Smarter Balanced Assessment Consortium:

Mathematics Practice Test Scoring Guide
High School

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[1]:

- 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)

- 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 high school. A separate document is available that provides a high school sample performance task and scoring guide.

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[1] Most of these terms (Claim, Domain, Target, DOK, etc.) are further 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
#1	1	A-SSE	D	1	A-SSE.A.2	7

Select the expression that is equivalent to $(m^2 - 25)$.

(A) $(m^2 - 10m + 25)$

(B) $(m^2 + 10m + 25)$

(C) $(m - 5)(m + 5)$

(D) $(m - 5)^2$

Key: C

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

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#2	1	N-RN	A	1	N-RN.A.2	7

Select an expression that is equivalent to $\sqrt{3^8}$.

(A) $3^{\frac{1}{4}}$

(B) 3^3

(C) 3^4

(D) 3^6

Key: C

Rubric: (1 point) Student selects the correct expression in exponential form.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#3	1	A-REI	H	2	A-REI.A.2	1,6,7

Click the table to indicate whether each equation has no real solution, one real solution, or infinitely many real solutions.

	No Real Solution	One Real Solution	Infinitely Many Real Solutions
$\dfrac{5}{20x} = \dfrac{1}{4x}$	☐	☐	☐
$3x = 4 + 5x$	☐	☐	☐
$\sqrt{2x+3} + 6 = 0$	☐	☐	☐

Exemplar: (shown below)

	No Real Solution	One Real Solution	Infinitely Many Real Solutions
$\dfrac{5}{20x} = \dfrac{1}{4x}$	☐	☐	☑
$3x = 4 + 5x$	☐	☑	☐
$\sqrt{2x+3} + 6 = 0$	☑	☐	☐

Rubric: (1 point) The student correctly identifies whether each equation has no, one, or infinitely many real solutions.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#4	1	A-APR	F	2	A-APR.A.1	7

Enter an expression equivalent to
$(3x^2 + 2y^2 - 3x) + (2x^2 + y^2 - 2x) - (x^2 + 3y^2 + x)$
using the fewest number of possible terms.

1	2	3	x	y
4	5	6	+	-	*	÷
7	8	9	<	≤	=	≥	>
0	.	-	□/□	□□	□□	( )	| |	√□	□√□	π	i

sin cos tan arcsin arccos arctan

Key: $4x^2 - 6x$ or $-6x + 4x^2$

Rubric: (1 point) The student enters a correct equivalent expression.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#5	1	A-REI	H	2	A-REI.A.2	N/A

A student solved $\frac{3}{x-4} = \frac{x}{7}$ in six steps, as shown.

Step 1: $3 = \frac{x(x-4)}{7}$

Step 2: $21 = x(x-4)$

Step 3: $21 = x^2 - 4x$

Step 4: $0 = x^2 - 4x - 21$

Step 5: $0 = (x-7)(x+3)$

Step 6: $x = -3, x = 7$

Which statement is an accurate interpretation of the student's work?

Ⓐ The student solved the equation correctly.

Ⓑ The student made an error in step 2.

Ⓒ The student made an error in step 5.

Ⓓ Only $x = 7$ is a solution to the original equation.

Key: A

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

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#6	3	G-CO	F	3	G-CO.C.9	7

When a transversal intersects a pair of parallel lines it will create two pairs of alternate exterior angles.
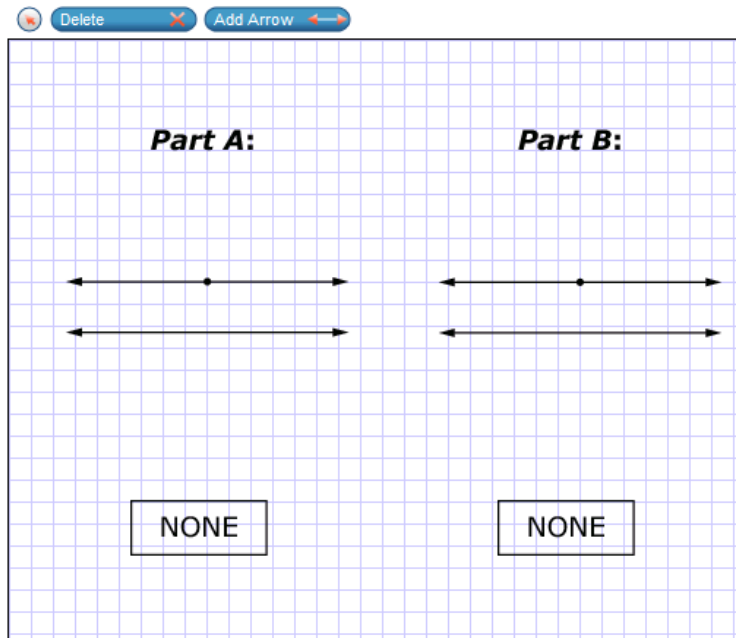
Ricky claims the angles within each pair are congruent to each other, but not congruent to either angle in the other pair.

Part A
Draw a transversal through the point that supports Ricky's claim or select **NONE** if there is not a situation to support the claim.

Part B
Draw a transversal through the point that **refutes** Ricky's claim, or select **NONE** if there is not a situation to refute the claim.
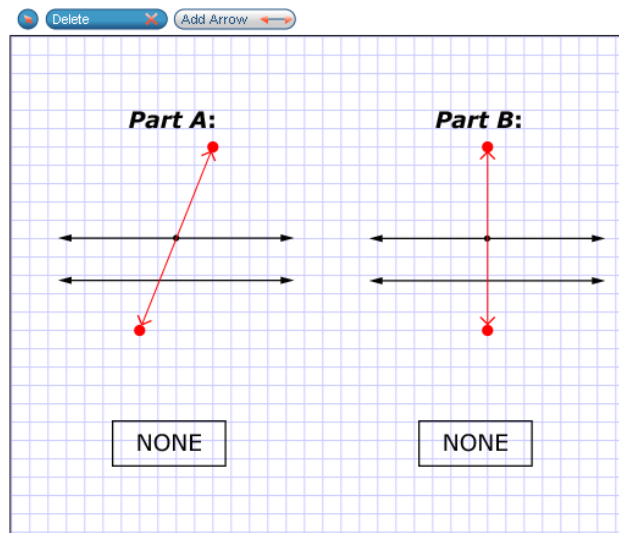
Exemplar: (shown at right)

Part A: a pair of parallel lines cut by transversal that is not perpendicular to the parallel lines

Part B: a pair of parallel lines cut by perpendicular transversal

Rubric: (2 points) Student draws correct transversals for Part A and Part B.

(1 point) Student draws correct transversal for Part A or Part B.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#7	1	A-REI	I	1	A-REI.B.3	7

Which inequality represents all possible solutions of $-6n < -12$?
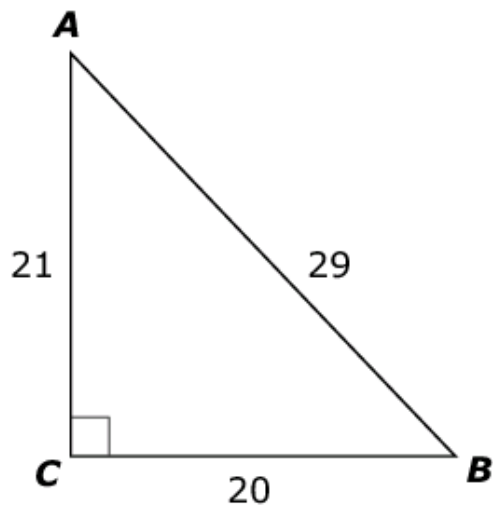
Ⓐ $n < 72$

Ⓑ $n > 2$

Ⓒ $n < 2$

Ⓓ $n > 72$

Key: B

Rubric: (1 point) Student selects the correct inequality.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#8	1	G-SRT	0	1	G-SRT.C.6	6

Consider this right triangle.

Enter the ratio equivalent to sin(B).

Key: 21/29

Exemplar: (1 point) The student enters the correct ratio

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#9	3	N-RN	A	2	N-RN.B.3	7

Cheryl claims that any irrational number squared will result in a rational number.

Part A

Drag an irrational number into the first response box that when squared will result in a rational number.

Part B

Drag an irrational number into the second response box that when squared will result in an irrational number.

$\dfrac{\sqrt[3]{2}}{\sqrt{3}}$

$\dfrac{\sqrt{3}}{\sqrt{2}}$

$\sqrt[3]{2}$

$\sqrt{2}$

π

$\sqrt{\pi}$

Delete ✕

Part A

$\boxed{}^2$ = rational number

Part B

$\boxed{}^2$ = irrational number

Key: (Part A) any of the following: $\dfrac{\sqrt{3}}{\sqrt{2}}$, $\sqrt{2}$

(Part B) any of the following: $\dfrac{\sqrt[3]{2}}{\sqrt{3}}$, $\sqrt[3]{2}$, π , $\sqrt{\pi}$

Rubric: (1 point) The student correctly selects two numbers that when squared result in a rational number (Part A) and an irrational number (Part B).

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#10	1	A-CED	G	2	A-CED.A.1	N/A

A train travels 250 miles at a constant speed (*x*), in miles per hour.

Enter an equation that can be used to find the speed of the train, if the time to travel 250 miles is 5 hours.

1	2	3	x
4	5	6	+	-	*	÷
7	8	9	<	≤	=	≥	>
0	.	-			( )				√		π	i
			sin	cos	tan	arcsin	arccos	arctan

Key: $x = \dfrac{250}{5}$ or equivalent. However, do not accept *x* = 50 only.

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

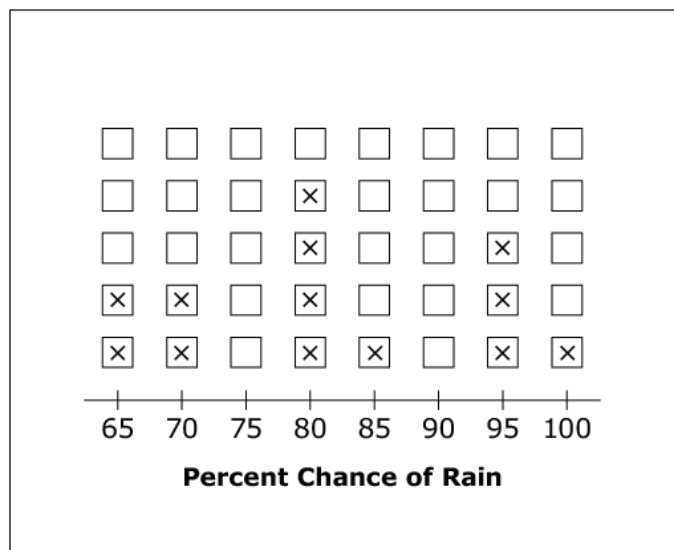| Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#11	1	S-ID	P	2	S-ID.A.1	4

Click above the numbers to create a line plot for the given percent chances of rain in different cities.

65, 65, 70, 70, 80, 80, 80, 80, 85, 95, 95, 95, 100
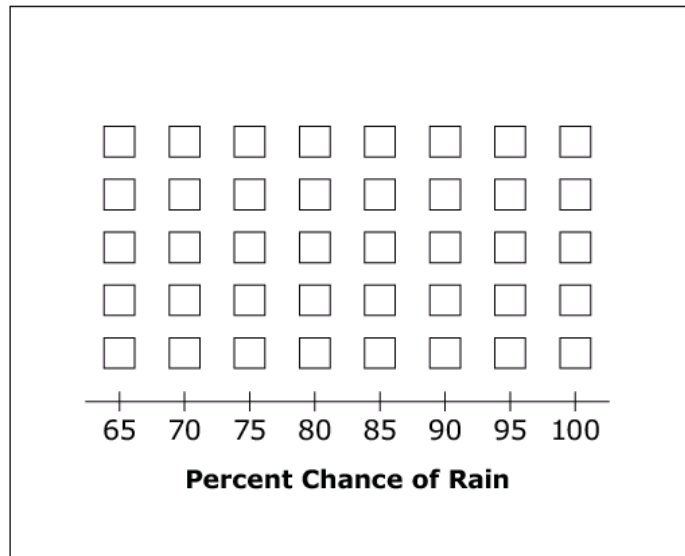
Exemplar: (shown at right)

Rubric: (1 point) The student clicks the bottom two boxes of 65, two boxes of 70, four boxes of 80, one box of 85, three boxes of 95, and one box of 100.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#12	1	A-Q	C	2	A-Q.A.1	N/A

The formula for the rate at which water is flowing is $R = \dfrac{V}{t}$, where

- R is the rate,
- V is the volume of water measured in gallons (g), and
- t is the amount of time, in seconds (s), for which the water was measured.

Select an appropriate measurement unit for the rate.

Ⓐ gs

Ⓑ $\dfrac{g}{s}$

Ⓒ $\dfrac{s}{g}$

Ⓓ $\dfrac{1}{sg}$

Key: B

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

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#13	3	A-REI	E	3	A-REI.B	3

Emily is solving the equation $2(x + 9) = 4(x + 7) + 2$. Her steps are shown.

Part A
Click on the first step in which Emily made an error.

Part B
Click on the solution to Emily's original equation.

Part A

Step 1: $2(x + 9) = 4(x + 7) + 2$

Step 2: $2x + 18 = 4x + 28 + 2$

Step 3: $2x + 18 = 4x + 26$

Step 4: $-8 = 2x$

Step 5: $-4 = x$

Part B

-10.5 -6 -2 0 2 4.5 8

Exemplar: (shown at right)

Rubric: (2 points) The student selects Step 3 in Part A and indicates –6 as the correct response in Part B.

(1 point) The student gets Part A or Part B correct, but not both.

Part A

Step 1: $2(x + 9) = 4(x + 7) + 2$

Step 2: $2x + 18 = 4x + 28 + 2$

$\boxed{\text{Step 3: } 2x + 18 = 4x + 26}$

Step 4: $-8 = 2x$

Step 5: $-4 = x$

Part B

-10.5 $\boxed{-6}$ -2 0 2 4.5 8

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#14	1	F-BF	N	2	F-BF.A.2	N/A

Match each recursive function with the equivalent explicit function.

	$f(n) = 6^{(n-1)}$; $n \geq 1$	$f(n) = 12 + 6n$; $n \geq 1$	$f(n) = 12^{(n-1)}$; $n \geq 1$	$f(n) = 6 + 12n$; $n \geq 1$
$f(1) = 18$; $f(n) = f(n-1) + 6$; $n \geq 2$	☐	☐	☐	☐
$f(1) = 18$; $f(n) = f(n-1) + 12$; $n \geq 2$	☐	☐	☐	☐
$f(1) = 1$; $f(n) = 6f(n-1)$; $n \geq 2$	☐	☐	☐	☐
$f(1) = 1$; $f(n) = 12f(n-1)$; $n \geq 2$	☐	☐	☐	☐

Exemplar: (shown below)

	$f(n) = 6^{(n-1)}$; $n \geq 1$	$f(n) = 12 + 6n$; $n \geq 1$	$f(n) = 12^{(n-1)}$; $n \geq 1$	$f(n) = 6 + 12n$; $n \geq 1$
$f(1) = 18$; $f(n) = f(n-1) + 6$; $n \geq 2$	☐	☑	☐	☐
$f(1) = 18$; $f(n) = f(n-1) + 12$; $n \geq 2$	☐	☐	☐	☑
$f(1) = 1$; $f(n) = 6f(n-1)$; $n \geq 2$	☑	☐	☐	☐
$f(1) = 1$; $f(n) = 12f(n-1)$; $n \geq 2$	☐	☐	☑	☐

Rubric: (1 point) The student correctly matches the functions.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#15	4	A-REI	D	3	A-REI.C	1

A store sells used and new video games. New video games cost more than used video games. All used video games cost the same. All new video games also cost the same.

Omar spent a total of $84 on 4 used video games and 2 new video games. Sally spent a total of $78 on 6 used video games and 1 new video game. Janet has $120 to spend.

Enter the number of used video games Janet can purchase after she purchases 3 new video games.

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

Key: 5

Rubric: (1 point) The student enters the number of used video games that Janet can purchase.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#16	1	A-REI	J	1	A-REI.D.12	N/A

Click on the region of the graph that contains the solution set of the system of linear inequalities.
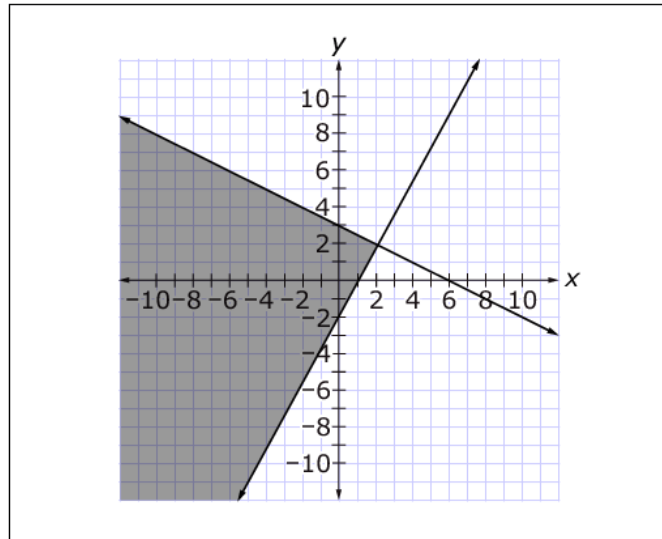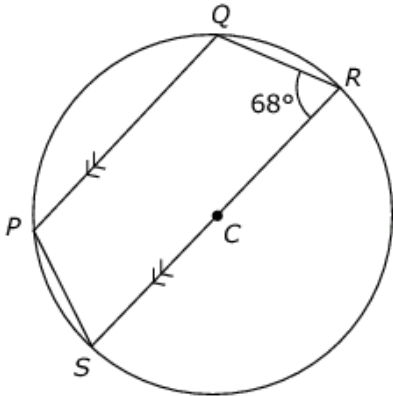
$$y \leq -\frac{1}{2}x + 3$$
$$y \geq 2x - 2$$
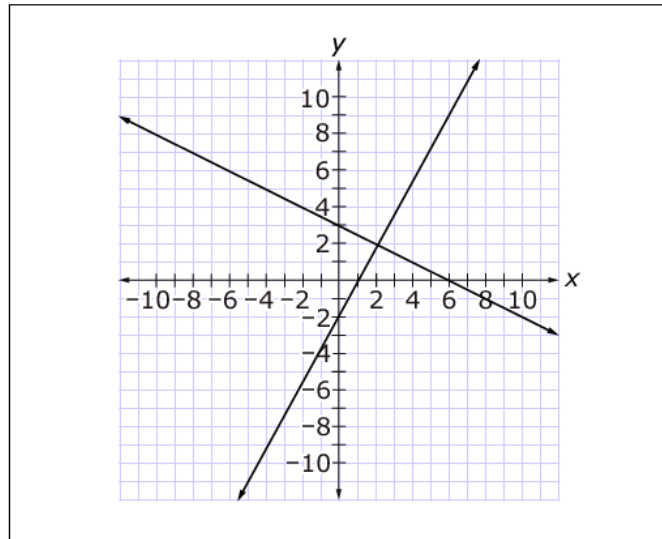
Exemplar: (shown at right)

Rubric: (1 point) The student correctly selects the region containing the solution set.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#17	3	G-C	G	2	G-C.A.3	6, 7

Use the circle below to answer the question.

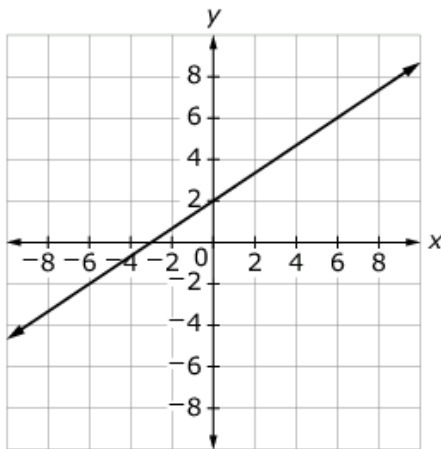The circle is centered at point *C*. Line segment *PQ* is parallel to *SR*. What is the measure of angle *QPS*?

(A) 68°

(B) 112°

(C) 136°

(D) 158°

Key: B

Rubric: (1 point) The student selects the correct angle measure.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#18	1	A-REI	J	2	A-REI.D.10	N/A

Choose the ordered pair that is a solution to the equation represented by the graph.

Ⓐ $(0, -3)$

Ⓑ $(2, 0)$

Ⓒ $(2, 2)$

Ⓓ $(-3, 0)$

Key: D

Rubric: (1 point) The student selects the correct ordered pair.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#19	3	A-REI	E	3	A-REI.B.3	3

Consider this solution to a problem.

Problem: $-4(6 - y) + 4 = -4$
Step 1: $-24 - 4y + 4 = -4$
Step 2: $-20 - 4y = -4$
Step 3: $-4y = 16$
Step 4: $y = -4$

In the first response box, enter the number of the step where the mistake is made.

In the second response box, enter the correct solution to the problem.

Key: Part 1: Step 1

Part 2: $y = 4$ (or 4)

Rubric: (1 point) The student enters the step where the mistake occurs and enters the correct solution.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#20	1	F-IF	K	2	F-IF.A.3	N/A

Consider a sequence whose first five terms are: $-1.75, \ -0.5, \ 0.75, \ 2, \ 3.25$

Which function (with domain all integers $n \geq 1$) could be used to define and continue this sequence?

(A) $\quad f(n) = \dfrac{7}{4}(n-1) - \dfrac{5}{4}$

(B) $\quad f(n) = \dfrac{5}{4}(n-1) - \dfrac{7}{4}$

(C) $\quad f(n) = \dfrac{7}{4}n - \dfrac{5}{4}$

(D) $\quad f(n) = \dfrac{5}{4}n - \dfrac{7}{4}$

Key: B

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

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#21	1	A-SSE	E	2	A-SSE.B.3	7

Write an expression equivalent to $\dfrac{b^{11}}{b^4}$ in the form b^m.

Key: b^7

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

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#22	1	F-IF	L	2	F-IF.B.6	2; 4

The depth of a river changes after a heavy rainstorm. Its depth, in feet, is modeled as a function of time, in hours. Consider this graph of the function.
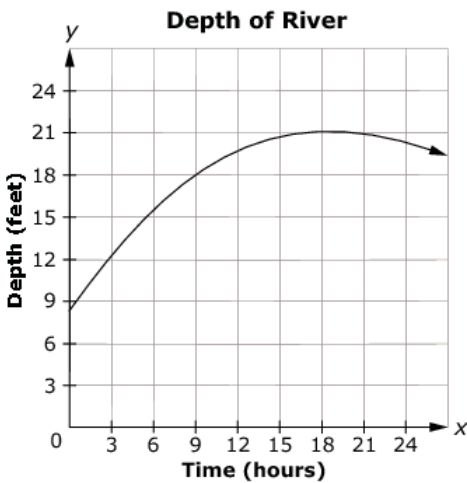
Depth of River

Enter the average rate of change for the depth of the river, measured as feet per hour, between hour 9 and hour 18. Round your answer to the nearest tenth.

Key: 0.3 or 3/9

Rubric: The student enters the correct rate of change.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#23	4	A-REI	E	3	A-REI.B.3	6

Nina has some money saved for a vacation she has planned.

- The vacation will cost a total of $1600.
- She will put $150 every week into her account to help pay for the vacation.
- She will have enough money for the vacation in 8 weeks.

If Nina was able to save $200 a week instead of $150 a week, how many fewer weeks would it take her to save enough money for the vacation? Enter the result in the response box.

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

Key: 2

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

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#24	3	G-CO	A	2	G-CO.C.11	3

Consider parallelogram *ABCD* with point *X* at the intersection of diagonal segments *AC* and *BD*.
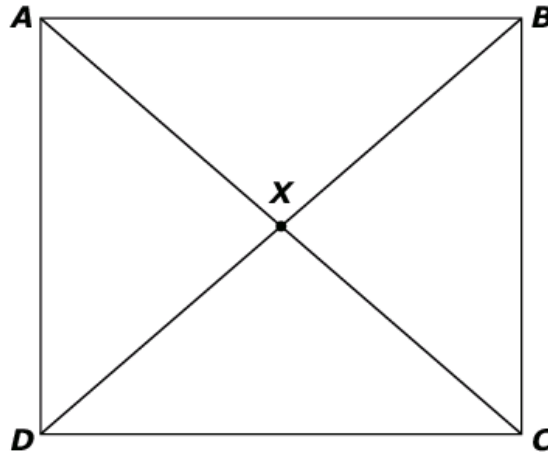
Evelyn claims that *ABCD* is a square. Select all statements that must be true for Evelyn's claim to be true.

☐ *AB = BD*

☐ *AD = AB*

☐ *AC = BX*

☐ *m∠ABC ≠ 90°*

☐ *m∠AXB = 90°*

Exemplar: (shown at right)

Rubric: (1 point) The student selects the statements that must be true.

☐ *AB = BD*

☑ *AD = AB*

☐ *AC = BX*

☐ *m∠ABC ≠ 90°*

☑ *m∠AXB = 90°*

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#25	2	A-CED	A	2	A-CED.A.1	2

A student earns $7.50 per hour at her part-time job. She wants to earn at least $200.

Enter an inequality that represents all of the possible numbers of hours (h) the student could work to meet her goal. Enter your response in the first response box.

Enter the least whole number of hours the student needs to work in order to earn at least $200. Enter your response in the second response box.

Key: Part A: $7.5h \geq 200$ or equivalent

Part B: 27 or $h = 27$

Rubric: (2 points) The student enters the correct inequality and value.

(1 point) The student enters the correct inequality or correct value. OR The student enters the correct answers in the wrong box.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#26	1	S-ID	P	2	S-ID.A	7

Michael took 12 tests in his math class. His lowest test score was 78. His highest test score was 98. On the 13th test, he earned a 64. Select whether the value of each statistic for his test scores increased, decreased, or could not be determined when the last test score was added.

	Standard Deviation	Median	Mean
Increased	☐	☐	☐
Decreased	☐	☐	☐
Could Not Be Determined	☐	☐	☐

Exemplar: (shown below)

	Standard Deviation	Median	Mean
Increased	☑	☐	☐
Decreased	☐	☐	☑
Could Not Be Determined	☐	☑	☐

Rubric: (1 point) The student correctly selects the changes in statistics.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#27	3	G-CO	B	3	G-CO.C.11	3

In the given figure, quadrilateral *ABCD* is a rectangle, and quadrilateral *ACED* is a parallelogram.
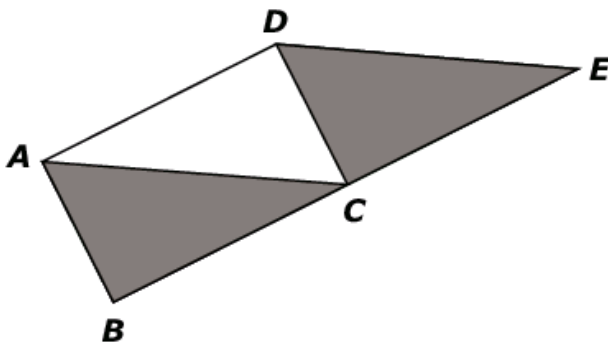
Ted claims that the two shaded triangles must be congruent. Is Ted's claim correct? Include all work and/or reasoning necessary to either prove the triangles congruent or to disprove Ted's claim.

Sample Exemplar Responses (3 points):

Yes, triangle ABC is congruent to triangle OGE. To show this, first notice that sides AB and DC are congruent because they are opposite sides of a rectangle. Similarly, side AC is congruent to side DE because they are opposite sides of a parallelogram. To complete the proof, we show that angles BAG and COE are congruent. To see this, first notice that angles BAC and ACO are congruent because they are opposite interior angles for the parallel lines AB and DC. Also, angles AGO and COE are congruent because they are opposite interior angles for the parallel lines AC and OE. So by transitive property, angles BAG and COE are congruent. Therefore, triangles ABC and OGE are congruent by SAS congruence.

OR

Yes, triangle ABC is congruent to triangle OCE. Because ABCO is a rectangle, the diagonal AC splits the rectangle into two congruent triangles ABC and GOA. Similarly, because ACED is a parallelogram, the diagonal CO splits the parallelogram into two congruent triangles COA and OGE. Therefore, by transitive property of congruence, triangle ABC is congruent to triangle OGE.

Rubric:

(3 points) Student shows an understanding of how to prove that two triangles are congruent. **AND**

Student proves that ΔABC and ΔDCE are congruent starting from the properties of rectangles and parallelograms and ending with a valid demonstration of congruence.

Note: Proofs do not need to be formal, but they should address all of the necessary steps to get from the given information (rectangle and parallelogram) to a valid demonstration of congruence (SAS, SSS, ASA, AAS, RHS or the Transitive Property of Congruence).

(2 points) Student shows an understanding of how to prove that two triangles are congruent. **AND**

Student's demonstration of the congruence of ΔABC and ΔDCE is flawed; either

- they attempt all three essential parts of the proof (SAS, SSS, ASA, AAS, RHS) but one of the three is incomplete, or
- they show that both ΔABC and ΔDCE are congruent to ΔCDA, but do not explain why this makes them congruent to each other.

(1 point) Student shows an understanding of how to determine whether two triangles are congruent.

Note: If a response receives only one point, it must come from reasoning.

(0 points) Student describes an incorrect understanding of congruency **OR** Student attempts to demonstrate the congruence of some parts of the figure, but their response does not show any understanding of what it takes to demonstrate the congruence of triangles.

Note: Showing that only one or two of the three necessary lines/angles are congruent, without either attempting the third or describing a valid criteria for congruence, does not indicate sufficient reasoning for credit.

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#28	1	F-IF	K	2	F-IF.A.1	6

Choose the domain for which each function is defined.

	All real numbers	$x \neq 0$	$x \neq 4$	$x \neq -4$
$f(x) = \dfrac{x+4}{x}$	☐	☐	☐	☐
$f(x) = \dfrac{x}{x+4}$	☐	☐	☐	☐
$f(x) = x(x+4)$	☐	☐	☐	☐
$f(x) = \dfrac{4}{x^2+8x+16}$	☐	☐	☐	☐

Exemplar: (shown at right)

Rubric: (1 point) Student correctly matches each function to the domain for which it is defined.

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Choose the domain for which each function is defined.

	All real numbers	$x \neq 0$	$x \neq 4$	$x \neq -4$
$f(x) = \dfrac{x+4}{x}$	☐	☑	☐	☐
$f(x) = \dfrac{x}{x+4}$	☐	☐	☐	☑
$f(x) = x(x+4)$	☑	☐	☐	☐
$f(x) = \dfrac{4}{x^2+8x+16}$	☐	☐	☐	☑

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#29	2	G-SRT	D	2	G-SRT.C.8	3

Emma is standing 10 feet away from the base of a tree and tries to measure the angle of elevation to the top. She is unable to get an accurate measurement, but determines that the angle of elevation is between 55 degrees and 75 degrees.

Decide whether each value given in the table is a reasonable estimate for the tree height. Select Reasonable or Not Reasonable for each height.

	Reasonable	Not Reasonable
4.2 feet	☐	☐
14.7 feet	☐	☐
24.4 feet	☐	☐
33.9 feet	☐	☐
39.1 feet	☐	☐
58.7 feet	☐	☐

Exemplar: (shown at right)

Rubric: (1 point) The student correctly identifies the reasonable estimates.

	Reasonable	Not Reasonable
4.2 feet	☐	☑
14.7 feet	☑	☐
24.4 feet	☑	☐
33.9 feet	☑	☐
39.1 feet	☐	☑
58.7 feet	☐	☑

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#30	4	A-CED	F	3	A-CED	1; 4

Emily has a gift certificate for $10 to use at an online store. She can purchase songs for $1 each or episodes of TV shows for $3 each. She wants to spend exactly $10.

Part A
Create an equation to show the relationship between the number of songs, x, Emily can purchase and the number of episodes of TV shows, y, she can purchase.

Part B
Use the Add Point tool to plot **all** possible combinations of songs and TV shows Emily can purchase.
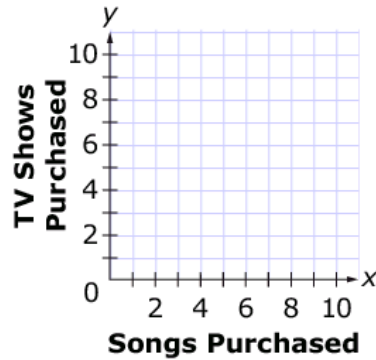
Delete ⊗ ✕ Add Point ●─❋

Part A   Part B

☐ x + ☐ y = ☐

Emily's Online Spending

TV Shows Purchased

Songs Purchased

Exemplar: (shown at right)

Rubric: (2 points) The student creates the equation $1x + 3y = 10$ (or equivalent) and plots only the points (10, 0), (7, 1), (4, 2), and (1, 3).

(1 point) The student creates the equation $1x + 3y = 10$ (or equivalent) OR plots only the points (10, 0), (7, 1), (4, 2), and (1, 3).

Note: The student may leave the response box in front of the x to be blank as an assumed 1.
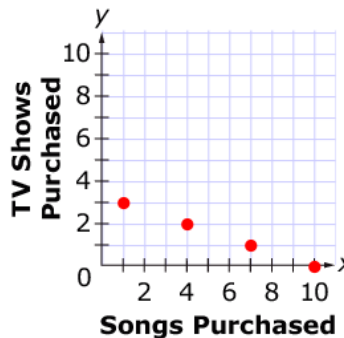
Part A   Part B

1 x + 3 y = 10

Emily's Online Spending

TV Shows Purchased

Songs Purchased

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#31	1	G-SRT	0	1	G-SRT.C.8	2

Consider this right triangle.
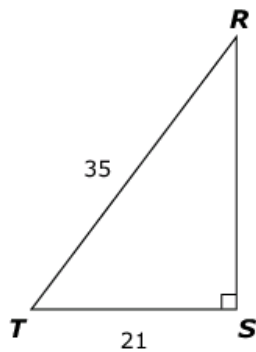
Determine whether each expression can be used to find the length of side *RS*. Select Yes or No for each expression.

	Yes	No
$35 \cdot sin(R)$	☐	☐
$21 \cdot tan(T)$	☐	☐
$35 \cdot cos(R)$	☐	☐
$21 \cdot tan(R)$	☐	☐

Exemplar: (shown at right)

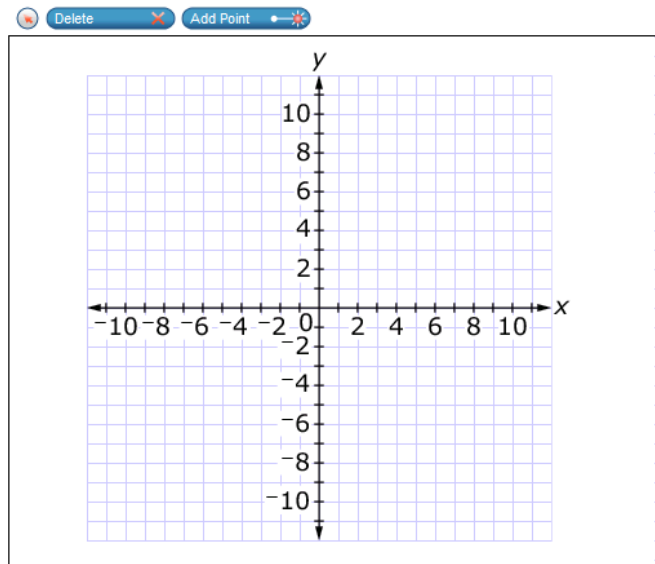**Rubric:** (1 point) The student correctly selects the expressions that can be used to find the length of the side.

	Yes	No
$35 \cdot sin(R)$	☐	✔
$21 \cdot tan(T)$	✔	☐
$35 \cdot cos(R)$	✔	☐
$21 \cdot tan(R)$	☐	✔

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#32	1	F-IF	M	2	F-IF.C.7	N/A

Given the function
$$y = 3x^2 - 12x + 9 \, ,$$

- Place a point on the coordinate grid to show each x-intercept of the function.

- Place a point on the coordinate grid to show the minimum value of the function.

Exemplar: (shown at right)

Rubric: (2 points) Part A: The student correctly plots the x-intercepts (with no other x-intercepts plotted). Part B: The student correctly plots the minimum (with no other points not on the x-axis plotted).

(1 point) The student gets Part A or Part B correct, but not both.
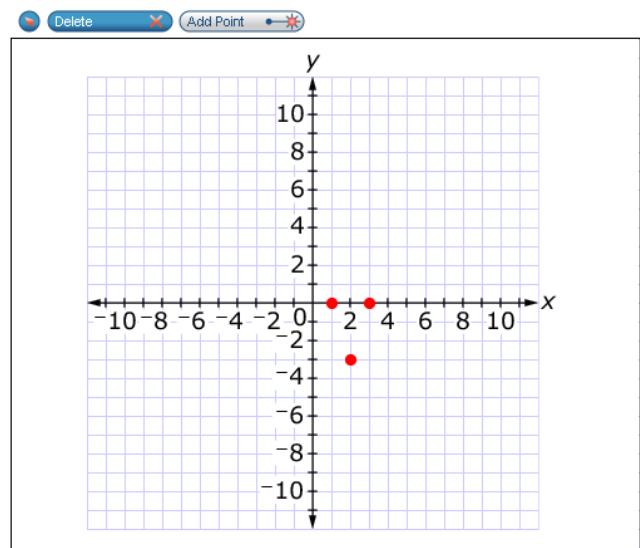
Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#33	1	A-CED	G	2	A-CED.A.1	N/A

Mike earns $6.50 per hour plus 4% of his sales.

Enter an equation for Mike's total earnings, E, when he works x hours and has a total of y sales, in dollars.

Key: $E = 6.5x + 0.04y$ OR equivalent

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

Item	Claim	Domain	Target	DOK	CCSS-MC	CCSS-MP
#34	2	A-REI	A	2	A-REI.C	6

The basketball team sold t-shirts and hats as a fund-raiser. They sold a total of 23 items and made a profit of $246. They made a profit of $10 for every t-shirt they sold and $12 for every hat they sold.

Determine the number of t-shirts and the number of hats the basketball team sold.

Enter the number of t-shirts in the first response box.

Enter the number of hats in the second response box.

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

Key: Part A: 15

Part B: 8

Rubric: (1 point) The student enters the correct number of t-shirts in the first response box and the correct number of hats in the second box.