensions of the container are 16 inches by 12 inches by 12 inches.
- All of the books and the container are rectangular prisms.

### Part A

How many books can fit in the container if the books are packed so that there is no unused space in the container?

Enter your response in the first response box.

### Part B

Each book weighs 2 pounds. The maximum weight the container can hold is 40 pounds.

What is the greatest number of books that can fit in the container without going over the container's weight limit?

Enter your response in the second response box.

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:** 24 and 20

**Rubric:** (2 points) The student enters a correct number of books in each response box.

(1 point) The student enters a correct number of books in only one response box.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#20	1	NF	F	2	5.NF.B.6	N/A	8

A rattlesnake at a zoo is  $5\frac{1}{2}$  feet long. A corn snake at a zoo is  $\frac{3}{4}$  of that length. Enter the length, in feet, of the corn snake.

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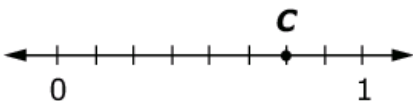
1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:**  $33/8$  or  $4\frac{1}{8}$  or equivalent

**Rubric:** (1 point) The student enters the correct length.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#21	1	NF	E	2	5.NF.A.2	N/A	25

Chris and Ben walked home from school. The distance Chris walked, in miles, is represented by point C on the number line.



Ben walked  $\frac{1}{4}$  mile less than Chris walked.

Enter the distance, in miles, Ben walked.

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:** 1/2 or equivalent

**Rubric:** (1 point) The student enters the correct distance.



Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#22	3	NF	C	2	5.NF.B	1, 6	12

Gordon has paper strips that are all equal in length. He lines them up end to end.

When the line of paper strips is 3 feet long, Gordon says there are 12 paper strips.

What is the length, **in feet**, of one paper strip if Gordon is correct?

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:**  $\frac{3}{12}$  or  $\frac{1}{4}$  or equivalent

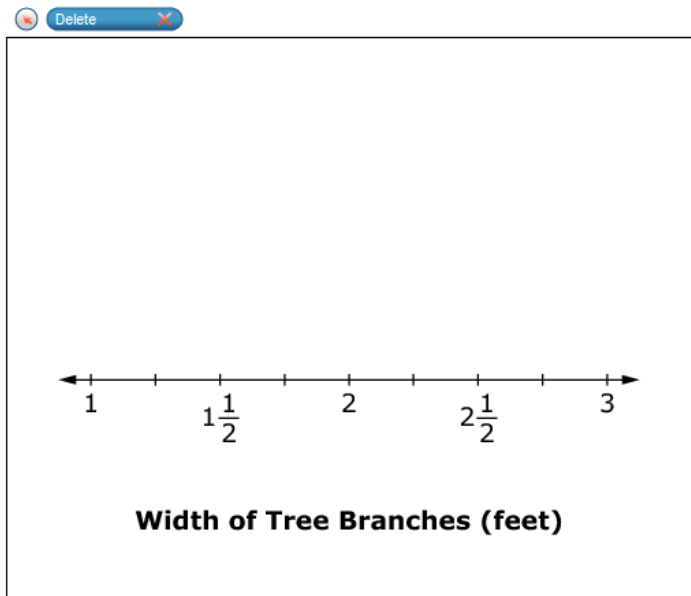
**Rubric:** (1 point) The student enters the correct length of one paper strip.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#23	4	MD	F	2	5.MD.B.2	5	13

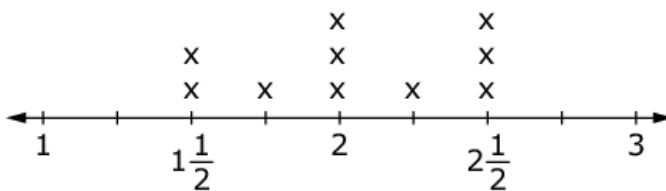
A scientist measures the width of ten different tree branches, **in inches**.

The results, in inches, are 18, 24, 27, 30, 21, 18, 24, 30, 30, and 24.

Complete the line plot to represent all of the results, **in feet**, by clicking above each tick mark to make an X appear.



**Exemplar:** (shown below)



**Width of Tree Branches (feet)**

**Rubric:** (1 point) The student correctly completes the line plot.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#24	3	NBT	B	3	5.NBT.B	8	19

Sam multiplies a number,  $n$ , by a two-digit number.

Which statement is true?

- Ⓐ When  $n$  is a one-digit number, the product will always have three digits.
- Ⓑ When  $n$  is a two-digit number, the product will have four or five digits.
- Ⓒ When  $n$  is a three-digit number, the product will always have four digits.
- Ⓓ When  $n$  is a four-digit number, the product will have five or six digits.

**Key:** B

**Rubric:** (1 point) The student identifies the statement that **must** be true.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#25	1	MD	I	1	5.MD.C.5	4	25

Jonas has a file cabinet in the shape of a right rectangular prism.

- The area of the base of the file cabinet is 450 square inches.
- The height of the file cabinet is 53 inches.

Enter the volume, in cubic inches, of the file cabinet.

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:** 23850

**Rubric:** (1 point) The student enters the correct volume in cubic inches.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#26	1	NBT	C	2	5.NBT.A.3	N/A	40

Determine if each comparison is true or false. Select True or False for each comparison.

	True	False
$8.81 > 8.9$	<input type="checkbox"/>	<input type="checkbox"/>
$11.34 < 11.340$	<input type="checkbox"/>	<input type="checkbox"/>
$7.634 > 7.67$	<input type="checkbox"/>	<input type="checkbox"/>

**Key:** F, F, F

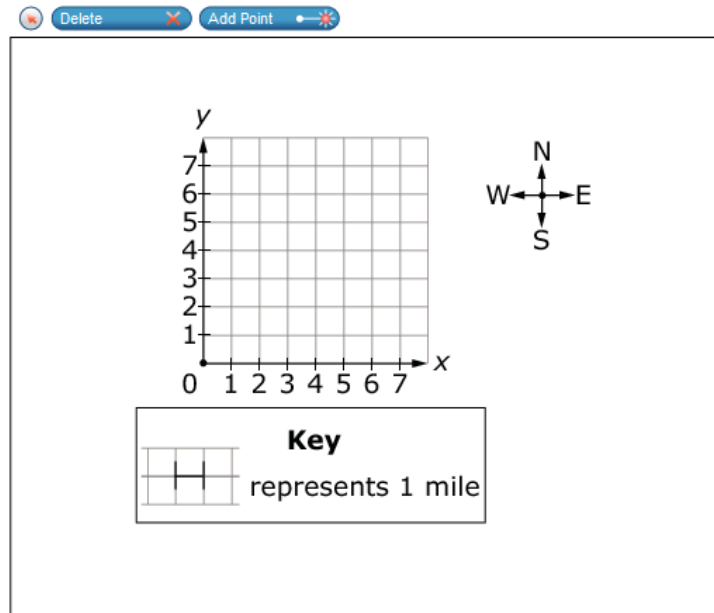
**Rubric:** (1 point) The student correctly identifies each comparison as true or false.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#27	2	G	C	2	5.G.A.1	4	39

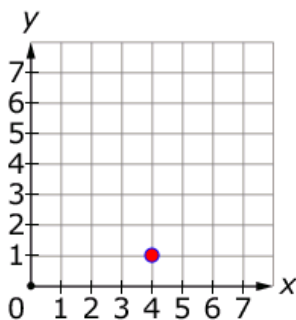
Calvin and Shana are in the same school.

- The school is located at  $(0, 0)$ .
- Calvin travels 2 miles east and 1 mile north to get home from school.
- Shana travels twice the number of miles east and the same number of miles north as Calvin to get home.

Use the Add Point tool to plot Shana's house.



**Exemplar:** (shown below)



**Rubric:** (1 point) The student plots the correct point at  $(4, 1)$ .

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#28	1	MD	G	1	5.MD.A.1	N/A	32

Enter the number of **quarts** equal to 48 cups.

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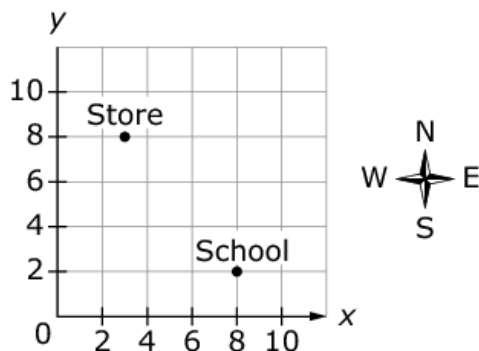
1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$


**Key:** 12

**Rubric:** (1 point) The student enters the correct number of quarts.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#29	3	G	E	3	5.G.A.2	3	27

Lisa and Kara go to the same school. After school, they plan to walk to the store. The location of the store and the school are plotted on the coordinate grid.



**Key**  
 represents 2 blocks

Lisa says, "I think we should walk 6 blocks north and 5 blocks west to get to the store."

Kara says, "No, I think it's shorter if we walk 3 blocks west, 4 blocks north, 2 blocks west, and then 2 more blocks north."

Whose route is the shortest?

- (A) Lisa, because her route is the most direct from the school to the store.
- (B) Kara, because her route takes short cuts from the school to the store.
- (C) Both Lisa and Kara, because each of their routes are the same distance.
- (D) Neither Lisa nor Kara, because their routes do not end with them arriving at the store.

**Key:** C

**Rubric:** (1 point) The student identifies the shortest route.



Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 1 Point
#30	1	NF	E	1	5.NF.A.1	N/A	30

Enter the sum.

$$\frac{17}{9} + \frac{5}{3}$$

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**Key:** 32/9 or 3 5/9 or equivalent

**Rubric:** (1 point) The student enters the correct sum.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP	Percent Receiving 2 Points	Percent Receiving 1 Point
#31	3	MD	A	2	5.MD.C.5	2	21	8

Isiah uses exactly 60 cubes to build a rectangular prism. Each cube has side lengths of 1 unit.

**Part A**

Drag numbers to show the dimensions Isiah could use to make a prism with one side length of 10 units.

**Part B**

Drag numbers to show the dimensions Isiah could use to make a prism **without** any side lengths of 10 units.

1

2

3

4

5

6

10

12

✖ Delete

**Part A**

Length =  units

Width =  units

Height =  units

**Part B**

Length =  units

Width =  units

Height =  units

**Key:** For Part A: any combination of factors that equal 60 and include 10 as one of the factors (e.g., 10, 6, 1 or 10, 2, 3)

For Part B: any combination of factors that equal 60 and do not include 10 as one of the factors (e.g., 2, 5, 6 or 1, 5, 12 or 3, 4, 5).

**Rubric:** (2 points) The student completes both sets of dimensions correctly.

(1 point) The student completes only one set of dimensions correctly.