MATHEMATICS ADDITIONAL SAMPLE ITEMS

This section has two parts. The first part is a set of 13 sample items for the Mathematics portion of the EOG assessment. The second part contains a table that shows for each item the standard assessed, the DOK level, the correct answer (key), and a rationale/explanation about the key and distractors. The sample items can be utilized as a mini-test to familiarize students with the item formats found on the assessment.

All example and sample items contained in this guide are the property of the Georgia Department of Education.

Item 1

Selected-Response: 1 point

Kaley is drawing a symmetrical design. She uses the line shown as the line of symmetry.

Which of these shows how Kaley should draw a triangle that touches the line of symmetry to create her symmetrical design?

A. 

B. 

C. 

D.
Item 2

Selected-Response: 1 point

Eva and Joe are each given 1 yard of ribbon for an art project. They each cut a piece of their ribbons to use for the project. Eva cut \( \frac{2}{5} \) of her ribbon, and Joe cut \( \frac{7}{8} \) of his ribbon.

Which statement accurately shows who cut the longest piece of ribbon?

A. Eva cut a longer piece of ribbon than Joe because \( \frac{2}{5} > \frac{7}{8} \).

B. Eva cut a longer piece of ribbon than Joe because \( \frac{2}{5} < \frac{7}{8} \).

C. Joe cut a longer piece of ribbon than Eva because \( \frac{2}{5} < \frac{7}{8} \).

D. Joe cut a longer piece of ribbon than Eva because \( \frac{2}{5} > \frac{7}{8} \).

Item 3

Selected-Response: 1 point

Robert has 144 pennies equally grouped in 9 rows.

How many pennies are in each row?

A. 14

B. 15

C. 16

D. 17
Item 4

Selected-Response: 1 point

The table shows the heights of four children.

<table>
<thead>
<tr>
<th>Child</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ben</td>
<td>38 inches</td>
</tr>
<tr>
<td>Kim</td>
<td>3 feet, 8 inches</td>
</tr>
<tr>
<td>Sarah</td>
<td>1 foot, 9 inches</td>
</tr>
<tr>
<td>Steve</td>
<td>44 inches</td>
</tr>
</tbody>
</table>

Which two children are the tallest?

(12 inches = 1 foot)

A. Ben and Kim
B. Ben and Steve
C. Kim and Steve
D. Sarah and Steve

Item 5

Selected-Response: 1 point

Which shape has the same number of PAIRS of parallel sides as a square?

A. regular hexagon
B. pentagon
C. rhombus
D. triangle
Item 6

Selected-Response: 1 point

The students during the first lunch period ate \( \frac{5}{8} \) pans of lasagna. The students during the second lunch period ate \( \frac{1}{8} \) pans of lasagna.

How many MORE pans of lasagna did the students during the first lunch period eat than the students during the second lunch period ate?

A. \( \frac{4}{8} \) pans
B. \( \frac{7}{8} \) pans
C. \( \frac{4}{8} \) pans
D. \( \frac{6}{8} \) pans

Item 7

Selected-Response: 1 point

Which number is a prime number?

A. 15
B. 21
C. 33
D. 47
Item 8

Selected-Response: 1 point

Josh bought oranges and apples. The apples weigh 3 times more than the oranges. The apples weigh 12 pounds.

If the weight of the oranges is represented by \( \square \), which of these shows how to find the weight of the oranges?

A. \( 3 + \square = 12 \)
B. \( \square - 3 = 12 \)
C. \( \square \times 3 = 12 \)
D. \( \frac{\square}{3} = 12 \)

Item 9

Multi-Part Multi-Select Technology-Enhanced: 2 points

Part A

A factor pair of 93 is 1 and 93.

What is another factor pair of 93?

A. 3 and 9
B. 3 and 31
C. 9 and 10
D. 3 and 90

Part B

Select TWO numbers that are multiples of 8.

A. 8
B. 22
C. 56
D. 68
E. 84
Item 10

Multi-Select Technology-Enhanced: 2 points

Yolanda has \( \frac{4}{5} \) of a bag of dog food remaining. She will put the remaining dog food in smaller bags.

Select THREE equations that can represent fractions of the bag of dog food that Yolanda can put in smaller bags.

A. \( \frac{4}{5} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} \)
B. \( \frac{4}{5} = \frac{2}{3} + \frac{2}{3} \)
C. \( \frac{4}{5} = \frac{4}{1} + \frac{1}{5} \)
D. \( \frac{4}{5} = \frac{3}{5} + \frac{1}{5} \)
E. \( \frac{4}{5} = \frac{2}{5} + \frac{1}{5} + \frac{1}{5} \)
F. \( \frac{4}{5} = \frac{1}{5} + \frac{4}{5} \)
<table>
<thead>
<tr>
<th>Item</th>
<th>Standard/Element</th>
<th>DOK Level</th>
<th>Correct Answer</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MGSE4.G.3</td>
<td>2</td>
<td>A</td>
<td>The correct answer is choice (A). When the triangle is folded across the line, it will produce an upside-down triangle. Choices (B), (C), and (D) are incorrect because they will not result in a symmetrical design.</td>
</tr>
<tr>
<td>2</td>
<td>MGSE4.NF.2</td>
<td>2</td>
<td>C</td>
<td>The correct answer is choice (C) Joe cut a longer piece of ribbon than Eva because ( \frac{2}{5} &lt; \frac{7}{8} ). Choice (A) is incorrect because ( \frac{2}{5} ) is less than ( \frac{7}{8} ), so Eva’s ribbon is shorter than Joe’s. Choice (B) is incorrect because Eva’s ribbon is the ( \frac{2}{5} ) not the ( \frac{7}{8} ). Choice (D) is incorrect because ( \frac{2}{5} ) is less than ( \frac{7}{8} ).</td>
</tr>
<tr>
<td>3</td>
<td>MGSE4.NBT.6</td>
<td>2</td>
<td>C</td>
<td>The correct answer is choice (C) 16. When 144 pennies are equally grouped into 9 rows, there are 16 pennies in each row. ( 9 \times 16 = 144 ). Choice (A) is incorrect because it is the result of dividing 14 tens by 9 to get the tens digit and 44 ones by 9 to get the ones digit. Choice (B) is incorrect because it is the result of mistaking 5 x 9 as 54. Choice (D) is incorrect because it is the result of mistaking 7 x 9 as 54.</td>
</tr>
<tr>
<td>4</td>
<td>MGSE4.MD.1</td>
<td>2</td>
<td>C</td>
<td>The correct answer is choice (C) Kim and Steve. The measurement 3 feet, 8 inches, is equivalent to 44 inches. The measurement 1 foot, 9 inches, is equivalent to 21 inches. The greatest height in the table is 44 inches, and Kim and Steve share that height. Choices (A), (B), and (D) incorrectly identify one of the children’s heights.</td>
</tr>
<tr>
<td>5</td>
<td>MGSE4.G.2</td>
<td>2</td>
<td>C</td>
<td>The correct answer is choice (C) rhombus. A square has two PAIRS of parallel sides, as does a rhombus. Choice (A) is incorrect because there are three pairs of parallel sides. Choice (B) is incorrect because a pentagon can have at most one pair of parallel sides. Choice (D) is incorrect because a triangle has no parallel sides.</td>
</tr>
<tr>
<td>Item</td>
<td>Standard/Element</td>
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</tr>
<tr>
<td>6</td>
<td>MGSE4.NF.3c</td>
<td>2</td>
<td>A</td>
<td>The correct answer is choice (A) $\frac{4}{8}$ pans. $5 - \frac{1}{8} = \frac{4}{8}$ and $5 - 3 = 2$. Choice (B) is incorrect because the numerator was found by $8 - 1$ instead of $5 - 1$. Choice (C) is incorrect because it is the result of adding the whole numbers and subtracting the fractions. Choice (D) is incorrect because it is the result of adding instead of subtracting.</td>
</tr>
<tr>
<td>7</td>
<td>MGSE4.OA.4</td>
<td>1</td>
<td>D</td>
<td>The correct answer is choice (D) 47. A prime number is only divisible by 1 and itself. Choice (A) is incorrect because 15 is divisible by 3 and 5. Choice (B) is incorrect because 21 is divisible by 3 and 7. Choice (C) is incorrect because 33 is divisible by 3 and 11.</td>
</tr>
<tr>
<td>8</td>
<td>MGSE4.OA.2</td>
<td>2</td>
<td>C</td>
<td>The correct answer is choice (C) $\Box \times 3 = 12$. Since the apples weigh 3 times more than the oranges, $\Box \times 3$ represents the weight of the apples. Since the apples weigh 12 pounds, $\Box \times 3 = 12$. Choices (A) and (B) are incorrect because they use an incorrect operation to represent the relationship. Choice (D) is incorrect because it divides the numbers in the wrong order.</td>
</tr>
<tr>
<td>9</td>
<td>MGSE4.OA.4</td>
<td>2</td>
<td>Part A: B</td>
<td>Part A: The correct answer is choice (B) 3 and 31. Choice (A) is incorrect because 3 and 9 are the digits of 93 but 9 is not a factor of 93. Choice (C) is incorrect because neither 9 nor 10 is a factor of 93 but factors of 90. Choice (D) is incorrect because $3 + 90$ is 93 but 90 is not a factor of 93. Part B: The correct answers are choices (A) and (C). Choices (B), (D), and (E) are incorrect because there is no whole number that can be multiplied by 8 to get them.</td>
</tr>
<tr>
<td>10</td>
<td>MGSE4.NF.3b</td>
<td>2</td>
<td>A/D/E</td>
<td>The correct answers are choices (A), (D), and (E). Each of these recognizes that when adding fractions, the denominators must be the same and the numerators are added together. Choice (B) is incorrect because the denominators are added. Choice (C) is incorrect because it incorrectly creates unit fractions. Choice (F) is incorrect because it results in $\frac{5}{5} = 1$.</td>
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</tbody>
</table>