

# Smarter Balanced Assessment Consortium:

## Practice Test Scoring Guide Grade 6 Mathematics

05/14/2014

*Developed and published by CTB McGraw-Hill Education LLC  
Under contract with OSPI/Smarter Balanced Assessment Consortium*



Copyright © 2014 Smarter Balanced Assessment Consortium



## 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.
- a sample of performance tasks with open-ended response types that allow students to demonstrate knowledge related to critical thinking and application.

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
- Domain
- Target<sup>2</sup>
- Depth of Knowledge (DOK)
- Common Core State Standards for Mathematical Content (CONTENT)
- Common Core State Standards for Mathematical Practice (MP)
- Answer key or exemplar
- Static presentation of the item
- Static presentation of student response field(s)
- Rubric and applicable score points for each item

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 6. A separate document is available that provides a Grade 6 sample performance task and scoring guide.

---

<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.

<sup>2</sup> When more than one target is presented, the first one listed is considered the primary target for the item.

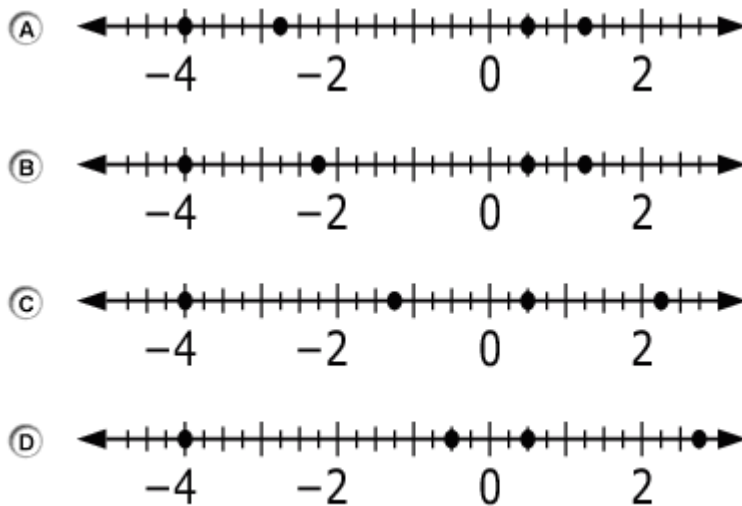
Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#1	1	NS	D	1	6.NS.C.6c	N/A	A

**1791**



Which number line shows the correct locations of **all** the given values?

$$\frac{1}{2}, -4, -2\frac{3}{4}, 1\frac{1}{4}$$



**Key:** A

**Rubric:** (1 point) Student selects the correct number line.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#2	1	NS	B	1	6.NS.A.1	N/A	$\frac{1}{2}$

**1779**



The equation shown has an unknown number.

$$\square \div \frac{2}{3} = \frac{3}{4}$$

Enter a fraction that makes the equation true.

← → ↶ ↷ ✖

1	2	3	+	-	*	÷
4	5	6	<	=	>	
7	8	9	$\frac{\square}{\square}$	$\square^\square$	()	
0	.	-				

**Key:**  $\frac{1}{2}$  or its equivalent

**Rubric:** (1 point) Student enters a correct fraction.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#3	1	NS	D	2	6.NS.C.7b	N/A	See exemplar

**1802**



Sea level is 0 feet in elevation. The elevation of land represents its height above or below sea level. This table shows the lowest elevation in some states.

State	Lowest Elevation (ft)
Arizona	72
California	- 282
Louisiana	- 68
Tennessee	178

Determine whether each statement about the lowest elevations is correct. Select True or False for each statement.

	True	False
The elevation at the lowest point in California is higher than the lowest point in Louisiana.	<input type="checkbox"/>	<input type="checkbox"/>
The elevation at the lowest point in Tennessee is farther from 0 than the elevation at the lowest point of Louisiana.	<input type="checkbox"/>	<input type="checkbox"/>
The elevation at the lowest point in Louisiana is higher than the lowest point in California.	<input type="checkbox"/>	<input type="checkbox"/>

**Exemplar:**

	True	False
The elevation at the lowest point in California is higher than the lowest point in Louisiana.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The elevation at the lowest point in Tennessee is farther from 0 than the elevation at the lowest point of Louisiana.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The elevation at the lowest point in Louisiana is higher than the lowest point in California.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Rubric:** (1 point) Student correctly identifies if each equation is true or false (FTT).

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#4	2	NS	A	2	6.NS.B.3	2, 4	See exemplar

**1855**



Carlos needs 1.7 meters of wire for one project and 0.8 meter of wire for another project.

**Part A:**

Shade the model to represent the total amount of wire Carlos needs. Each full row represents 1.0 meter.

**Part B:**

Carlos has 2.4 meters of wire.

Does Carlos have enough wire?

- If he does, answer how much wire he will have left over.
- If he does **not**, answer how much more he needs.

Drag the value into one of the boxes.

- 0.1
- 0.2
- 0.3
- 0.4
- 0.5
- 0.9
- 1.6
- 2.5
- 3.2
- 4.1

Delete

**Part A**

Each full row = 1.0 meter



**Part B**

He will have  meters of wire left over.

OR

He needs  more meters of wire.

**Exemplar:** (shown at right)

**Rubric:**

(2 points) Student correctly shades the model and answers Part B correctly.

(1 point) Student correctly answers Part A OR Part B, not both.

**Part A**

Each full row = 1.0 meter



**Part B**

He will have  meters of wire left over.

OR

He needs  more meters of wire.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#5	1	EE	F	1	6.EE.B.5	N/A	See exemplar

## 1806



Consider the inequality  $x > 7$ .

Determine whether each value of  $x$  shown in the table makes this inequality true. Select Yes or No for each value.

	Yes	No
22	<input type="checkbox"/>	<input type="checkbox"/>
-7	<input type="checkbox"/>	<input type="checkbox"/>
13	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>
-39	<input type="checkbox"/>	<input type="checkbox"/>

**Exemplar:** (shown at right)

	Yes	No
22	<input checked="" type="checkbox"/>	<input type="checkbox"/>
-7	<input type="checkbox"/>	<input checked="" type="checkbox"/>
13	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input checked="" type="checkbox"/>
-39	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Rubric:** (1 point) Student correctly identifies if each value makes the inequality true (YNYNN).

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#6	3	G	B	3	6.G.A.2	3, 5	See exemplar

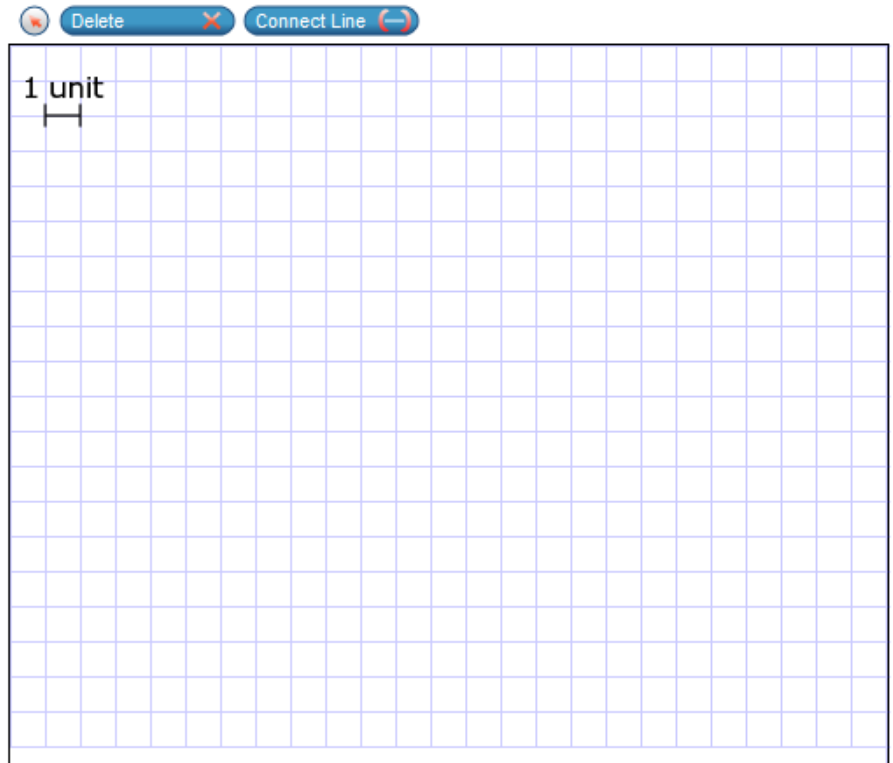
## 1858



Micah constructs a rectangular prism with a volume of 360 cubic units. The height of his prism is 10 units.

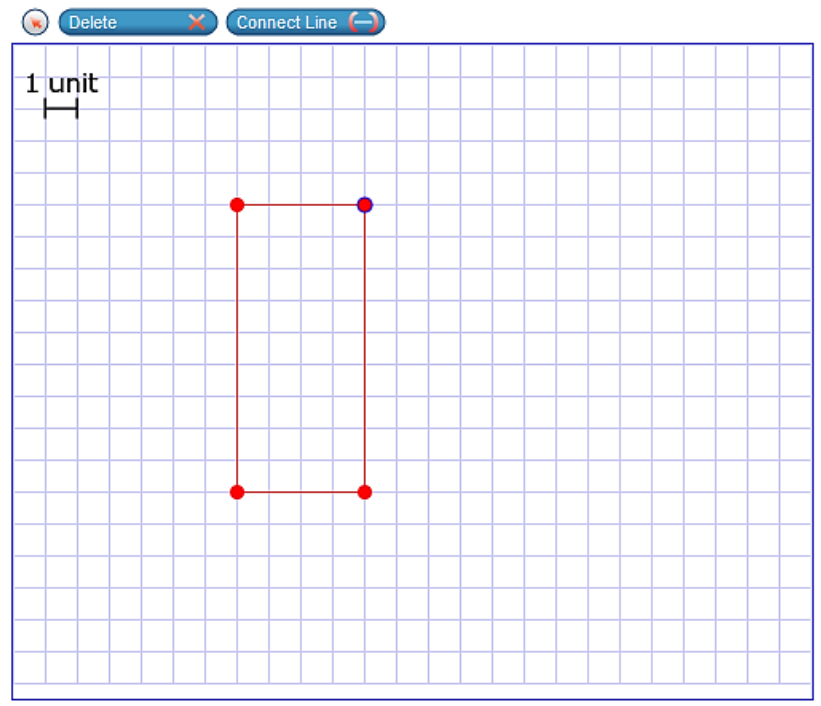
Micah claims that the base of the prism must be a square.

Use the Connect Line tool to draw a base that shows Micah's claim is incorrect.



**Exemplar:** (shown at right)  
Other rectangles with an area of 36 square units will also score correctly and receive full credit. Only a 6 by 6 square will not receive credit.

**Rubric:**  
(1 point) Student draws a rectangle with an area of 36 square units.





Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#7	1	EE	F	1	6.EE.B.5	N/A	See exemplar

## 1805



Select **all** equations that have  $x = 3$  as a solution.

- $x + 7 = 10$
- $3 + x = 3$
- $x \cdot 3 = 1$
- $4 \cdot x = 12$

**Exemplar:** (shown at right)

**Rubric:** (1 point) Student selects the first and last options.

- $x + 7 = 10$
- $3 + x = 3$
- $x \cdot 3 = 1$
- $4 \cdot x = 12$

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#8	1	NS	B	1	6.NS.A.1	N/A	10

**1784**



A recipe requires  $\frac{3}{4}$  cup of nuts for 1 cake.

Enter the maximum number of cakes that can be made using  $7\frac{1}{2}$  cups of nuts.

←
→
↶
↷
✖

1	2	3
4	5	6
7	8	9
0	.	-

**Key:** 10

**Rubric:** (1 point) Student enters the correct number of cakes.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#9	1	NS	C	1	6.NS.B.2	N/A	689

**1790**



Divide.

$$16,536 \div 24$$

Enter the quotient.

←
→
↶
↷
✖

1	2	3
4	5	6
7	8	9
0	.	-

**Key:** 689

**Rubric:** (1 point) Student enters the correct quotient.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#10	1	EE	E	1	6.EE.A.4	N/A	See exemplar

**1829**



Select **all** the expressions that are equivalent to  $8(t + 4)$ .

- $2(4t + 2)$
- $8t + 32$
- $4t + 4 + 4t$
- $(8 + t) + (8 + 4)$
- $(8 \times t) + (8 \times 4)$

**Exemplar:** (shown at right)

**Rubric:** (1 point) Student selects the second and last options.

- $2(4t + 2)$
- $8t + 32$
- $4t + 4 + 4t$
- $(8 + t) + (8 + 4)$
- $(8 \times t) + (8 \times 4)$

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#11	3	NF	A	3	5.NF.B.4	2, 3, 7	See exemplar

**1857**

Look at the equation.

$$\frac{2}{3} \times \frac{\square}{\square} = n$$

Sarah claims that for any fraction multiplied by  $\frac{2}{3}$ ,  $n$  will be less than  $\frac{2}{3}$ .

To convince Sarah that this statement is only sometimes true:

**Part A:** Drag one number into each box so the product,  $n$ , is less than  $\frac{2}{3}$ .

**Part B:** Drag one number into each box so the product,  $n$ , is **not** less than  $\frac{2}{3}$ .

**Exemplar:** (shown at right)

**Rubric:** (1 point) Student drags one number into each box to create an equation where  $n$  is less than  $\frac{2}{3}$  in Part A, and drags one number into each box to create an equation to show that Sarah's claim is incorrect in Part B (e.g., Part A  $\frac{1}{3}$ , Part B  $\frac{2}{1}$ ). This exemplar response represents only one possible solution. Other correct responses are possible.



- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Delete

**Part A: Product  $n$  is less than  $\frac{2}{3}$**

$$\frac{2}{3} \times \frac{\square}{\square} = n$$

**Part B: Product  $n$  is not less than  $\frac{2}{3}$**

$$\frac{2}{3} \times \frac{\square}{\square} = n$$

**Part A: Product  $n$  is less than  $\frac{2}{3}$**

$$\frac{2}{3} \times \frac{1}{3} = n$$

**Part B: Product  $n$  is not less than  $\frac{2}{3}$**

$$\frac{2}{3} \times \frac{2}{1} = n$$

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#12	1	RP	A	2	6.RP.A.3c	N/A	200

**1777**



Enter the unknown value that makes this statement true:

30% of  is 60.

←
→
↶
↷
✖

1	2	3
4	5	6
7	8	9
0	.	-

**Key:** 200

**Rubric:** (1 point) Student enters the correct value.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#13	1	RP	A	2	6.RP.A.3b	N/A	450

**1776**



Carl types 180 words in 2 minutes.

Enter the number of words Carl types in 5 minutes at this rate.

← → ↶ ↷ ✖

1	2	3
4	5	6
7	8	9
0	.	-

**Key:** 450

**Rubric:** (1 point) Student enters the correct number of words.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#14	4	NS, NF	A	3	6.NS.A, 5.NF.B.3	1, 6	$\frac{3}{5}$

**1810**



Darcy likes to eat peanut butter and raisins on apple slices. On each apple slice she puts  $\frac{1}{16}$  cup of peanut butter and 8 raisins.

Darcy has  $\frac{2}{5}$  cup of peanut butter and 80 raisins. She eats a whole number of apple slices until the peanut butter is all gone. What fraction of the 80 raisins did she eat?

Enter the fraction in the response box.

← → ↶ ↷ ✖

1	2	3	+	-	*	÷
4	5	6	<	=	>	
7	8	9	$\frac{\square}{\square}$	$\square^\square$	()	
0	.	-				

**Key:**  $\frac{3}{5}$  or its equivalent

**Rubric:** (1 point) Student enters a correct fraction.



Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#15	1	EE	F	1	6.EE.B.7	N/A	B

**1852**

Ms. Stone buys groceries for a total of \$45.32. She now has \$32.25 left.

Which equation could be used to find out how much money Ms. Stone had before she bought the groceries?

- (A)  $\$45.32x = \$32.25$
- (B)  $x - \$45.32 = \$32.25$
- (C)  $x + \$45.32 = \$32.25$
- (D)  $x + \$32.25 = \$45.32$

**Key:** B

**Rubric:** (1 point) Student selects the option with a correct equation.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#16	1	EE	G	1	6.EE.C.9	N/A	See exemplar

**1807**



In the morning, Emily studied 40 minutes for a math exam. Later that evening, Emily studied for  $x$  more minutes.

Enter an **equation** that represents the total number of minutes,  $y$ , Emily studied for the math exam.

← → ↶ ↷ ✖

1	2	3	x	y		
4	5	6	+	-	*	÷
7	8	9	<	=	>	
0	.	-	$\frac{\square}{\square}$	$\square^\square$	( )	

**Key:**  $40 + x = y$  or an equivalent equation

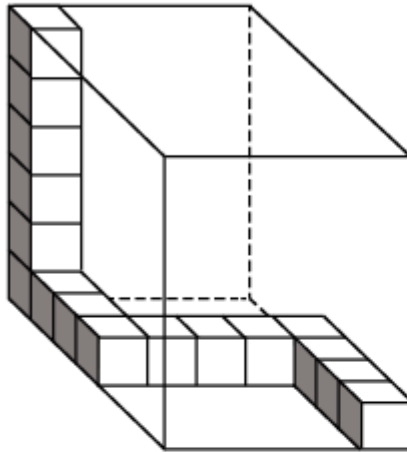
**Rubric:** (1 point) Student enters a correct equation.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#17	2	NS, MD	D	2	6.NS.B.3, 5.MD.C.5	6, 7	210

**1974**



Brady started to fill the box shown with some unit cubes.



Enter the total number of unit cubes needed to completely fill the box. Include the unit cubes already shown in your total.

←
→
↶
↷
✖

1	2	3
4	5	6
7	8	9
0	.	-

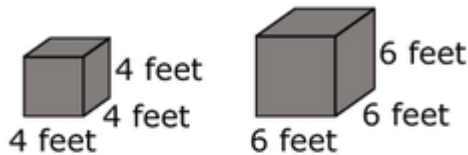
**Key:** 210

**Rubric:** (1 point) Student enters the correct number of cubes.

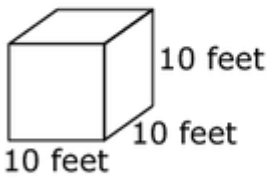
Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#18	3	G	C	3	6.G.A.2	1, 3	See Exemplar

## 1958

Two shaded cubes are shown.



Ben states that the combined volume of these two shaded cubes is equal to the volume of this cube:



**Part A:** Select whether Ben's statement is true or false.

**Part B:** Drag numbers into the box to show the combined volume of the shaded cubes.

**Exemplar:** (shown at right)

**Rubric:** (1 point) Student selects "False" and enters the correct value of 280 for the combined volume.

0

1

2

3

4

5

6

7

8

9

Delete ✕

**A. Ben's statement**

True
False

**B. Combined volume**

cubic feet

**A. Ben's statement**

True
False

**B. Combined volume**

280

cubic feet

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#19	3	NS	F	2	6.NS.C.6b	1, 2	See exemplar

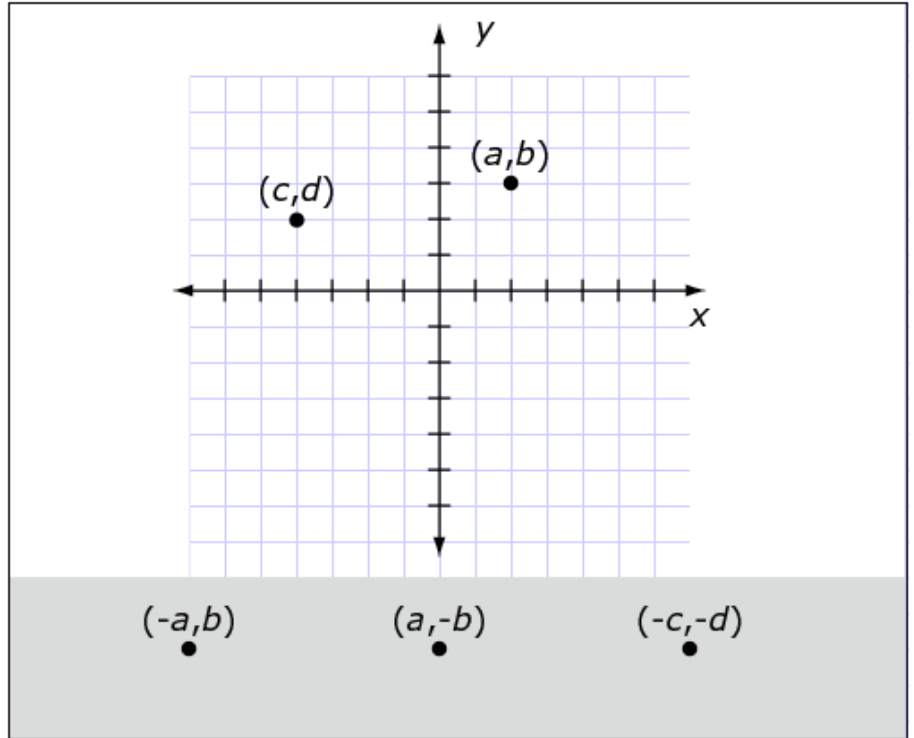
## 1859



Two ordered pairs are shown on a coordinate grid.

Drag each ordered pair to its correct location on the coordinate grid.

- $(-a, b)$
- $(a, -b)$
- $(-c, -d)$



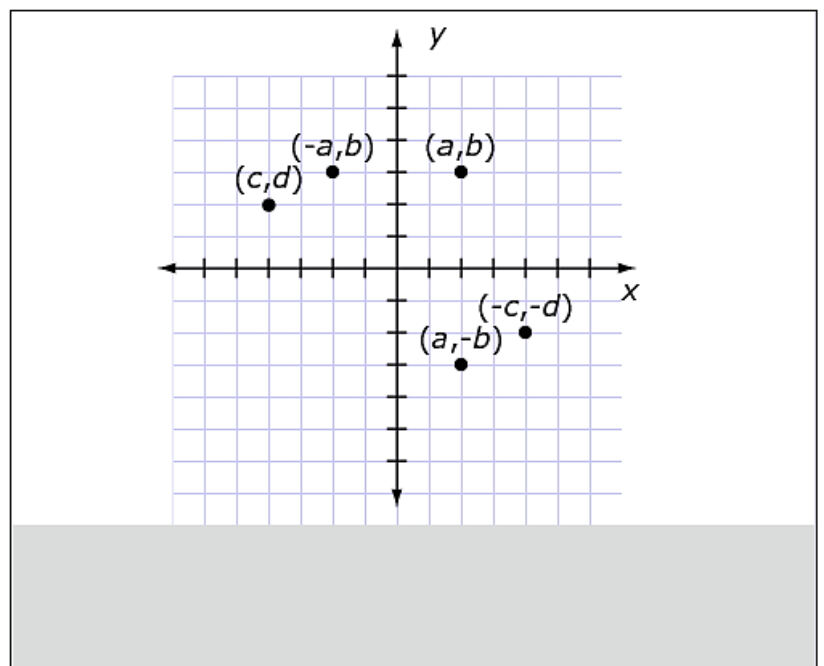
**Exemplar:** (shown at right)

**Rubric:**

(3 points) Student correctly locates all three coordinates.

(2 points) Student correctly locates two coordinates.

(1 point) Student correctly locates only one coordinate.

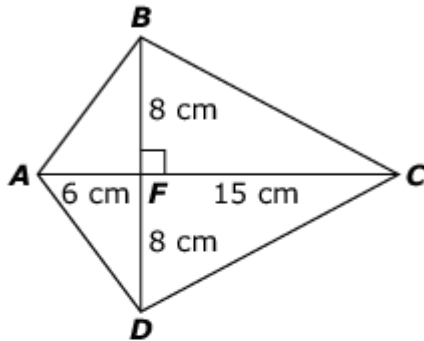


Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#20	1	G	H	2	6.G.A.1	N/A	168

## 1796



Consider this figure.



Enter the total area of figure  $ABCD$  in square centimeters.

←
→
↶
↷
✖

1	2	3
4	5	6
7	8	9
0	.	-

**Key:** 168

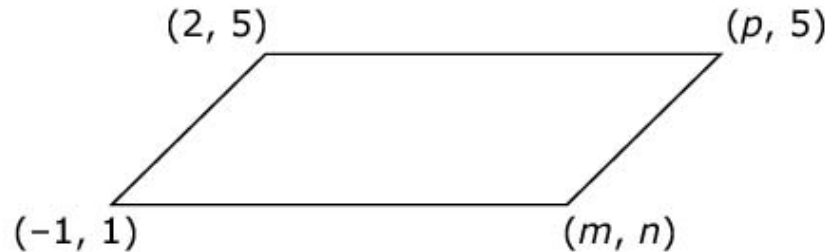
**Rubric:** (1 point) Student enters the correct value for the area of the figure.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#21	3	G	D	3	6.G.A3	2, 3	See exemplar

**1989**



The coordinates of this parallelogram are given.



Determine if each statement is True or False.

	True	False
The length of the longer side is $p - 2$ .	<input type="checkbox"/>	<input type="checkbox"/>
The length of the longer side is $n + 1$ .	<input type="checkbox"/>	<input type="checkbox"/>
The short side is 4 units in length.	<input type="checkbox"/>	<input type="checkbox"/>
$n = 5$	<input type="checkbox"/>	<input type="checkbox"/>
$m > n$	<input type="checkbox"/>	<input type="checkbox"/>
$p = 2$	<input type="checkbox"/>	<input type="checkbox"/>

**Exemplar:** (shown at right)

**Rubric:**

(2 points) Student correctly selects "True" or "False" for each statement (TFFFTF).

(1 point) Student correctly classifies four or five statements.

	True	False
The length of the longer side is $p - 2$ .	<input checked="" type="checkbox"/>	<input type="checkbox"/>
The length of the longer side is $n + 1$ .	<input type="checkbox"/>	<input checked="" type="checkbox"/>
The short side is 4 units in length.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
$n = 5$	<input type="checkbox"/>	<input checked="" type="checkbox"/>
$m > n$	<input checked="" type="checkbox"/>	<input type="checkbox"/>
$p = 2$	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#22	1	EE	E	1	6.EE.A.2c	6	45

## 1804



The formula  $C = \frac{5}{9}(F - 32)$  is used to convert the temperature in degrees Fahrenheit ( $F$ ) to the temperature in degrees Celsius ( $C$ ).

Enter the temperature in degrees Celsius ( $C$ ) equal to 113 degrees Fahrenheit ( $F$ ).

←
→
↶
↷
✖

1	2	3
4	5	6
7	8	9
0	.	-

**Key:** 45

**Rubric:** (1 point) Student enters the correct temperature.



Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#23	1	SP	I	1	6.SP.A.1	N/A	See exemplar

## 1970



A statistical question is one where you expect to get a variety of answers. Determine whether each question can be classified as a statistical question. Select Yes or No for each question.

	Yes	No
How many hours a week do people exercise?	<input type="checkbox"/>	<input type="checkbox"/>
How many hours are there in a day?	<input type="checkbox"/>	<input type="checkbox"/>
How many rainbows have students seen this month?	<input type="checkbox"/>	<input type="checkbox"/>

**Exemplar:** (shown at right)

	Yes	No
How many hours a week do people exercise?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
How many hours are there in a day?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
How many rainbows have students seen this month?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Rubric:** (1 point) Student correctly selects "Yes" or "No" for each question (YNY).

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#24	3	NS	E	2	6.NS.C.7	3	See exemplar

**1959**



$n$

Delete

Let  $n$  be an integer. Tracy claims that  $-n$  must be less than 0. To convince Tracy that his statement is only sometimes true:

**Part A:**

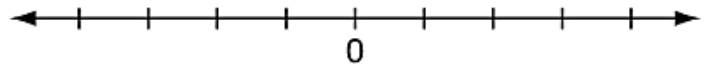
Drag  $n$  to the number line so that the value of  $-n$  is less than 0.

**Part B:**

Drag  $n$  to the number line so that the value of  $-n$  is greater than 0.

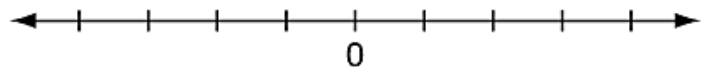
**Part A:**

**Value of  $-n$  is less than 0**



**Part B:**

**Value of  $-n$  is greater than 0**



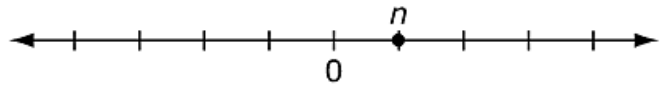
**Exemplar:** (shown at right)

**Rubric:** (1 point) Student places the  $n$  in the correct locations for both *Part A* and *Part B*. Accept all responses for *Part A* where  $n$  is to the right of zero and *Part B* where  $n$  is to the left of zero.

No credit is earned if  $n$  is placed on zero (0) in *Part A* and/or *Part B*.

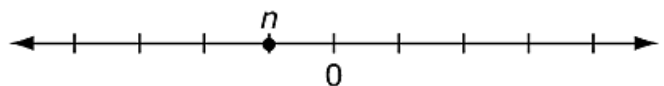
**Part A:**

**Value of  $-n$  is less than 0**



**Part B:**

**Value of  $-n$  is greater than 0**



Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#25	4	EE	F, G	3	6.EE.B.8	1, 2, 4	See exemplar

## 1798



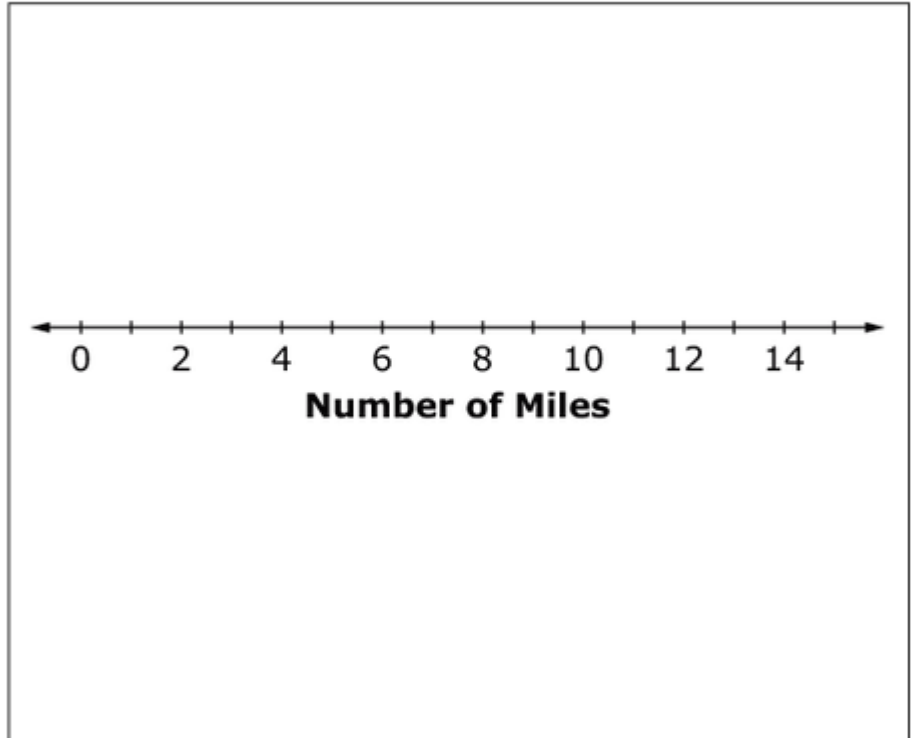
Delete ✖ Connect Line ↔

A boat takes 3 hours to reach an island 15 miles away.

The boat travels:

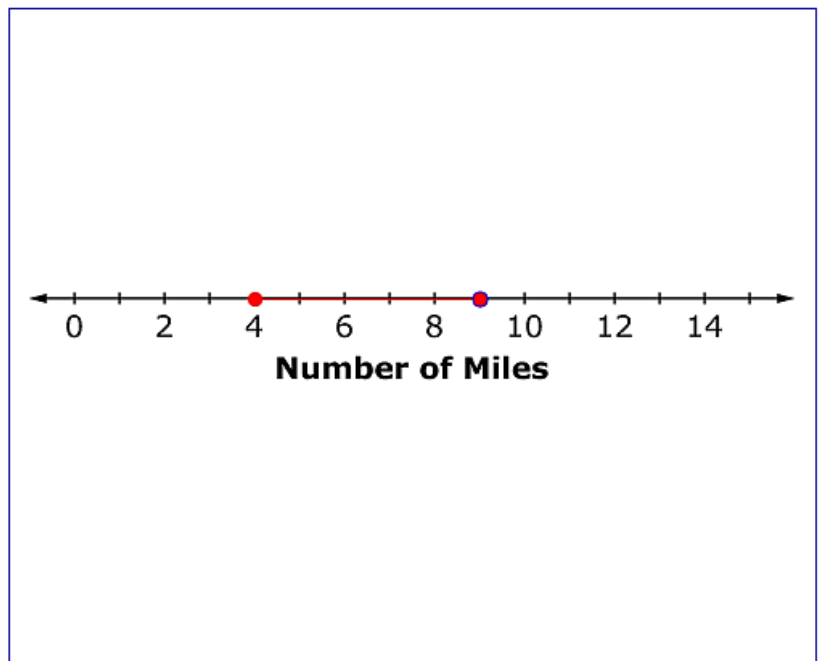
- at least 1 mile but no more than 6 miles during the first hour
- at least 2 miles during the second hour
- exactly 5 miles during the third hour

Use the Connect Line tool to show the range of miles the boat could have traveled during the **second** hour, given the conditions above.



**Exemplar:** (shown at right)

**Rubric:** (1 point) Student draws a segment to indicate the correct range of miles from 4 to 9.



Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#26	1	RP	A	1	6.RP.A.3d	N/A	B

## 1778



Select the value that completes this expression for converting 10 yards to inches.

$$\left(\frac{10 \text{ yards}}{1}\right) \left(\frac{\square}{\square}\right) \left(\frac{12 \text{ inches}}{1 \text{ foot}}\right)$$

- (A)  $\frac{1 \text{ yard}}{36 \text{ inches}}$
- (B)  $\frac{3 \text{ feet}}{1 \text{ yard}}$
- (C)  $\frac{360 \text{ inches}}{10 \text{ yards}}$
- (D)  $\frac{120 \text{ feet}}{10 \text{ inches}}$

**Key:** B

**Rubric:** (1 point) Student selects the correct value.

Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#27	1	RP	A	1	6.RP.A.3a	N/A	15

**1775**



This table contains  $x$  and  $y$  values in equivalent ratios. Fill in the missing value in the table.

$x$	$y$
2	6
5	<input type="text"/>
7	21
9	27

**Exemplar:** (shown at right)  
Student enters 15.

$x$	$y$
2	6
5	15
7	21
9	27

**Rubric:** (1 point) Student enters the correct value.

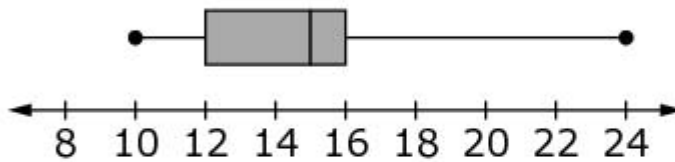
Item	Claim	Domain	Target	DOK	CONTENT	MP	Key
#28	1	SP	J	2	6.SP.B.5c	N/A	C

**1854**



Look at the box-and-whisker plot of pumpkin weights.

**Pumpkin Weights (lb)**



What is the **median** pumpkin weight?

- (A) 12 lb
- (B) 14 lb
- (C) 15 lb
- (D) 16 lb

**Key:** C

**Rubric:** (1 point) Student selects the correct weight.