Item 11

Multi-Select Technology-Enhanced: 2 points

Greg wants to build a shed to hold his gardening tools. The shed must have a volume of at least 500 cubic feet but no more than 600 cubic feet.

Select THREE sets of dimensions that meet Greg's requirements for the volume of a shed.

\( V = l \times w \times h \)

A. 6 feet wide, 9 feet long, 10 feet high
B. 7 feet wide, 8 feet long, 9 feet high
C. 10 feet wide, 6 feet long, 8 feet high
D. 9 feet wide, 9 feet long, 8 feet high
E. 8 feet wide, 8 feet long, 8 feet high
F. 9 feet wide, 8 feet long, 6 feet high

Item 12

Constructed-Response: 2 points

The hardware store is \( \frac{5}{8} \) mile from Sara's house. She walks \( \frac{1}{3} \) of the way from her house to the hardware store and then turns around and walks back home.

What distance, in miles, does Sara walk? Explain each step in the process for finding the distance Sara walks. Write your answer in the space provided.
Item 13

Extended Constructed-Response: 4 points

Addie is beginning a running program. She tracks the number of miles she runs 5 different days during a 10-day period.

![Addie's Running Graph]

**Part A**  What is the number of miles represented by point A? Write your answer in the space provided.

**Part B**  Which point represents day 5, when Addie ran 3 miles? Write your answer in the space provided.

**Part C**  During the 10-day period, Addie ran 5 days. Describe the distance Addie ran on each of those 5 days. Write your answer in the space provided.

<table>
<thead>
<tr>
<th>Part A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

Go to the next page to finish Item 13.
Item 13. Continued.

Part C
<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>11</td>
<td>MGSE5.MD.5b</td>
<td>2</td>
<td>A/B/E</td>
<td>The correct answers are choices (A), (B), and (E). Choice (A) has a volume of 540, choice (B) has a volume of 504, and choice (E) has a volume of 512. Choice (C) is incorrect because the volume is 480, which is less than 500 and too small for Greg’s shed. Choice (D) is incorrect because the volume is 648, which is greater than 600 and too big for Greg’s shed. Choice (F) is incorrect because the volume is 432, which is less than 500 and too small for Greg’s shed.</td>
</tr>
<tr>
<td>12</td>
<td>MGSE5.NF.6</td>
<td>2</td>
<td>N/A</td>
<td>See scoring rubric and exemplar responses beginning on page 77.</td>
</tr>
<tr>
<td>13</td>
<td>MGSE5.G.2</td>
<td>3</td>
<td>N/A</td>
<td>See scoring rubric and exemplar responses beginning on page 79.</td>
</tr>
</tbody>
</table>
# Mathematics Example Scoring Rubrics and Exemplar Responses

## Item 12

### Scoring Rubric

<table>
<thead>
<tr>
<th>Points</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| 2      | The response achieves the following:  
- The response demonstrates a complete understanding of multiplication of fractions as applied to real-world problems.  
- The response is correct and complete.  
- The response shows the application of a reasonable and relevant strategy.  
- Mathematical ideas are expressed coherently in the response, which is clear, complete, logical, and fully developed. |
| 1      | The response achieves the following:  
- The response demonstrates a partial understanding of multiplication of fractions as applied to real-world problems.  
- The response is mostly correct but contains either a computation error or an unclear or incomplete explanation.  
- The response shows the application of a relevant strategy, though the strategy may be only partially applied or may remain unexplained.  
- Mathematical ideas are expressed only partially in the response. |
| 0      | The response achieves the following:  
- The response demonstrates limited to no understanding of multiplication of fractions as applied to real-world problems.  
- The response is incorrect.  
- The response shows no application of a strategy.  
- Mathematical ideas cannot be interpreted or lack sufficient evidence to support even a limited understanding. |
## Item 12

### Exemplar Response

<table>
<thead>
<tr>
<th>Points Awarded</th>
<th>Sample Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Five-twelfths miles or equivalent fraction AND Multiply one-third by 2. This equals two-thirds. Multiply two-thirds by five-eighths. This equals ten twenty-fourths (which is equivalent to five-twelfths). Or other valid explanation or work.</td>
</tr>
<tr>
<td>1</td>
<td>Five-twelfths miles or equivalent fraction with no explanation or an incorrect explanation OR an explanation that contains a computation error but contains the correct process</td>
</tr>
<tr>
<td>0</td>
<td>Response is irrelevant, inappropriate, or not provided.</td>
</tr>
</tbody>
</table>
### Item 13

#### Scoring Rubric

<table>
<thead>
<tr>
<th>Points</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| **4**  | The response achieves the following:  
- The response demonstrates a complete understanding of representing real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane and interpreting coordinate values of points in the context of the situation.  
- The response is correct and complete.  
- The response shows the application of a reasonable and relevant strategy.  
- Mathematical ideas are expressed coherently in the response, which is clear, complete, logical, and fully developed. |
| **3**  | The response achieves the following:  
- The response demonstrates a nearly complete understanding of representing real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane and interpreting coordinate values of points in the context of the situation.  
- The response is mostly correct but contains either a computation error or an unclear or incomplete explanation.  
- The response shows the application of a relevant strategy, though the strategy may be only partially applied or may remain unexplained.  
- Mathematical ideas are expressed only partially in the response. |
| **2**  | The response achieves the following:  
- The response demonstrates a partial understanding of representing real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane and interpreting coordinate values of points in the context of the situation.  
- The response is only partially correct.  
- The response shows the application of a relevant strategy, though the strategy may be only partially applied or may remain unexplained.  
- Mathematical ideas are expressed only partially in the response. |
| **1**  | The response achieves the following:  
- The response demonstrates a minimal understanding of representing real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane and interpreting coordinate values of points in the context of the situation.  
- The response is only minimally correct.  
- The response shows the incomplete or inaccurate application of a relevant strategy.  
- Mathematical ideas are expressed only partially in the response. |
### Scoring Rubric

<table>
<thead>
<tr>
<th>Points</th>
<th>Rationale</th>
</tr>
</thead>
</table>
| 0      | The response achieves the following:  
- The response demonstrates limited to no understanding of representing real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane and interpreting coordinate values of points in the context of the situation.  
- The response is incorrect.  
- The response shows no application of a strategy.  
- Mathematical ideas cannot be interpreted or lack sufficient evidence to support even a limited understanding. |

### Exemplar Response

<table>
<thead>
<tr>
<th>Points Awarded</th>
<th>Sample Response</th>
</tr>
</thead>
</table>
| 4              | Part A: 2  
AND  
Part B: C  
AND  
Part C: On day 1, Addie ran 2 miles. On days 3 and 8, she ran 5 miles. On day 5, she ran 3 miles. On day 10, she ran 6 miles. *(providing two answers results in one point, providing all five answers results in two points)* |
| 3              | The student correctly answers three of the four parts. |
| 2              | The student correctly answers two of the four parts. |
| 1              | The student correctly answers one of the four parts. |
| 0              | *Response is irrelevant, inappropriate, or not provided.* |