Master Claim: On-Track for college and career readiness. The degree to which a student is college and career ready (or “on-track” to being ready) in mathematics. The student solves grade-level/course-level problems in mathematics as set forth in the Standards for Mathematical Content with connections to the Standards for Mathematical Practice.

Sub-Claim A: Major Content with Connections to Practices
The student solves problems involving the Major Content for her grade/course with connections to the Standards for Mathematical Practice.

Sub-Claim B: Additional & Supporting Content with Connections to Practices
The student solves problems involving the Additional and Supporting Content for her grade/course with connections to the Standards for Mathematical Practice.

Sub-Claim C: Highlighted Practices MP.3,6 with Connections to Content (expressing mathematical reasoning)
The student expresses grade/course-level appropriate mathematical reasoning by constructing viable arguments, critiquing the reasoning of others, and/or attending to precision when making mathematical statements.

Sub-Claim D: Highlighted Practice MP.4 with Connections to Content (modeling/application)
The student solves real-world problems with a degree of difficulty appropriate to the grade/course by applying knowledge and skills articulated in the standards for the current grade/course (or for more complex problems, knowledge and skills articulated in the standards for previous grades/courses), engaging particularly in the Modeling practice, and where helpful making sense of problems and persevering to solve them (MP. 1), reasoning abstractly and quantitatively (MP. 2), using appropriate tools strategically (MP. 5), looking for and making use of structure (MP. 7), and/or looking for and expressing regularity in repeated reasoning (MP. 8).

Sub-Claim E: Fluency in applicable grades (3-6)
The student demonstrates fluency as set forth in the Standards for Mathematical Content in her grade.

---

1 For the purposes of the PARCC Mathematics assessments, the Major Content in a grade/course is determined by that grade level’s Major Clusters as identified in the PARCC Model Content Frameworks v.3.0 for Mathematics. Note that tasks on PARCC assessments providing evidence for this claim will sometimes require the student to apply the knowledge, skills, and understandings from across several Major Clusters.

2 The Additional and Supporting Content in a grade/course is determined by that grade level’s Additional and Supporting Clusters as identified in the PARCC Model Content Frameworks v.3.0 for Mathematics.

3 For 3 – 8, Sub-Claim C includes only Major Content. For High School, Sub-Claim C includes Major, Additional and Supporting Content.
# PARCC Mathematics Task Types

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Description of Task Type</th>
</tr>
</thead>
</table>
| **I. Tasks assessing concepts, skills and procedures** | • Balance of conceptual understanding, fluency, and application  
• Can involve any or all mathematical practice standards  
• Machine scoreable including innovative, computer-based formats  
• Will appear on the End of Year and Performance Based Assessment components  
• Sub-claims A, B and E |
| **II. Tasks assessing expressing mathematical reasoning** | • Each task calls for written arguments / justifications, critique of reasoning, or precision in mathematical statements (MP.3, 6)  
• Can involve other mathematical practice standards  
• May include a mix of machine scored and hand scored responses  
• Included on the Performance Based Assessment component  
• Sub-claim C |
| **III. Tasks assessing modeling / applications** | • Each task calls for modeling/application in a real-world context or scenario (MP.4)  
• Can involve other mathematical practice standards  
• May include a mix of machine scored and hand scored responses  
• Included on the Performance Based Assessment component  
• Sub-claim D |
### Selected Evidence Statement Keys, Texts, and Clarifications: Grade 3

<table>
<thead>
<tr>
<th>Evidence Statement Key</th>
<th>Evidence Statement Text</th>
<th>Clarifications</th>
<th>MP</th>
</tr>
</thead>
</table>
| 3.OA.1                 | Interpret products of whole numbers, e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as $5 \times 7$.*** | i) Tasks involve interpreting products in terms of equal groups, arrays, area, and/or measurement quantities. For more information see CCSS Table 2, p. 89.  
ii) Tasks do not require students to interpret products in terms of repeated addition, skip-counting, or jumps on the number line.  
iii) The italicized example refers to describing a context. But describing a context is not the only way to meet the standard. For example, another way to meet the standard would be to identify contexts in which a total can be expressed as a specified product. | 4, 2 |
| 3.OA.3-1              | Use multiplication within 100 (both factors less than or equal to 10) to solve word problems in situations involving equal groups, arrays, or area, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. | i) All products come from the harder three quadrants of the times table ($a \times b$ where $a > 5$ and/or $b > 5$).  
ii) 50% of tasks involve multiplying to find the total number (equal groups, arrays); 50% involve multiplying to find the area.  
iii) For more information see Table 2, p. 89 of the CCSS and Table 3, p. 23 of *Progression for Operations and Algebraic Thinking*. | 1, 4 |
| 3.NF.3a-1             | Explain equivalence of fractions in special cases and compare fractions by reasoning about their size.  
a. Understand two fractions as equivalent (equal) if they are the same size. | i) Tasks do not involve the number line.  
ii) Tasks are limited to fractions with denominators 2, 3, 4, 6 and 8. (See footnote CCSS, p. 24)  
iii) The explanation aspect of 3.NF.3 is not assessed here. | 5 |
| 3.C.3-1               | Base arithmetic explanations/reasoning on concrete referents such as diagrams (whether provided in the prompt or constructed by the student in her response), connecting the diagrams to a written (symbolic) method. Content Scope: Knowledge and skills articulated in 3.NF.3b and 3.NF.3d. | i) Tasks may present realistic or quasi-realistic images of a contextual situation (e.g., a drawing of a partially filled graduated cylinder). However, tasks do not provide the sort of abstract drawings that help the student to represent the situation mathematically (e.g., a number line diagram or other visual fraction model).  
ii) Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8. (See footnote CCSS, p. 24)  
iii) For fractions equal to a whole number, values are limited to 0, 1, 2, 3, 4, and 5. | 3, 5, 6 |
| 3.D.2                 | Solve multi-step contextual problems with degree of difficulty appropriate to Grade 3, requiring application of knowledge and skills articulated in 2.OA.A, 2.OA.B, 2.NBT.A, B, and/or 2.MD.B. | Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to Grade 3. | 4 |
### Selected Evidence Statement Keys, Texts, and Clarifications: Grade 3

Per the PARCC Calculator Policy, PARCC mathematics assessments for Grades 3 – 5 will not allow for calculator usage.

<table>
<thead>
<tr>
<th>Evidence Statement Key</th>
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<th>Clarifications</th>
<th>MP</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.NF.A.Int.1</td>
<td>In a contextual situation involving a whole number and two fractions not equal to a whole number, represent all three numbers on a number line diagram then choose the fraction closest in value to the whole number.</td>
<td>i) Whole numbers are limited to 0, 1, 2, 3, 4, 5. Fraction denominators are limited to 2, 3, 4.</td>
<td>2, 4, 5</td>
</tr>
<tr>
<td>3.Int.2</td>
<td>Solve two-step word problems using the four operations requiring a substantial addition, subtraction, or multiplication step, drawing on knowledge and skills articulated in 3.NBT. See 3.OA.8, 3.NBT.2, and 3.NBT.3</td>
<td>i. Addition, subtraction, multiplication and division situations in these problems may involve any of the basic situation types with unknowns in various positions (see CCSS Table 1, p. 88 and Table 2, p. 89 and the Progression document for Operations and Algebraic Thinking.)</td>
<td>1, 4</td>
</tr>
</tbody>
</table>
### Selected Evidence Statement Keys, Texts, and Clarifications: Grade 7

<table>
<thead>
<tr>
<th>Evidence Statement Key</th>
<th>Evidence Statement Text</th>
<th>Clarifications</th>
<th>MP</th>
<th>Calculator</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.NS.1d</td>
<td>Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line. d. Apply properties of operations as strategies to add and subtract rational numbers.</td>
<td>i) Tasks do not have a context. ii) Tasks are not limited to integers. iii) Tasks may involve sums and differences of 2 or 3 rational numbers. iv) Tasks require students to represent addition and subtraction on a horizontal or vertical number line or compute a sum or difference, or demonstrate conceptual understanding for example by producing or recognizing an expression equivalent to a given sum or difference. For example, given the sum (-8.1 + 7.4), the student might be asked to recognize or produce the equivalent expression (-(8.1 – 7.4)).</td>
<td>7, 5</td>
<td>No</td>
</tr>
<tr>
<td>7.NS.2a-1</td>
<td>Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as ((-1)(-1) = 1) and the rules for multiplying signed numbers.</td>
<td>i) Tasks do not have a context. ii) Tasks are not computation tasks but rather require students to demonstrate conceptual understanding, for example by providing students with a numerical expression and requiring students to produce or recognize an equivalent expression using properties of operations, particularly the distributive property. For example, given the expression ((-3)(6 + -4 + -3)), the student might be asked to recognize that the given expression is equivalent to ((-3)(6 + -4) + (-3)(-3)).</td>
<td>7</td>
<td>No</td>
</tr>
<tr>
<td>7.NS.3</td>
<td>Solve real-world and mathematical problems involving the four operations with rational numbers.</td>
<td>i) Tasks are one-step word problems. ii) Tasks sample equally between addition/subtraction and multiplication/division. iii) Tasks involve at least one negative number. iv) Tasks are not limited to integers.</td>
<td>1, 4</td>
<td>No</td>
</tr>
<tr>
<td>Evidence Statement Key</td>
<td>Evidence Statement Text</td>
<td>Clarifications</td>
<td>MP</td>
<td>Calculator</td>
</tr>
<tr>
<td>------------------------</td>
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</tr>
<tr>
<td>7.C.4</td>
<td>Base explanations/reasoning on a coordinate plane diagram (whether provided in the prompt or constructed by the student in her response). Content Scope: Knowledge and skills articulated in 7.RP.A.</td>
<td>None</td>
<td>2, 3, 5, 6</td>
<td>Yes</td>
</tr>
<tr>
<td>7.D.1</td>
<td>Solve multi-step contextual word problems with degree of difficulty appropriate to grade 7, requiring application of knowledge and skills articulated in 7.RP.1, 2; 7.NS.1, 2, 3; and 7.EE.1, 3, 4.</td>
<td>Tasks may have scaffolding if necessary in order to yield a degree of difficulty appropriate to grade 7.</td>
<td>4, 1, 2, 5, 7</td>
<td>Yes</td>
</tr>
</tbody>
</table>
### Selected Evidence Statement Keys, Texts, and Clarifications: Algebra 1

<table>
<thead>
<tr>
<th>Evidence Statement Key</th>
<th>Evidence Statement Text</th>
<th>Clarifications</th>
<th>MP</th>
<th>Calculator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F-IF.2</strong></td>
<td>Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.</td>
<td>See illustrations for F-IF.2 at <a href="http://illustrativemathematics.org">http://illustrativemathematics.org</a></td>
<td>6, 7</td>
<td>Item Specific</td>
</tr>
<tr>
<td><strong>A-SSE.2-4</strong></td>
<td>Use the structure of a numerical expression or polynomial expression in one variable to rewrite it, in a case where two or more rewriting steps are required.</td>
<td>i) Example: Factor completely ( x^2 - 1 + (x - 1)^2 ). (A first iteration might give ((x + 1)(x - 1) + (x - 1)^2), which could be rewritten as ((x - 1)(x+1+x+1)) on the way to factoring completely as (2x(x-1)). Or the student might first expand as (x^2 - 1 + x^2 - 2x + 1), rewriting as (2x^2 - 2x) then factoring as (2x(x-1)). ii) Tasks do not have a context.</td>
<td>7, 1</td>
<td>Neutral</td>
</tr>
<tr>
<td><strong>A-REI.4b-1</strong></td>
<td>Solve quadratic equations in one variable. b) Solve quadratic equations with rational number coefficients by inspection (e.g., for (x^2 = 49)), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation.</td>
<td>i) Tasks should exhibit variety in initial forms. Examples of quadratic equations with real solutions: (t^2 = 49), (3a^2 = 4), (7 = x^2), (r^2 = 0), (\frac{1}{2}y^2 = \frac{1}{5}), (y^2 - 8y + 15 = 0), (2x^2 - 16x + 30 = 0), (2p = p^2 + 1), (\frac{1}{2}t^2 = 4t), (7x^2 + 5x - 3 = 0), (\frac{3}{4}c(c - 1) = c), ((3x - 2)^2 = 6x - 4) ii) Methods are not explicitly assessed; strategy is assessed indirectly by presenting students with a variety of initial forms. iii) For rational solutions, exact values are required. For irrational solutions, exact or decimal approximations may be required. iv) Prompts integrate mathematical practices by not indicating that the equation is quadratic. (E.g., “Find all real solutions of the equation (t^2 = 4t)”…not, “Solve the quadratic equation (t^2 = 4t),”)</td>
<td>7, 5</td>
<td>Item Specific</td>
</tr>
</tbody>
</table>
## Selected Evidence Statement Keys, Texts, and Clarifications: Algebra 1

<table>
<thead>
<tr>
<th>Evidence Statement Key</th>
<th>Evidence Statement Text</th>
<th>Clarifications</th>
<th>MP</th>
<th>Calculator</th>
</tr>
</thead>
</table>
| A.Int.1                | Solve equations that require seeing structure in expressions. | i) Tasks do not have a context.  
ii) Equations simplify considerably after appropriate algebraic manipulations are performed. For example, if $24 + 10x - x^2 = p - (x - 5)^2$, then find the value of $p$; solve $(3x - 2)^2 = 6x - 4$. | 7, 1 | No |
| HS-Int.2               | Solve multi-step mathematical problems with degree of difficulty appropriate to the course that require analyzing quadratic functions and/or writing and solving quadratic equations. | i) Tasks do not have a context.  
ii) Exact answers may be required or decimal approximations may be given. Students might choose to take advantage of the graphing utility to find approximate answers or clarify the situation at hand.  
iii) Some examples: Given the function $f(x) = x^2 + x$, find all values of $k$ such that $f(3 - k) = f(3)$. (Exact answers are required.) Find a value of $c$ so that the equation $2x^2 - cx + 1 = 0$ has a double root. Give an answer accurate to the tenths place. | 1, 5, 6 | Yes |
### Selected Evidence Statement Keys, Texts, and Clarifications: Algebra 1

<table>
<thead>
<tr>
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<th>Evidence Statement Text</th>
<th>Clarifications</th>
<th>MP</th>
<th>Calculator</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS.C.12.1</td>
<td>Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures about functions. Content scope: F-IF.8a</td>
<td>i) Tasks involve using algebra to prove properties of given functions. For example, prove algebraically that the function $h(t) = t(t-1)$ has minimum value 1/4; prove algebraically that the graph of $g(x) = x^2 - x + \frac{1}{4}$ is symmetric about the line $x = \frac{1}{2}$; prove that $x^2 + 1$ is never less than $-2x$. ii) Scaffolding is provided to ensure tasks have appropriate level of difficulty. (For example, the prompt could show the graphs of $x^2 + 1$ and $-2x$ on the same set of axes, and say, “From the graph, it looks as if $x^2 + 1$ is never less than $-2x$. In this task you will use algebra to prove it.” And so on, perhaps with additional hints or scaffolding.</td>
<td>3</td>
<td>Yes</td>
</tr>
<tr>
<td>HS.D.2-9</td>
<td>Solve multi-step contextual word problems with degree of difficulty appropriate to the course, requiring application of course-level knowledge and skills articulated in the following standards but limited to linear and quadratic functions: F-BF.1a, F-BF.3, A-CED.1, A-SSE.3, F-IF.4-6, and F-IF.7/</td>
<td>i) F-BF.1a is the primary content; other listed content elements may be involved in tasks as well.</td>
<td>4, 2</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Evidence Statement Topic Tally: Grade 3

Tally the number of evidence statements for each of the following topics (some evidence statements may apply to multiple topics).

*Note: the number of evidence statements is not equal to the number of questions on each exam.*

<table>
<thead>
<tr>
<th>Topic</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add/subtract whole numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiply whole numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divide whole numbers</td>
<td></td>
<td></td>
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<tr>
<td>Fractions</td>
<td></td>
<td></td>
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<tr>
<td>Word problems</td>
<td></td>
<td></td>
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<tr>
<td>Area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tally the number of evidence statements for each of the following domains (some evidence statements may apply to multiple topics):

*Note: the number of evidence statements is not equal to the number of questions on each exam.*

<table>
<thead>
<tr>
<th>Domain</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations and Algebraic Thinking (OA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number and Operations in Base Ten (NBT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Numbers and Operations – Fractions (NF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement and Data (MD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geometry (G)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PARCC Prototype Tasks: Grade 3

Task #1: Fluency:
Click on all the equations that are true.

Click on all the equations that are true.

☐ 8 \times 9 = 81
☐ 54 \div 9 = 24 \div 6
☐ 7 	imes 5 = 25
☐ 8 \times 3 = 4 \times 6
☐ 49 \div 7 = 56 \div 8

CCSS(s): ______________________________

Claim(s) supported: ________    Type: ________

EOY Evidence Statement Key(s): ______________________________

Task #2: Fractions on a Number Line
Drag each fraction to the correct location on the number line.

The fraction number line task is adapted from a task available at:

CCSS(s): ______________________________

Claim(s) supported: ________    Type: ________

EOY Evidence Statement Key(s): ______________________________
PARCC Prototype Tasks: Grade 3

Task #3: The Field
CCSS(s): __________________________

Part a:
Claim(s) supported: _______ Type: _______

PBA/EOY Evidence Statement Key(s): ______

Part b-question 1:
Claim(s) supported: _____Type: _______

PBA/EOY Evidence Statement Key(s):

Part b-question 2:
Claim(s) supported: _____Type: _______

PBA Evidence Statement Key(s): ______

Explain why the two fractions above are equal.

Reset
PARCC Prototype Tasks: Grade 3

Task #4: Flower Gardens

Part a-question 1:
CCSS(s): ________________________
Claim(s) supported: _____ Type: ______
PBA/EOY Evidence Statement Key(s):

Part a-question 2:
CCSS(s): ________________________
Claim(s) supported: _____ Type: ______
EOY Evidence Statement Key(s):

Part a
The picture shows Mark’s flower garden.
Fill in the blank to make a fraction that represents the part of Mark’s garden that is covered with flowers.

Which letter represents this fraction’s location on the number line?

A B C D E

0 1

Your answer: _______
Parts b and c:
CCSS(s): ____________________________

Claim(s) supported: ________  Type: ________

PBA/EOY Evidence Statement Key(s): _________

Part b
Julia is planting flowers. She wants to cover 3/4 of the garden with flowers.

Drag a tile onto Julia’s garden that will finish covering 3/4 of her garden with flowers.

Possible tiles:

Part c
Julia wants to plant flowers in a second garden, but she has not started yet.

Drag a different tile to each part of Julia’s garden so that 1/2 of her garden is covered with flowers.

Possible tiles:
Task #5: Fractions on the Number Line

Part a:

CCSS(s): ___________

Claim(s) supported: ______ Type: ______ EOY Evidence Statement Key(s): __________

Part a
Drag a fraction to match each location on the number line.

Parts b and c:

CCSS(s): __________

Claim(s) supported: ______ Type: ______

PBA Evidence Statement Key(s): __________ EOY Evidence Statement Key(s): __________

Part b
Drag tiles to build fractions that make the statement true. There is more than one correct answer.

Part c
Drag tiles to build fractions that make the statement true. There is more than one correct answer.
Part d-question 1:

CCSS(s): __________

Claim(s) supported: ______ Type: ______

PBA Evidence Statement Key(s): __________

EOY Evidence Statement Key(s): __________

Part d
Drag the sliders below to create fraction strips for the two equivalent fractions shown. First divide the strips into sections, and then shade in some of the sections.

\[ \frac{1}{2} = \frac{3}{6} \]

Part d-question 2 and part e:

CCSS(s): __________

Claim(s) supported: ______ Type: ______

PBA Evidence Statement Key(s): __________

Part d-question 2

Write your answers to the following problem in your answer booklet.

Explain how the fraction strips can show that the fractions \( \frac{3}{6} \) and \( \frac{1}{2} \) are equivalent.

Part e

Write your answer to the following problem in your answer booklet.

Two fractions have different numerators and denominators. Can the two fractions have the same location on the number line? Explain.
Task #6: Mariana’s Fractions

Part a:
CCSS(s): ____________

Claim(s) supported: ______ Type: ______ EOY Evidence Statement Key(s):__________

Part a
Write your answers to the following problem in your answer booklet.
Mariana is learning about fractions.
Show how she can divide this hexagon into 6 equal pieces. Write a fraction that shows how much of the hexagon each piece represents.

Parts b and c:
CCSS(s): ____________

Claim(s) supported: ______ Type: ______ EOY Evidence Statement Key(s):__________

Part b
Now show Mariana how to partition this number line into sixths. You can drag and move the marker anywhere on the number line as many times as you like.

Part c
Mariana thinks that $\frac{5}{6}$ is greater than 1. Her thinking is incorrect.

Place the fraction $\frac{5}{6}$ on the number line.
PARCC Prototype Tasks: Grade 3

Part d:
CCSS(s): __________

Claim(s) supported: ______ Type: ______ PBA Evidence Statement Key(s): __________

Part d
Write your answer to the following problem in your answer booklet.

Mariana thinks that \( \frac{3}{4} \) is greater than \( \frac{5}{6} \).

Do you agree or disagree with Mariana? Use the number line and words to explain your answer.

\[
\begin{array}{c}
0 & 1 & 1\
\hline
\frac{1}{2} & & \\
\end{array}
\]

Part e-question a:
CCSS(s): __________

Claim(s) supported: ______ Type: ______ EOY Evidence Statement Key(s): __________

Part e-question a
a. Place the fraction \( \frac{3}{4} \) on the number line.

\[
\begin{array}{c}
0 & 1 & 1\
\hline
\frac{1}{2} & & \\
\end{array}
\]

Part e-part b-part 1:
CCSS(s): __________

Claim(s) supported: ____ Type: ______ PBA/EOY Evidence Statement Key(s): __________

Part e-part b-part 2:
CCSS(s): __________

Claim(s) supported: ____ Type: ______

EOY Evidence Statement Key(s): __________

Part e-question b
b. What is a fraction that is equivalent to \( \frac{3}{4} \)?

Place this fraction on the number line.

\[
\begin{array}{c}
0 & 1 & 1\
\hline
\frac{1}{2} & & \\
\end{array}
\]
PARCC Prototype Tasks: Grade 3

Task #7: School Mural

Part a:
CCSS(s): ____________________________

Claim(s) supported: _______  Type: ______

PBA/EOY Evidence Statement Key(s): _______

EOY Evidence Statement Key(s): ___________

Part a

There is a large mural made of colored tiles at the entrance of Rena’s school.

The mural is made with 48 square tiles and is 12 tiles wide.

Drag tiles into the boxes to show a number sentence that can be used to find how many tiles high the mural is.
Part b:
CCSS(s): ________________________________

Claim(s) supported: _______  Type: _______

PBA Evidence Statement Key(s): ____________

Part b
There is a large mural made of colored tiles at the entrance of Rena's school.

A part of the mural was damaged in a heavy storm as shown. The part of the mural that was NOT damaged is 5 tiles long and 4 tiles high.

Rena wants to know how many tiles need to be replaced. First drag the tiles to label the model. Then fill in the blank with the number of tiles that need to be replaced in the mural.

4 x 4  4 x 5  5 x 7  4 x 7  5 x 10

Part to be replaced

= 4 x 12

tiles need to be replaced in the mural.
**Evidence Statement Topic Tally: Grade 7**

Tally the number of evidence statements for each of the following (some evidence statements may apply to multiple topics):

*Note: the number of evidence statements is not equal to the number of questions on each exam.*

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<thead>
<tr>
<th>Topic</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportional relationships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add/subtract rational numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiply/divide rational numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressions/equations with variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geometry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statistics</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tally the number of evidence statements for each of the following domains (some evidence statements may apply to multiple topics):

*Note: the number of evidence statements is not equal to the number of questions on each exam.*

<table>
<thead>
<tr>
<th>Domain</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratios and Proportional Relationships (RP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Number System (NS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressions and Equations (EE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geometry (G)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statistics and Probability (SP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Task #1: Speed

CCSS(s): _______________

Claim(s) supported: _______  Type: _______

PBA/EOY Evidence Statement Key(s): ________

The speed of an object is defined as the change in distance divided by the change in time.

Information about objects A, B, C and D are shown. Objects C and D both have constant speed.

Based on the information given, drag and drop the object names in order from greatest speed to least speed in the table provided.
Task #2: School Supplies

CCSS(s): ________________

Claim(s) supported: _______  Type: _______

PBA/EOY Evidence Statement Key(s): __________

Part a
Jane and Eric are helping their teacher buy supplies for a research project. Every student will get a bag with 2 pencils and 30 index cards.

The teacher gave Jane $17 to buy pencils from the school store. The pencils come in boxes of 12 and cost $1.69 per box.

Eric was given $19 to buy index cards at an office supply store. Index cards are sold in packs of 150 cards and cost $2.99 per pack.

Jane buys as many boxes of pencils as she can afford. Eric buys as many packages of index cards as he can afford. How many complete bags of supplies can they make?

- Fewer than 10
- Between 10 and 24
- Between 25 and 40
- More than 40

Part b
Jane and Eric are helping their teacher buy supplies for a research project. Every student will get a bag with 2 pencils and 30 index cards.

The teacher gave Jane $17 to buy pencils from the school store. The pencils come in boxes of 12 and cost $1.69 per box.

Eric was given $19 to buy index cards at an office supply store. Index cards are sold in packs of 150 cards and cost $2.99 per pack.

Each bag contains two pencils and 30 index cards. How much will each bag cost? Give your answer to the nearest cent. Fill in the blank to complete the sentence.

Each bag of supplies cost _______ cents to make.
PART #3: ANNE’S FAMILY TRIP

CCSS(s): ______________________________________

Claim(s) supported: ________  Type: ________

PBA/EOY Evidence Statement Key(s): ________________________________

Part a

Anne’s family is driving to her uncle’s house. The family travels 383.5 miles between 10:15 a.m. and 4:45 p.m.

What is an equation that Anne can use to determine their average rate of travel for the day, $R$, in miles per hour? Drag the tiles to complete an equation.

```
383.5  6.5  10.25  4.75
+  -  •  ÷

= $R$
```

(continued on next page)
Part b

Anne’s family is driving to her uncle’s house. The family travels 383.5 miles between 10:15 a.m. and 4:45 p.m.

Calculate the family’s average rate of travel for the day. Then fill in the blank to complete the following statement. You can enter a whole number or a decimal rounded to the nearest tenth.

The family's average rate of travel for the day is [ ] miles per hour.

Part c

Anne’s family is driving to her uncle’s house. The family travels 383.5 miles between 10:15 a.m. and 4:45 p.m.

Anne tells her family, "It’s a good thing we traveled as fast as we did. If our rate had been 50 miles per hour, we wouldn’t have gotten to his house until about..."

Fill in the blank to complete the following statement.

If their average rate had been 50 miles per hour, Anne's family would have arrived at her uncle's house at [ ] : [ ] p.m.
PARCC Prototype Tasks: Grade 7

Task #4: TV Sales
CCSS(s): ________________

Claim(s) supported: _______  Type: _______

EOY Evidence Statement Key(s): _______________

Part a
A store is advertising a sale with 10% off all items in the store. Sales tax is 5%.

A 32-inch television is regularly priced at $295.00. What is the total price of the television, including sales tax, if it was purchased on sale? Fill in the blank to complete the sentence. Round your answer to the nearest cent.

The total cost of the television is $______.

CCSS(s): ________________

Claim(s) supported: _______  Type: _______

PBA Evidence Statement Key(s): _______________

Part b
Write your answers to the following problem in your answer booklet.

A store is advertising a sale with 10% off all items in the store. Sales tax is 5%.

Adam and Brandi are customers discussing how the discount and tax will be calculated.

Here is Adam's process for finding the total cost for any item in the store.
• Take 10% off the original price.
• Then, add the sales tax to the discounted price.

Adam represents his process as:

\[ T = 0.9p + 0.05(0.9p) \]

sale price + sales tax

Here is Brandi's process for finding the total cost for any item in the store.
• Determine the original price of the item, including sales tax.
• Then, take 10% off.

Brandi represents her process as:

\[ T = 1.05p - 0.10(1.05p) \]

T.V. price — 10% off plus tax discount

In both equations, \( T \) represents the total cost of the television and \( p \) represents the regular price.

Are they both correct? Use the properties of operations to justify your answer.
Task #5: Spicy Vegetables
CCSS(s): ________________

Claim(s) supported: ________  Type: ________

PBA/EOY Evidence Statement Key(s): ________________

Part a
A restaurant makes a special seasoning for all its grilled vegetables. Here is how the ingredients are mixed:

1/2 of the mixture is salt
1/4 of the mixture is pepper
1/8 of the mixture is garlic powder
1/8 of the mixture is onion powder

When the ingredients are mixed in the same ratio as shown above, every batch of seasoning tastes the same.

Study the measurements for each batch in the table. Fill in the blanks so that every batch will taste the same.

<table>
<thead>
<tr>
<th></th>
<th>Batch 1</th>
<th>Batch 2</th>
<th>Batch 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt (cups)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pepper (cups)</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Garlic powder (cups)</td>
<td>1/4</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Onion powder (cups)</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Part b
A restaurant makes a special seasoning for all its grilled vegetables. Here is how the ingredients are mixed:

1/2 of the mixture is salt
1/4 of the mixture is pepper
1/8 of the mixture is garlic powder
1/8 of the mixture is onion powder

The restaurant mixes a 12-cup batch of the mixture every week. How many cups of each ingredient do they use in the mixture each week?

[Blank spaces for cups salt, cups pepper, cups garlic powder, cups onion powder]
Evidence Statement Topic Tally: Algebra 1

Tally the number of evidence statements for each of the following topics (some evidence statements may apply to multiple topics).

*Note: the number of evidence statements is not equal to the number of questions on each exam.*

<table>
<thead>
<tr>
<th>Topic</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear equations/functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quadratic equations/functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exponential functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other functions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Square root, cube root, piecewise, absolute value, rational, cubic with linear and quadratic roots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polynomial expressions/equations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inequalities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tally the number of evidence statements for each of the following domains (some evidence statements may apply to multiple topics):

*Note: the number of evidence statements is not equal to the number of questions on each exam.*

<table>
<thead>
<tr>
<th>Domain</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Number System (N-RN)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantities (N-Q)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeing Structure in Expressions (A-SSE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arithmetic w/Polynomials and Rational Expression (A-APR)</td>
<td></td>
<td></td>
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<tr>
<td>Creating Equations (A-CED)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reasoning w/Equations and Inequalities (A-REI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpreting Functions (F-IF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Functions (F-BF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear, Quadratic, and Exponential Models (F-LE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpreting Categorical and Quantitative Data (S-ID)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th/8th grade</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PARCC Prototype Tasks: Algebra 1

Task #1: Functions

CCSS(s): ________________________________

Claim(s) supported: _______ Type: _______

EOY Evidence Statement Key(s): ___________

A portion of the graph of a quadratic function $f(x)$ is shown in the xy-plane. Selected values of a linear function $g(x)$ are shown in the table.

<table>
<thead>
<tr>
<th>$x$</th>
<th>$g(x)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4</td>
<td>7</td>
</tr>
<tr>
<td>-1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>-5</td>
</tr>
<tr>
<td>5</td>
<td>-11</td>
</tr>
</tbody>
</table>

For each comparison below, use the drop-down menu to select a symbol that correctly indicates the relationship between the first and the second quantity.

<table>
<thead>
<tr>
<th>First Quantity</th>
<th>Comparison</th>
<th>Second Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>The y-coordinate of the y-intercept $f(x)$</td>
<td>$\leq$</td>
<td>The y-coordinate of the y-intercept $g(x)$</td>
</tr>
<tr>
<td>$f(3)$</td>
<td>$\leq$</td>
<td>$g(3)$</td>
</tr>
<tr>
<td>Maximum value of $f(x)$ on the interval $-5 \leq x \leq 5$</td>
<td>$\leq$</td>
<td>Maximum value of $g(x)$ on the interval $-5 \leq x \leq 5$</td>
</tr>
<tr>
<td>$f(5) - f(2)$</td>
<td>$\leq$</td>
<td>$g(5) - g(2)$</td>
</tr>
<tr>
<td>$5 - 2$</td>
<td></td>
<td>$5 - 2$</td>
</tr>
</tbody>
</table>
PARCC Prototype Tasks: Algebra 1

Task #2: Seeing Structure in an Equation

It is given that:

\[24 + 10x - x^2 = p - (x - 5)^2\]

Find the value of \(p\).

When you are finished, enter your answer below.

\[p = \]

CCSS(s): _______________________________

Claim(s) supported: ________  Type: ________

PBA/EOY Evidence Statement Key(s): __________

Task #3: Seeing Structure in a Quadratic Equation

Solve the following equation:

\[(3x - 2)^2 = 6x - 4\]

When you are finished, enter the solution(s) below.

Solution 1: 

\[
\begin{array}{c}
\square \\
\square
\end{array}
\]

Click + to enter another solution, or click done

CCSS(s): _______________________________

Claim(s) supported: ________  Type: ________

PBA/EOY Evidence Statement Key(s): __________
Task #4: Quadratic Transformation

Part a

CCSS(s): ______________

Claim(s) supported: _____  Type: _______

EOY Evidence Statement Key(s): ________

Part a

The graph of the quadratic function $f(x) = 2(x - 5)^2 + 6$ is shown.

Drag the three sliders to create the graph of a new function, $p(x)$, such that $p(x) = -f(x)$. Each slider affects a different parameter of the function.

Fill in the blanks to give the coordinates of points $D'$, $E'$, and $F'$ that lie on the new function $p(x)$ and that are the images of points $D$, $E$, and $F$ that lie on $f(x)$.

$D'(_____, _____), E'(_____, _____), F'(_____, _____)$
PARCC Prototype Tasks: Algebra 1

Task #4: Quadratic Transformation (continued)

Part b-questions a and b

CCSS(s): ______________

Claim(s) supported: _____ Type: ________

EOY Evidence Statement Key(s): ________

Part b-question c

Claim(s) supported: _____ Type: ________

PBA Evidence Statement Key(s): ________

Part b

Write your answers to the following problem in your answer booklet.

The graph of the quadratic function $f(x) = 2(x - 5)^2 + 6$ is shown.

The graph of a new function, $g(x)$, is obtained by applying a congruence transformation to the graph of $f(x)$, which takes the points $D$, $E$, and $F$ to the points $D'$, $E'$, and $F'$, respectively.

a. Describe a sequence of congruence transformations that gives the graph of the new function $g(x)$.

b. Write an equation for $g(x)$.

c. Compare your equation for $g(x)$ to the equation of the original function, $f(x)$. How do the differences in the equations reveal the transformations you described in part (a)?
Task #5: Rabbit Populations

Part a:

CCSS(s): __________________________

Claim(s) supported: ________ Type: ________

EOY Evidence Statement Key(s):

Part a

A rabbit population can increase at a rapid rate if left unchecked. Assume that 10 rabbits are put in an enclosed wildlife ranch and the rabbit population triples each year for the next 5 years, as shown in the table.

<table>
<thead>
<tr>
<th>Year</th>
<th>Rabbit population</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>90</td>
</tr>
<tr>
<td>3</td>
<td>270</td>
</tr>
<tr>
<td>4</td>
<td>810</td>
</tr>
<tr>
<td>5</td>
<td>2430</td>
</tr>
</tbody>
</table>

Let \( y \) represent the number of rabbits after \( x \) years. Drag the tiles to the appropriate slots to build a function rule that could be used to model \( y \) as a function of \( x \), where \( x \) is a non-negative integer.
PARCC Prototype Tasks: Algebra 1

Task #5: Rabbit Populations (continued)

Part b:

CCSS(s): _________________________________

Claim(s) supported: ________  Type: ________

PBA Evidence Statement Key(s): __________

Part b

New Population:

A group of rabbits of a different kind is placed in a second enclosed wildlife ranch. This new population of rabbits doubles each year if left unchecked.

Which of the following statements must be true about the model for the new rabbit population compared to the model you developed for the original rabbit population? Select all that apply.

☐ The base of the exponent will change from 3 to 2.

☐ The coefficient will become 2.

☐ The y-intercept of the graph will be different.

☐ The function rule will be quadratic.

☐ As the number of years increases, the graph of this model will be less steep than the graph of the original model.

☐ As the number of years increases, the graph of this model will be steeper than the graph of the original model.
Task #5: Rabbit Populations (continued)

Part c:

CCSS(s): ________________________________

Claim(s) supported: _______ Type: _______

EOY Evidence Statement Key(s): __________

Part c

New Population:

A group of rabbits of a different kind is placed in a second enclosed wildlife ranch. This new population of rabbits doubles each year if left unchecked.

Compare the two rabbit population models. How many rabbits would you need to start with in the new rabbit population to have at least the same number of rabbits as in the original model after 5 years? Clearly explain how you found your answer.
Task #6: Isabella’s Credit Card

CCSS(s): ______________________

Claim(s) supported: _______ Type: _______

PBA Evidence Statement Key(s): _______________

Part a

Isabella owes a balance of $300 on her credit card. She has stopped making purchases with the card, and she plans to make a $40 payment each month until her debt is paid and her credit card balance is $0. The monthly rate is 1.5%, and interest is added each month to the balance that remains.

Consider the spreadsheet. In a spreadsheet, each entry (cell) is referred to by its column letter and row number. For example, 260.00 is the entry in cell D2 of this spreadsheet.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Month</td>
<td>Amount owed ($)</td>
<td>Monthly payment ($)</td>
<td>Remaining amount owed after payment ($)</td>
<td>Amount owed after 1.5% interest charge($)</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>300.00</td>
<td>40.00</td>
<td>260.00</td>
<td>263.90</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>263.90</td>
<td>40.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Drag the tiles to write a formula to find the value of cell D3.

D3 =

Drag the tiles to write a formula to find the value of cell E3.

E3 =

(continued on next page)
**Task #6: Isabella’s Credit Card (continued)**

**Part b**
Isabella owes a balance of $300 on her credit card. She has stopped making purchases with the card, and she plans to make a $40 payment each month until her debt is paid and her credit card balance is $0. The monthly rate is 1.5%, and interest is added each month to the balance that remains.

Fill in the blanks with values to correctly complete the spreadsheet. Use dollar amounts written as decimals rounded to the nearest cent.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Month</td>
<td>Amount owed ($)</td>
<td>Monthly payment ($)</td>
<td>Remaining amount owed after payment ($)</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>300.00</td>
<td>40.00</td>
<td>260.00</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>263.90</td>
<td>40.00</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td></td>
<td>40.00</td>
<td></td>
</tr>
</tbody>
</table>

**Part c**
Isabella owes a balance of $300 on her credit card. She has stopped making purchases with the card, and she plans to make a $40 payment each month until her debt is paid and her credit card balance is $0. The monthly rate is 1.5%, and interest is added each month to the balance that remains.

Fill in the blanks based on your calculations. Use dollar amounts written as decimals rounded to the nearest cent.

At the end of the sixth month, how much will Isabella still owe on the credit card?

$\underline{\phantom{00000}}$

Isabella will finish paying off her credit card debt in $\underline{\phantom{00000}}$ months.

What is the amount of Isabella’s last payment?

$\underline{\phantom{00000}}$
Task #7: Golf Balls in Water

CCSS(s): ________________________________

Claim(s) supported: ________ Type: ________

PBA Evidence Statement Key(s): ____________

Part a

Tom is doing an experiment adding golf balls to a glass jar containing water. The picture and the table show what happens to the height of the water as Tom adds golf balls.

<table>
<thead>
<tr>
<th>Number of golf balls, x</th>
<th>Height of water in centimeters, y</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9.0</td>
</tr>
<tr>
<td>1</td>
<td>10.2</td>
</tr>
<tr>
<td>2</td>
<td>11.5</td>
</tr>
<tr>
<td>3</td>
<td>12.7</td>
</tr>
<tr>
<td>4</td>
<td>13.8</td>
</tr>
</tbody>
</table>

Drag tiles to complete the sentences and the equation below based on the results of Tom’s experiment.

<table>
<thead>
<tr>
<th>golf balls</th>
<th>change</th>
<th>glass jars</th>
<th>water height</th>
<th>1.16</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>1.3</td>
<td>9.0</td>
<td>12.0</td>
<td>13.8</td>
</tr>
</tbody>
</table>

The height of the water changes at an average rate of about ________ centimeters per golf ball. If these data were graphed with the number of golf balls as the independent variable, the y-intercept for the graph would be about ________ centimeters. This means that for zero ________, the ________ is 9 centimeters. Tom’s table and graph can be represented by the trend line with the equation

\[ y = ___________ x + ___________. \]
Part b

Tom is doing an experiment adding golf balls to a glass jar containing water. The picture and the table show what happens to the height of the water as Tom adds golf balls.

<table>
<thead>
<tr>
<th>Number of golf balls, $x$</th>
<th>Height of water in centimeters, $y$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9.0</td>
</tr>
<tr>
<td>1</td>
<td>10.2</td>
</tr>
<tr>
<td>2</td>
<td>11.5</td>
</tr>
<tr>
<td>3</td>
<td>12.7</td>
</tr>
<tr>
<td>4</td>
<td>13.8</td>
</tr>
</tbody>
</table>

There are several ways that Tom could modify the conditions of his experiment.

What modifications would increase the rate of change in the height of the water level with respect to the number of golf balls? Select all that apply.

- Use larger golf balls
- Decrease the diameter of the glass jar
- Drop the golf balls into the glass jar two at a time
- Add 5 cm of water to the glass jar
- Drop the golf balls into the glass jar at a faster rate
Part c

Write your answers to the following problem in your answer booklet.

Tom repeats his experiment with a different glass jar. The new glass jar, B, has a smaller radius than the original glass jar, A.

<table>
<thead>
<tr>
<th>Number of golf balls, x</th>
<th>Height of water in centimeters, y</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9.0</td>
</tr>
<tr>
<td>1</td>
<td>10.2</td>
</tr>
<tr>
<td>2</td>
<td>11.5</td>
</tr>
<tr>
<td>3</td>
<td>12.7</td>
</tr>
<tr>
<td>4</td>
<td>13.8</td>
</tr>
</tbody>
</table>

Tom forgot to write down the initial height of the water in glass jar B, but he measured the water height at 9 centimeters after adding two golf balls.

Question a: When Tom creates graphs of the data from both experiments, how will the y-intercepts of the graphs be different for glass jar A versus glass jar B? Explain how you know.

Question b: How will the rate of change in the experiment using glass jar B be different than the rate of change in the experiment using glass jar A? Explain how you know.

Question c: Suppose glass jar B has a water height of 5 centimeters with no golf balls, and the water height increases at a rate of 2 centimeters per golf ball added. Tom continues to add golf balls to each glass jar. He discovers that there is a number of golf balls at which the height of the water in each glass jar is the same. How many golf balls will be in each jar when the water in each reaches the same height?
Tom is doing an experiment adding golf balls to a glass jar containing water. The picture and the table show what happens to the height of the water as Tom adds golf balls.

<table>
<thead>
<tr>
<th>Number of golf balls, $x$</th>
<th>Height of water in centimeters, $y$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9.0</td>
</tr>
<tr>
<td>1</td>
<td>10.2</td>
</tr>
<tr>
<td>2</td>
<td>11.5</td>
</tr>
<tr>
<td>3</td>
<td>12.7</td>
</tr>
<tr>
<td>4</td>
<td>13.8</td>
</tr>
</tbody>
</table>

**Part a:**

Use the following options to complete the sentences and the equation below based on the results of Tom’s experiment.

<table>
<thead>
<tr>
<th>golf balls</th>
<th>change</th>
<th>glass jars</th>
<th>water height</th>
<th>1.16</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>1.3</td>
<td>9.0</td>
<td>12.0</td>
<td>13.8</td>
</tr>
</tbody>
</table>

The height of the water changes at an average rate of about ____________ centimeters per golf ball. If these data were graphed with the number of golf balls as their independent variable, the y-intercept for the graph would be about ____________ centimeters. This means that for zero ____________, the ___________ is 9 centimeters. Tom’s table and graph can be represented by the trend line with the equation $y = $ ____________x + ____________.

**Part b:**

There are several ways that Tom could modify the conditions of his experiment. What modifications would increase the rate of change in the height of the water level with respect to the number of golf balls? Select all that apply.

- [ ] Use larger golf balls
- [ ] Add 5 cm of water to the glass jar
- [ ] Decrease the diameter of the glass jar
- [ ] Drop the golf balls into the glass jar two at a time
- [ ] Drop the golf balls into the glass jar at a faster rate
Tom repeats his experiment with a different glass jar. The new glass jar, B, has a smaller radius than the original glass jar, A.

<table>
<thead>
<tr>
<th>Data from Experiment with Glass Jar A</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of golf balls, x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Height of water in centimeters, y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>9.0</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>10.2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>11.5</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>12.7</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>13.8</td>
<td></td>
</tr>
</tbody>
</table>

Tom forgot to write down the initial height of the water in glass jar B, but he measured the water height at 9 centimeters after adding two golf balls.

**Question a:** When Tom creates graphs of the data from both experiments, how will the y-intercepts of the graphs be different for glass jar A versus glass jar B? Explain how you know.

**Question b:** How will the rate of change in the experiment using glass jar B be different than the rate of change in the experiment using glass jar A? Explain how you know.

**Question c:** Suppose glass jar B has a water height of 5 centimeters with no golf balls, and the water height increases at a rate of 2 centimeters per golf ball added. Tom continues to add golf balls to each glass jar. He discovers that there is a number of golf balls at which the height of the water in each glass jar is the same. How many golf balls will be in each jar when the water in each reaches the same height?
Evidence Statement Topic Tally: Grade 3

Tally the number of evidence statements for each of the following topics (some evidence statements may apply to multiple topics).

*Note: the number of evidence statements is not equal to the number of questions on each exam.*

<table>
<thead>
<tr>
<th>Topic</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add/subtract whole numbers</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Multiply whole numbers</td>
<td>HT</td>
<td>HT</td>
</tr>
<tr>
<td>Divide whole numbers</td>
<td>HT</td>
<td>HT</td>
</tr>
<tr>
<td>Fractions</td>
<td>HT</td>
<td>HT</td>
</tr>
<tr>
<td>Word problems</td>
<td>HT</td>
<td>HT</td>
</tr>
<tr>
<td>Area</td>
<td>HT</td>
<td>HT</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tally the number of evidence statements for each of the following domains (some evidence statements may apply to multiple topics):

*Note: the number of evidence statements is not equal to the number of questions on each exam.*

<table>
<thead>
<tr>
<th>Domain</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations and Algebraic Thinking (OA)</td>
<td>HT</td>
<td>HT</td>
</tr>
<tr>
<td>Number and Operations in Base Ten (NBT)</td>
<td>HT</td>
<td>HT</td>
</tr>
<tr>
<td>Measurement and Data (MD)</td>
<td>HT</td>
<td>HT</td>
</tr>
<tr>
<td>Geometry (G)</td>
<td>HT</td>
<td>HT</td>
</tr>
</tbody>
</table>

3rd grade
Task #1: Fluency:
Click on all the equations that are true.

☐ $8 \times 9 = 81$
☐ $54 \div 9 = 24 \div 6$
☐ $7 \times 5 = 25$
☐ $8 \times 3 = 4 \times 6$
☐ $49 \div 7 = 56 \div 8$

CCSS(s): $3.OA.7$, $3.OA.7$

Claim(s) supported: $A$, $E$  Type: $I$

EOY Evidence Statement Key(s): $3.OA.7$

Task #2: Fractions on a Number Line
Drag each fraction to the correct location on the number line.

•

$1/2$  $3/2$  $6/2$

The fraction number line task is adapted from a task available at

CCSS(s): $3.NF.2b$, $3.NF.7$

Claim(s) supported: $I$  Type: $A$

EOY Evidence Statement Key(s): $3.NF.2$
Task #3: The Field
CCSS(s): 3.NF.1, 3.NF.2a, 3.NF.7

Part a:
Claim(s) supported: A Type: I
PBA/Evidence Statement Key(s): 3.NF.1

Part b-part 1:
Claim(s) supported: A Type: I
PBA/Evidence Statement Key(s): 3.NF.1

Part b-part 2:
Claim(s) supported: C Type: II
PBA Evidence Statement Key(s): 3.C.3.1

Parts a and b together:
Claim(s) supported: A+C Type: II
PBA Evidence Statement Key(s): 3.C.3.1
Task #4: Flower Gardens

Part a-part 1:
CCSS(s): \text{3.NF.1}

Claim(s) supported: \underline{A}  Type: I

PBA/EOY Evidence Statement Key(s): \text{3.NF.1}

Part a-part 2:
CCSS(s): \text{3.NF.2}

Claim(s) supported: \underline{A}  Type: I

PBA/EOY Evidence Statement Key(s): \text{3.NF.2}

Parts b and c:
CCSS(s): \text{3.NF.3b}

Claim(s) supported: \underline{A}  Type: I

PBA/EOY Evidence Statement Key(s): \text{3.NF.3b-1}

Parts a, b, and c together:
CCSS(s): \text{3.NF.1, 2, 3b}

Claim(s) supported: \underline{A+C}  Type: II

PBA Evidence Statement Key(s): \text{3,3-1}
Task #5: Fractions on the Number Line

Part a:

CCSS(s): $\frac{3}{6}, \frac{2}{2}$
Claim(s) supported: $A$ Type: $I$
EOY Evidence Statement Key(s): $\frac{3}{6}, \frac{2}{2}$

Parts b and c:

CCSS(s): $\frac{3}{6}, \frac{3}{3}$
Claim(s) supported: $A$ Type: $I$
PBA Evidence Statement Key(s): $\frac{3}{6}, \frac{3}{3}$
EOY Evidence Statement Key(s): $\frac{3}{6}, \frac{3}{3}$

Part d-part 1:

CCSS(s): $\frac{3}{6}, \frac{2}{2}$
Claim(s) supported: $B, C$ Type: $I$ or $II$
PBA Evidence Statement Key(s): $\frac{3}{6}, \frac{3}{3}$
EOY Evidence Statement Key(s): $\frac{3}{6}, \frac{2}{2}$

Part d-part 2 and part e:

CCSS(s): $\frac{3}{6}, \frac{3}{3}$
Claim(s) supported: $A, C$ Type: $II$
PBA/EEOY Evidence Statement Key(s): $\frac{3}{6}, \frac{3}{3}$
Task #6: Mariana’s Fractions

Part a:
CCSS(s): 3.C.2

Claim(s) supported: B Type: I
EOY Evidence Statement Key(s): 3.C.2

Part b and c:
CCSS(s): 3.NF.2a

Claim(s) supported: A Type: I
EOY Evidence Statement Key(s): 3.NF.2

Part d:
CCSS(s): 3.NF.3d

Claim(s) supported: A, C Type: II
PBA Evidence Statement Key(s): 3.C.4.a

Part e-part a:
CCSS(s): 3.NF.2b

Claim(s) supported: A Type: I
EOY Evidence Statement Key(s): 3.NF.2b

Part e-part b-part 1:
CCSS(s): 3.NF.3d

Claim(s) supported: A Type: I
PBA/EOY Evidence Statement Key(s): 3.NF.3b or 2

Part e-part b-part 2:
CCSS(s): 3.NF.2b

Claim(s) supported: A Type: I
EOY Evidence Statement Key(s): 3.NF.2b
Task #7: School Mural

**Part a:**
CCSS(s): 3.OA.3, 4, 5, 6; 3.MD.7a, b

Claim(s) supported: A Type: I

PBA/EOY Evidence Statement Key(s): 3.OA.3-14, 2

EOY Evidence Statement Key(s): 3.MD.7b-1

**Part b:**
CCSS(s): 3.OA.5; 3.MD.7c

Claim(s) supported: A, C Type: II

PBA Evidence Statement Key(s): 3.C.3-2 (3.04.1)

3.C.1-1 (3.04.5) ; 3.C.1-3 (3.04.7)
Evidence Statement Topic Tally: Grade 7

Tally the number of evidence statements for each of the following (some evidence statements may apply to multiple topics):

<table>
<thead>
<tr>
<th>Topic</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportional relationships</td>
<td>UHF UHF UHF</td>
<td>UHF 1 1/1</td>
</tr>
<tr>
<td>Add/subtract rational numbers</td>
<td>UHF UHF UHF</td>
<td>UHF 1</td>
</tr>
<tr>
<td>Multiply/divide rational numbers</td>
<td>UHF UHF UHF</td>
<td>UHF 1</td>
</tr>
<tr>
<td>Add/subtract/factor/expand linear expressions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressions/equations with variables</td>
<td>UHF 1</td>
<td>1 1/1</td>
</tr>
<tr>
<td>Geometry</td>
<td>1</td>
<td>UHF 1 1</td>
</tr>
<tr>
<td>Statistics</td>
<td>1</td>
<td>UHF UHF 1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratios and Proportional Relationships (RP)</td>
<td>UHF UHF UHF</td>
<td>UHF 1</td>
</tr>
<tr>
<td>The Number System (NS)</td>
<td>UHF UHF UHF</td>
<td>UHF 1</td>
</tr>
<tr>
<td>Expressions and Equations (EE)</td>
<td>UHF 1</td>
<td>UHF 1</td>
</tr>
<tr>
<td>Geometry (G)</td>
<td>UHF 1</td>
<td></td>
</tr>
<tr>
<td>Statistics and Probability (SP)</td>
<td></td>
<td>UHF UHF 1</td>
</tr>
<tr>
<td>6th grade</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topic</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratios and Proportional Relationships (RP)</td>
<td>UHF UHF UHF</td>
<td>UHF 1</td>
</tr>
<tr>
<td>The Number System (NS)</td>
<td>UHF UHF UHF</td>
<td>UHF 1</td>
</tr>
<tr>
<td>Expressions and Equations (EE)</td>
<td>UHF 1</td>
<td>UHF 1</td>
</tr>
<tr>
<td>Geometry (G)</td>
<td>UHF 1</td>
<td></td>
</tr>
<tr>
<td>Statistics and Probability (SP)</td>
<td></td>
<td>UHF UHF 1</td>
</tr>
<tr>
<td>6th grade</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
PARCC Sample Tasks: Seventh Grade

Task #1: Speed

The speed of an object is defined as the change in distance divided by the change in time.

Information about objects A, B, C and D are shown. Objects C and D both have constant speed.

Based on the information given, drag and drop the object names in order from greatest speed to least speed in the table provided.

| Object: A | Greatest Speed |
| Object: B |                |
| Object: C |                |
| Object: D | Least Speed   |

CCSS(s): 7.RP.2b

Claim(s) supported: I Type: A

PBA/EOY Evidence Statement Key(s): 7.RP.2b

Task #2: School Supplies

Part a: Jamie and Erin are helping their teacher buy supplies for a research project. Every student will get a bag with 2 pencils and 30 index cards.

The teacher gave Jamie $17 to buy pencils from the school store. The pencils come in boxes of 12 and cost $1.49 per box.

Jamie was given $17 to buy index cards at an office supply store. Index cards come in packs of 50 cards and cost $1.49 per pack.

Jamie has 35 boxes of pencils and 500 index cards. How many complete bags of supplies can they make?

Part b: Jamie and Erin are helping their teacher buy supplies for a research project. Every student will get a bag with 2 pencils and 30 index cards.

The teacher gave Jamie $17 to buy pencils from the school store. The pencils come in boxes of 12 and cost $1.49 per box.

Jamie was given $17 to buy index cards at an office supply store. Index cards come in packs of 50 cards and cost $1.49 per pack.

Jamie has 35 boxes of pencils and 500 index cards. How much will each bag cost? Round your answer to the nearest cent. Fill in the table to complete the evidence.

CCSS(s): 7.EE.3

Claim(s) supported: A Type: I

PBA/EOY Evidence Statement Key(s): 7.EE.3
Task #3: Anne’s Family Trip

Part a:

Anne’s family is driving to her uncle’s house. The family travels 383.5 miles between 10:15 a.m. and 4:45 p.m.

What is an equation that Anne can use to determine their average rate of travel for the day, \( r \), in miles per hour? Drag the tiles to complete the equation.

\[
\frac{383.5\, \text{mi}}{4.5\, \text{hr}} = r
\]

Part b:

Anne’s family is driving to her uncle’s house. The family travels 333.5 miles between 10:15 a.m. and 4:45 p.m.

Calculate the family’s average rate of travel for the day. Then fill in the blank to complete the following statement. You can enter a whole number or a decimal rounded to the nearest tenth.

The family’s average rate of travel for the day is \( \underline{59} \) miles per hour.

Part c:

Anne’s family is driving to her uncle’s house. The family travels 303.5 miles between 10:15 a.m. and 4:45 p.m.

Anne tells her family, “It’s a good thing we traveled as fast as we did. If our rate had been 50 miles per hour, we wouldn’t have gotten to his house until about…”

Fill in the blank to complete the following statement.

If their average rate had been 50 miles per hour, Anne’s family would have arrived at her uncle’s house at \( \underline{5:45} \) p.m.

CCSS(s): 7.RP.1 (Represent 7.NS.3)

Claim(s) supported: \( \underline{I} \)

Type: \( A \)

PBA Evidence Statement Key(s), if applicable:

EOY Evidence Statement Key(s), if applicable:
Task #4: TV Sales

Part a

A store is advertising a sale with 10% off all items in the store. Sales tax is 5%.

A 32-inch television is regularly priced at $295.00. What is the total price of the television, including sales tax, if it was purchased on sale? Fill in the blank to complete the sentence. Round your answer to the nearest cent.

The total cost of the television is $\underline{344.50}.

CCSS(s): 7.RP.3

Claim(s) supported: \( \square \) Type: \( \square \)

EOY Evidence Statement Key(s): 7.RP.3

Part b

Write your answers to the following problem in your answer booklet.

A store is advertising a sale with 10% off all items in the store. Sales tax is 5%.

Adam and Brandi are customers discussing how the discount and tax will be calculated.

Here is Adam’s process for finding the total cost for any item in the store:

- Take 10% off the original price.
- Then, add the sales tax to the discounted price.

Adam represents his process as:

\[
T = 0.9p + 0.05(0.9p) = 0.9p + 0.045p = 0.945p
\]

Here is Brandi’s process for finding the total cost for any item in the store:

- Determine the original price of the item, including sales tax.
- Then, take 10% off.

Brandi represents her process as:

\[
T = 1.05p - 0.10(1.05p) = 1.05p - 0.105p = 0.945p
\]

In both equations, \( T \) represents the total cost of the television and \( p \) represents the regular price. Are they both correct? Use the properties of operations to justify your answer.

CCSS(s): 7.EE.1

Claim(s) supported: \( \square \) Type: \( \square \)

PBA Evidence Statement Key(s): 7.C.1-2
PARCC Sample Tasks: Seventh Grade

Task #5: Spicy Vegetables

Part a
A restaurant makes a special seasoning for all its grilled vegetables. Here is how the ingredients are mixed:

1/2 of the mixture is salt
1/4 of the mixture is pepper
1/8 of the mixture is garlic powder
1/8 of the mixture is onion powder

When the ingredients are mixed in the same ratio as shown above, every batch of seasoning tastes the same.

Study the measurements for each batch in the table. Fill in the blanks so that every batch will taste the same.

<table>
<thead>
<tr>
<th>Batch 1</th>
<th>Batch 2</th>
<th>Batch 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salt (cups)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Pepper (cups)</td>
<td>1/2</td>
<td>1</td>
</tr>
<tr>
<td>Garlic powder (cups)</td>
<td>1/4</td>
<td>1/4</td>
</tr>
<tr>
<td>Onion powder (cups)</td>
<td>1/8</td>
<td>1/8</td>
</tr>
</tbody>
</table>

Part b
A restaurant makes a special seasoning for all its grilled vegetables. Here is how the ingredients are mixed:

1/2 of the mixture is salt
1/4 of the mixture is pepper
1/8 of the mixture is garlic powder
1/8 of the mixture is onion powder

The restaurant mixes a 12-cup batch of the mixture every week. How many cups of each ingredient do they use in the mixture each week?

6 cups salt
3 cups pepper
1 1/2 cups garlic powder
1 1/8 cups onion powder

CCSS(s): 7.RP.1 (Note: Center also assessed 7.EE.3)

Claim(s) supported: A Type: I

PBA/EOY Evidence Statement Key(s): 7.RP.1
Tally the number of evidence statements for each of the following:

<table>
<thead>
<tr>
<th>Topic</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear equations/functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quadratic equations/functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exponential functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other functions:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Square root, cube root, piecewise, absolute value, rational, cubic with linear and quadratic roots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polynomial expressions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inequalities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domain</th>
<th>PBA</th>
<th>EOY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Number System (N-RN)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantities (N-Q)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complex Number System (N-CN)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seeing Structure in Expressions (A-SSE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arithmetic w/Polynomials and Rational Expression (A-APR)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creating Equations (A-CED)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reasoning w/Equations and Inequalities (A-REI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpreting Functions (F-IF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building Functions (F-BF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear, Quadratic, and Exponential Models (F-LE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpreting Categorical and Quantitative Data (S-ID)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PARCC Sample Tasks: High School

Task #2: Seeing Structure in an Equation

It is given that:

\[ 24 + 10x - x^2 = p - (x - 5)^2 \]

\[ = p - x^2 + 10x - 25 \]

Find the value of p.

\[ 49 = p \]

When you are finished, enter your answer below.

\[ p = \]

CCSS(s): \( \text{A-}\text{SSE}.3 \)

Claim(s) supported: \( B \) Type: \( I \)

PBA Evidence Statement Key(s), if applicable: \( \text{A-}\text{SSE}.3 \text{a-factor} \quad \text{p-value} \)

EOY Evidence Statement Key(s), if applicable: \( \text{A-}\text{SSE}.3 \text{a-factor} \quad \text{p-value} \)

Task #3: Seeing Structure in a Quadratic Equation

Solve the following equation:

\[ (3x - 2)^2 = 6x - 4 \]

When you are finished, enter the solution(s) below.

Solution 1: \[ \]

Click \[ \] to enter another solution, or click \[ \text{done} \] to finish.

CCSS(s): \( \text{A-}\text{REI}.4 \text{a}\text{b} \)

Claim(s) supported: \( A \) Type: \( I \)

PBA Evidence Statement Key(s), if applicable: \( \text{A-}\text{REI}.4 \text{a}\text{b} \text{c} \)

EOY Evidence Statement Key(s), if applicable: \( \text{A-}\text{REI}.4 \text{a}\text{b} \text{c} \text{d} \text{e} \text{f} \text{g} \text{h} \text{i} \text{j} \text{k} \text{l} \text{m} \text{n} \text{o} \text{p} \text{q} \text{r} \text{s} \text{t} \text{u} \text{v} \text{w} \text{x} \text{y} \text{z} \)
Task #4: Quadratic Transformation

CCSS(s): F-IF.B.3

Part a and b-part a

Claim(s) supported: B Type: I

EOY Evidence Statement Key(s): F-BF.2,1

Part b-part b

Claim(s) supported: C Type: III

PBA Evidence Statement Key(s): HS.C.9,1
Task #5: Rabbit Populations

Part a:

CCSS(s): F-BF.1a, F-LE.2

Claim(s) supported: B Type: F

EOY Evidence Statement Key(s): F-LE.2-1

Let \( y \) represent the number of rabbits after \( x \) years. Drag the tiles to the appropriate slots to build a function rule that could be used to model \( y \) as a function of \( x \), where \( x \) is a non-negative integer.

\[
\begin{array}{c|c|c|c|c|c|c|c|c}
\text{Year} & 0 & 1 & 2 & 3 & 4 & 5 \\
\text{Rabbit population} & 10 & 20 & 30 & 40 & 50 & 60
\end{array}
\]

Part b:

CCSS(s): F-BF.1a, F-LE.2, F-LE.5

Claim(s) supported: B/C Type: F

PBA Evidence Statement Key(s): H5, C, 10, 1

Part c:

CCSS(s): F-LE.2, A-CEQ.1

Claim(s) supported: A Type: F

EOY Evidence Statement Key(s): F-LE.2-2, H5, Int 3-1, (F-LE.2) (5B)
Task #2: Isabella’s Credit Card

Part a:
Isabella owes a balance of $300 on her credit card. She has stopped making purchases with the card, and she plans to make a $40 payment each month until her debt is paid. Her credit card balance is $30. The monthly rate is 1.5%, and interest is added each month to the balance that remains.

Consider the spreadsheet. Each cell refers to its column letter and row number. For example, cell B3 is the entry in cell B2 of this spreadsheet.

<table>
<thead>
<tr>
<th>Month</th>
<th>Amount owed ($)</th>
<th>Monthly payment ($)</th>
<th>Remaining amount owed after payment ($)</th>
<th>Amount owed after 1.5% interest charge($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>300.00</td>
<td>40.00</td>
<td>260.00</td>
<td>263.90</td>
</tr>
<tr>
<td>2</td>
<td>263.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A3 | B3 | C2 | D3 | E3 | 0.015 | 1.015 | × | + | + | + | + | + | + | + |

Drag the tiles to write a formula to find the value of cell D3.

Drag the tiles to write a formula to find the value of cell E3.

Part b:
Isabella owes a balance of $300 on her credit card. She has stopped making purchases with the card, and she plans to make a $40 payment each month until her debt is paid. Her credit card balance is $30. The monthly rate is 1.5%, and interest is added each month to the balance that remains.

Fill in the blanks with values to correctly complete the spreadsheet. Use dollar amounts written as decimals rounded to the nearest cent.

<table>
<thead>
<tr>
<th>Month</th>
<th>Amount owed ($)</th>
<th>Monthly payment ($)</th>
<th>Remaining amount owed after payment ($)</th>
<th>Amount owed after 1.5% interest charge($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>300.00</td>
<td>40.00</td>
<td>260.00</td>
<td>263.90</td>
</tr>
<tr>
<td>2</td>
<td>263.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A3 | B3 | C2 | D3 | E3 | 0.015 | 1.015 | × | + | + | + | + | + | + | + |

Part c:
Isabella owes a balance of $300 on her credit card. She has stopped making purchases with the card, and she plans to make a $40 payment each month until her debt is paid. Her credit card balance is $30. The monthly rate is 1.5%, and interest is added each month to the balance that remains.

Fill in the blanks based on your calculations. Use dollar amounts written as decimals rounded to the nearest cent.

At the end of the 6th month, how much will Isabella still owe on the credit card?

Isabella will finish paying off her credit card debt in months.

What is the amount of Isabella’s last payment?

CCSS(s): ________

Claim(s) supported: D  Type: III

PBA Evidence Statement Key(s), if applicable: 15.0, 2-9

EOY Evidence Statement Key(s), if applicable:
PARCC Sample Tasks: High School

Task #: 3: Golf Balls in Water

Part a:

Tom is doing an experiment adding golf balls to a glass jar containing water. The picture and the table show what happens to the height of the water as Tom adds golf balls.

<table>
<thead>
<tr>
<th>Number of golf balls</th>
<th>Height of water in centimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>3</td>
<td>9.0</td>
</tr>
<tr>
<td>4</td>
<td>12.6</td>
</tr>
<tr>
<td>5</td>
<td>12.8</td>
</tr>
</tbody>
</table>

Drag tiles to complete the column(s) and the equation below based on the results of Tom's experiment:

- Golf balls: 1, 2, 3, 4, 5
- Change: 1.2, 1.3, 9.0, 12.6, 12.8
- Glass jars: A, B
- Water height: 0.0, 1.2, 1.3, 9.0, 12.6, 12.8

The height of the water changes at an average rate of about ___ centimeters per golf ball. If these data were graphed with the number of golf balls as the independent variable, the y-intercept for the graph would be about ___ centimeters. This means that for zero golf balls, the water is at ___ centimeters.

Tom's table and graph can be represented by the trend line with the equation

\[ y = \frac{6}{5}x + \frac{4}{5} \]

Part b:

Tom is doing another experiment adding golf balls to a glass jar containing water. The picture and the table show what happens to the height of the water as Tom adds golf balls.

<table>
<thead>
<tr>
<th>Number of golf balls</th>
<th>Height of water in centimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>1</td>
<td>9.0</td>
</tr>
<tr>
<td>2</td>
<td>16.2</td>
</tr>
<tr>
<td>3</td>
<td>11.5</td>
</tr>
<tr>
<td>4</td>
<td>12.7</td>
</tr>
<tr>
<td>5</td>
<td>11.8</td>
</tr>
</tbody>
</table>

There are several ways that Tom could modify the conditions of his experiment.

What modifications would increase the rate of change in the height of the water level with respect to the number of golf balls? Block all that apply.

- Add 5 cm of water to the glass jar
- Increase the diameter of the glass jar
- Drop the golf balls into the glass jar at a faster rate

Part c:

Tom repeats his experiment with a different glass jar. The new glass jar, B, has a smaller radius than the original glass jar, A.

<table>
<thead>
<tr>
<th>Number of golf balls</th>
<th>Height of water in centimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>8.0</td>
</tr>
<tr>
<td>1</td>
<td>10.3</td>
</tr>
<tr>
<td>2</td>
<td>11.5</td>
</tr>
<tr>
<td>3</td>
<td>12.7</td>
</tr>
<tr>
<td>4</td>
<td>12.8</td>
</tr>
</tbody>
</table>

Tom forgot to write down the initial height of the water in glass jar B, but he measured the water height at 9 centimeters after adding two golf balls.

Question 1: When Tom creates graphs of the data from both experiments, how will the y-intercepts of the graphs for different test glasses A and B compare? Explain how you know.

Question 2: How will the rate of change in the experiment using glass jar B be different than the rate of change in the experiment using glass jar A? Explain how you know.

Question 3: Suppose glass jar B has a water height of 5 centimeters with no golf balls, and the water height increases at a rate of 4 centimeters per golf ball added. Tom continues to add golf balls to each glass jar. He discovers there is an nubmer of golf balls at which the height of the water in each glass jar is the same. How many golf balls will be in each jar when the water in each jar reaches the same height?

CCSS(s): F-IF.1, F-LE.2+5, F-IF.6

Claim(s) supported: D Type: III

PBA Evidence Statement Key(s), if applicable: H5.0.2-8

EDY Evidence Statement Key(s), if applicable: 
Task #1: Functions

A portion of the graph of a quadratic function \( f(x) \) is shown in the \( xy \)-plane. Selected values of a linear function \( g(x) \) are shown in the table.

<table>
<thead>
<tr>
<th>( x )</th>
<th>( f(x) )</th>
<th>( g(x) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>-5</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>-11</td>
<td></td>
</tr>
</tbody>
</table>

For each comparison below, use the drop-down menu to select a symbol that correctly indicates the relationship between the first and the second quantity.

<table>
<thead>
<tr>
<th>First Quantity</th>
<th>Comparison</th>
<th>Second Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ( y )-coordinate of the ( y )-intercept ( f(x) )</td>
<td>( \leq )</td>
<td>The ( y )-coordinate of the ( y )-intercept ( g(x) )</td>
</tr>
<tr>
<td>( f(3) )</td>
<td>( \geq )</td>
<td>( g(3) )</td>
</tr>
<tr>
<td>Maximum value of ( f(x) ) on the interval (-5 \leq x \leq 5)</td>
<td>( \leq )</td>
<td>Maximum value of ( g(x) ) on the interval (-5 \leq x \leq 5)</td>
</tr>
<tr>
<td>( f(5) - f(2) )</td>
<td>( \geq )</td>
<td>( g(5) - g(2) )</td>
</tr>
<tr>
<td>( \frac{5 - 2}{2} )</td>
<td>( \leq )</td>
<td>( \frac{5 - 2}{2} )</td>
</tr>
</tbody>
</table>

CCSS(s): F.IF.9

Claim(s) supported: \( B \) Type: I

PBA Evidence Statement Key(s), if applicable:

EOY Evidence Statement Key(s), if applicable: F.IF.9, I