## Answer Key

### Section 1

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>A</td>
</tr>
<tr>
<td>2.</td>
<td>C</td>
</tr>
<tr>
<td>3.</td>
<td>D</td>
</tr>
<tr>
<td>4.</td>
<td>D</td>
</tr>
<tr>
<td>5.</td>
<td>D</td>
</tr>
<tr>
<td>6.</td>
<td>A</td>
</tr>
<tr>
<td>7.</td>
<td>B</td>
</tr>
<tr>
<td>8.</td>
<td>A</td>
</tr>
<tr>
<td>9.</td>
<td>B</td>
</tr>
<tr>
<td>10.</td>
<td>D</td>
</tr>
<tr>
<td>11.</td>
<td>C</td>
</tr>
<tr>
<td>12.</td>
<td>B</td>
</tr>
<tr>
<td>13.</td>
<td>A</td>
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<tr>
<td>14.</td>
<td>A</td>
</tr>
<tr>
<td>15.</td>
<td>B</td>
</tr>
<tr>
<td>16.</td>
<td>B</td>
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<tr>
<td>17.</td>
<td>B</td>
</tr>
<tr>
<td>18.</td>
<td>D</td>
</tr>
<tr>
<td>19.</td>
<td>A</td>
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<tr>
<td>20.</td>
<td>B</td>
</tr>
<tr>
<td>21.</td>
<td>D</td>
</tr>
<tr>
<td>22.</td>
<td>A</td>
</tr>
<tr>
<td>23.</td>
<td>D</td>
</tr>
<tr>
<td>24.</td>
<td>B</td>
</tr>
<tr>
<td>25.</td>
<td>A</td>
</tr>
<tr>
<td>26.</td>
<td>B</td>
</tr>
<tr>
<td>27.</td>
<td>C</td>
</tr>
</tbody>
</table>

**Part A:** A, C

**Part B:** D

See Item-Specific Scoring Guidelines and Rubrics.

### Section 2

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>31.</td>
<td>B</td>
</tr>
<tr>
<td>32.</td>
<td>See Item-Specific Scoring Guidelines and Rubrics.</td>
</tr>
<tr>
<td>33.</td>
<td>C</td>
</tr>
<tr>
<td>34.</td>
<td>C</td>
</tr>
<tr>
<td>35.</td>
<td>C</td>
</tr>
<tr>
<td>36.</td>
<td>D</td>
</tr>
<tr>
<td>37.</td>
<td>C</td>
</tr>
<tr>
<td>38.</td>
<td>B</td>
</tr>
<tr>
<td>39.</td>
<td>D</td>
</tr>
<tr>
<td>40.</td>
<td>D</td>
</tr>
<tr>
<td>41.</td>
<td>B</td>
</tr>
<tr>
<td>42.</td>
<td>A</td>
</tr>
<tr>
<td>43.</td>
<td>C</td>
</tr>
<tr>
<td>44.</td>
<td>B</td>
</tr>
<tr>
<td>45.</td>
<td>A</td>
</tr>
<tr>
<td>46.</td>
<td>C</td>
</tr>
<tr>
<td>47.</td>
<td>A</td>
</tr>
<tr>
<td>48.</td>
<td>C</td>
</tr>
<tr>
<td>49.</td>
<td>D</td>
</tr>
<tr>
<td>50.</td>
<td>B</td>
</tr>
<tr>
<td>51.</td>
<td>B</td>
</tr>
<tr>
<td>52.</td>
<td>D</td>
</tr>
<tr>
<td>53.</td>
<td>A</td>
</tr>
<tr>
<td>54.</td>
<td>B</td>
</tr>
<tr>
<td>55.</td>
<td>D</td>
</tr>
<tr>
<td>56.</td>
<td>C</td>
</tr>
<tr>
<td>57.</td>
<td>D</td>
</tr>
<tr>
<td>58.</td>
<td>D</td>
</tr>
<tr>
<td>59.</td>
<td>C</td>
</tr>
<tr>
<td>60.</td>
<td>A</td>
</tr>
<tr>
<td>61.</td>
<td>A</td>
</tr>
<tr>
<td>62.</td>
<td>D</td>
</tr>
<tr>
<td>63.</td>
<td>A</td>
</tr>
</tbody>
</table>
### Item-Specific Scoring Guidelines and Rubrics

#### Item 28

**Scoring Rubric**

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2      | The response achieves the following:  
  - A score of 2 demonstrates a complete understanding of generating two numerical patterns using two given rules and identifying an apparent pattern between corresponding terms of the patterns.  
  - Student determines that the correct answers for Part A are choices A and C. AND  
  - Student determines that the correct answer for Part B is choice D. |
| 1      | The response achieves the following:  
  - A score of 1 demonstrates a partial understanding of generating two numerical patterns using two given rules and identifying an apparent pattern between corresponding terms of the patterns.  
  - Student determines that the correct answers for Part A are choices A and C. OR  
  - Student determines that the correct answer for Part B is choice D. |
| 0      | The response achieves the following:  
  - A score of 0 demonstrates limited to no understanding of generating two numerical patterns using two given rules and identifying an apparent pattern between corresponding terms of the patterns. |

#### Item 29

**Scoring Rubric**

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2      | The response achieves the following:  
  - A score of 2 demonstrates a complete understanding of drawing a diagram of a rectangle with fractional side lengths and finding the area of the rectangle by tiling and/or by multiplying side lengths. |
| 1      | The response achieves the following:  
  - A score of 1 demonstrates a partial understanding of drawing a diagram of a rectangle with fractional side lengths and finding the area of the rectangle by tiling and/or by multiplying side lengths.  
  - Give 1 point if the student's diagram is correct OR if the student's calculated area is correct. |
| 0      | A score of 0 achieves the following:  
  - The response demonstrates limited to no understanding of drawing a diagram of a rectangle with fractional side lengths and finding the area of the rectangle by tiling and/or by multiplying side lengths. |
Exemplar Response:

<table>
<thead>
<tr>
<th>Points Awarded</th>
<th>Response</th>
</tr>
</thead>
</table>
| 2              | Sample response shown.  

- \[ 5\frac{3}{4} \times 6\frac{1}{2} = \frac{23}{4} \times \frac{13}{2} = \frac{299}{8} = 37\frac{3}{8} \text{ sq ft} \]

AND

You can multiply the side lengths to find the area of the floor.

Since each tile is 1 square foot, she needs 37\(\frac{3}{8}\) tiles.

| 1              | \[ 6\frac{1}{2} \times \frac{3}{4} \text{ ft} \]

OR

You can multiply the side lengths to find the area of the floor.

Since each tile is 1 square foot, she needs 37\(\frac{3}{8}\) tiles.

| 0              | Response is irrelevant, inappropriate, or not provided. |
### Exemplar Response:

<table>
<thead>
<tr>
<th>Points Awarded</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Sample response shown.</td>
</tr>
</tbody>
</table>

![Diagram of a square with dimensions 6 1/2 ft by 5 3/4 ft.]

**AND**

You can multiply the side lengths to find the area of the floor.

\[
5\frac{3}{4} \times 6\frac{1}{2} = \frac{23}{4} \times \frac{13}{2} = \frac{299}{8} = 37\frac{3}{8} \text{ sq ft}
\]

Since each tile is 1 square foot, she needs 37\(\frac{3}{8}\) tiles.

<table>
<thead>
<tr>
<th>1</th>
<th>![Diagram of a square with dimensions 6 1/2 ft by 5 3/4 ft.].</th>
</tr>
</thead>
</table>

**OR**

You can multiply the side lengths to find the area of the floor.

\[
5\frac{3}{4} \times 6\frac{1}{2} = \frac{23}{4} \times \frac{13}{2} = \frac{299}{8} = 37\frac{3}{8} \text{ sq ft}
\]

Since each tile is 1 square foot, she needs 37\(\frac{3}{8}\) tiles.

| 0              | Response is irrelevant, inappropriate, or not provided. |
## Item 30
### Scoring Rubric

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
</table>
| 4      | The response achieves the following:  
  - A score of 4 demonstrates that the student completely understands making line plots to display fractional measurements and solving problems involving the measurements. |
| 3      | The response achieves the following:  
  - A score of 3 demonstrates that the student mostly understands making line plots to display fractional measurements and solving problems involving the measurements. |
| 2      | The response achieves the following:  
  - A score of 2 demonstrates that the student somewhat understands making line plots to display fractional measurements and solving problems involving the measurements. |
| 1      | The response achieves the following:  
  - A score of 1 demonstrates that the student has a limited understanding of making line plots to display fractional measurements and solving problems involving the measurements. |
| 0      | The response achieves the following:  
  - A score of 0 demonstrates that the student has no understanding of making line plots to display fractional measurements and solving problems involving the measurements. |
Exemplar Response:

<table>
<thead>
<tr>
<th>Points Awarded</th>
<th>Response</th>
</tr>
</thead>
</table>
| 4              | **Part A:** Manuel’s Practice Time  
|                | ![Diagram of practice time]  
|                | AND      |
|                | **Part B:** $\frac{1}{2}$ hr  
|                | AND      |
|                | **Part C:** 30 minutes  
|                | AND      |
|                | **Part D:** The longest practice time is $\frac{5}{6} \times 60 = 50$ minutes. The shortest practice time is $\frac{1}{3} \times 60 = 20$ minutes. The difference between the longest and shortest times is $50 - 20 = 30$ minutes.  
| 3              | Any combination of three correct parts  
| 2              | Any combination of two correct parts  
| 1              | Any one correct part  
| 0              | Response is irrelevant, inappropriate, or incomplete.  

## Item 32

### Scoring Rubric

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>The response achieves the following:</td>
</tr>
<tr>
<td></td>
<td>• A score of 2 demonstrates a complete understanding of why multiplying</td>
</tr>
<tr>
<td></td>
<td>a given number by a fraction less than 1 results in a product less than</td>
</tr>
<tr>
<td></td>
<td>the given number.</td>
</tr>
<tr>
<td>1</td>
<td>The response achieves the following:</td>
</tr>
<tr>
<td></td>
<td>• A score of 1 demonstrates a partial understanding of why multiplying a</td>
</tr>
<tr>
<td></td>
<td>given number by a fraction less than 1 results in a product less than the</td>
</tr>
<tr>
<td></td>
<td>given number.</td>
</tr>
<tr>
<td>0</td>
<td>The response achieves the following:</td>
</tr>
<tr>
<td></td>
<td>• A score of 0 demonstrates limited to no understanding of why multiplying</td>
</tr>
<tr>
<td></td>
<td>a given number by a fraction less than 1 results in a product less than the</td>
</tr>
<tr>
<td></td>
<td>given number.</td>
</tr>
</tbody>
</table>

### Exemplar Response:

<table>
<thead>
<tr>
<th>Points Awarded</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>The number must be less than 1.</td>
</tr>
<tr>
<td></td>
<td><em>AND</em></td>
</tr>
<tr>
<td></td>
<td>If you multiply $1 \times \frac{3}{5}$, the product is $\frac{3}{5}$.</td>
</tr>
<tr>
<td></td>
<td>Since the product is less than $\frac{3}{5}$, you know that the number</td>
</tr>
<tr>
<td></td>
<td>has to be less than 1.</td>
</tr>
<tr>
<td></td>
<td>By multiplying $\frac{3}{5}$ by a number less than 1, you resize $\frac{3}{5}$, making it less than $\frac{3}{5}$.</td>
</tr>
<tr>
<td></td>
<td>OR other valid explanation</td>
</tr>
<tr>
<td>1</td>
<td>The number must be less than 1.</td>
</tr>
<tr>
<td></td>
<td><em>OR</em></td>
</tr>
<tr>
<td></td>
<td>If you multiply $1 \times \frac{3}{5}$, the product is $\frac{3}{5}$.</td>
</tr>
<tr>
<td></td>
<td>Since the product is less than $\frac{3}{5}$, you know that the number</td>
</tr>
<tr>
<td></td>
<td>has to be less than 1.</td>
</tr>
<tr>
<td></td>
<td>By multiplying $\frac{3}{5}$ by a number less than 1, you resize $\frac{3}{5}$, making it less than $\frac{3}{5}$.</td>
</tr>
<tr>
<td></td>
<td>OR other valid explanation</td>
</tr>
<tr>
<td>0</td>
<td>Response is irrelevant, inappropriate, or not provided.</td>
</tr>
</tbody>
</table>
Answer Keys

Domain 1
Lesson 1
Coached Example
Write a numerical expression for "divide 30 by 5."

30 ÷ 5
Write a numerical expression for "then add 12."

+ 12
Combine the parts.
(30 ÷ 5) + 12
The expression is (30 ÷ 5) + 12.

Lesson Practice Part 1
1. D
2. A
3. C
4. B
5. D
6. C
7. D
8. A
9. A. 15 + (2 × 35)
   B. 15 + (2 × 35) ÷ 3

Lesson Practice Part 2
1. A
2. A
3. B
4. D
5. A
6. D
7. C
8. C
9. A. Possible work:
   11 + 7 + 2 ÷ 3 + 8 ÷ 2
   11 + 7 - 6 + 8 ÷ 2
   11 + 7 - 6 + 4
   18 - 6 - 4
   12 + 4
   16

   B. No. Possible explanation:
   John did not use the order of operations correctly.

Lesson Practice Part 2
1. C
2. A
3. C
4. B
5. C
6. D
7. C
8. A
9. A. Possible answer: (3 × 3) + (2 × 5) + (4 × 1)
   B. Possible answer: 4 × (3 + 5 + 4 + 1)

Lesson 2
Coached Example
100 - 60 ÷ 5 × 8 + 17
100 - 12 × 8 + 17
100 - 96 + 17
4 + 17
21
100 - 60 ÷ 5 × 8 + 17 = 21

Lesson Practice Part 1
1. B
2. D
3. C
4. B
5. A
6. D
7. A
8. B
9. A. Possible work:
   (11 + 7 - (2 × 3) + 8 ÷ 2
   (11 + 7 - 6 + 8 ÷ 2
   11 + 7 - 6 + 4
   18 - 6 + 4
   12 + 4
   16

   B. Yes. Possible explanation:
   Sean used the order of operations correctly.

11. A. 49; Step 1: Multiply
   4 × 12 = 48,
   Step 2: Divide 48 ÷ 3 = 16,
   Step 3: 48 + 16 = 64,
   Step 4: 64 - 15 = 49

   B. Possible explanation: If the order of operations is not followed, the evaluation will most likely be incorrect.
   If the order of operations is not followed for the expression, the evaluation would be 193.

Lesson 3
Coached Example
[7 × 2 - 8] ÷ 3
[14 - 8] ÷ 3
6 ÷ 3

Divide.

6 ÷ 3

2

[(4 + 3) × 2 - 8] ÷ 3 = 2

Lesson Practice Part 1
1. A
2. A
3. B
4. C
5. B
6. A
7. A
8. B
9. A. Possible work:
   ([11 + 7 - (2 × 3)] + 8 ÷ 2
   ([11 + 7 - 6] + 8) ÷ 2
   ([18 - 6] + 8) ÷ 2
   [12 + 8] ÷ 2
   20 ÷ 2
   10

   B. Yes. Possible explanation:
   Sean used the order of operations correctly.
Lesson Practice Part 2
1. C
2. D
3. B
4. A
5. A
6. B
7. D
8. C
9. C
10. A

11. A. 405; Step 1: 8 – 4 = 4,
Step 2: 64 + 4 = 68,
Step 3: 68 × 12 = 816,
Step 4: 816 – 6 = 810,
Step 5: 810 ÷ 2 = 405
B. 21; Step 1: 4 × 12 = 48,
Step 2: 6 ÷ 2 = 3,
Step 3: 64 + 8 = 72,
Step 4: 72 – 48 = 24,
Step 5: 24 – 3 = 21

Lesson 4
Coached Example
0, 4, 8, 12, 16
The first 5 terms of Pattern A are 0, 4, 8, 12, 16.
0, 12, 24, 36, 48
The first 5 terms of Pattern B are 0, 12, 24, 36, 48.

<table>
<thead>
<tr>
<th>Pattern A</th>
<th>0</th>
<th>4</th>
<th>8</th>
<th>12</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern B</td>
<td>0</td>
<td>12</td>
<td>24</td>
<td>36</td>
<td>48</td>
</tr>
</tbody>
</table>

12 ÷ 4 = 3
24 ÷ 8 = 3
36 ÷ 12 = 3
48 ÷ 16 = 3
The relationship is that each term in Pattern B is 3 times the value as each corresponding term in Pattern A.

Lesson Practice Part 1
1. B
2. C
3. B
4. C
5. D
6. A
7. B
8. D
9. A. 45, 40, 35, 30, 25, 20, 15, 10, 5
B. 45, 15, 5

Lesson Practice Part 2
1. B
2. C
3. D
4. A
5. C
6. C
7. A. 0, 12, 24, 36, 48, 60
B. 0, 6, 12, 18, 24, 30
C. Each term in Pattern J is twice as many as the corresponding term in Pattern K because
12 ÷ 6 = 2, 24 ÷ 12 = 2,
36 ÷ 18 = 2, 48 ÷ 24 = 2,
and 60 ÷ 30 = 2.

Lesson 5
Coached Example
0, 1, 2, 3, 4
0, 4, 8, 12, 16
(0, 0)
(1, 4)
(2, 8)
(3, 12)
(4, 16)

B. Possible answer: The y-coordinates are 4 times the corresponding x-coordinates.
Lesson Practice Part 2
1. D
2. B
3. C
4. A
5. D
6. A. (0, 10), (2, 9), (4, 8), (6, 7), (8, 6)
   B. 
   ![Graph]

Domain 1: Cumulative Assessment
1. A MGSE.5.OA.1
2. D MGSE.5.OA.1
3. B MGSE.5.OA.3
4. C MGSE.5.OA.2
5. B MGSE.5.OA.1
6. D MGSE.5.OA.2
7. A MGSE.5.OA.3
8. C MGSE.5.OA.3
9. 275 MGSE.5.OA.1
10. A. (0, 0), (1, 8), (2, 16), (3, 24), (4, 32)
   B. Possible answer: The y-coordinates are 8 times the corresponding x-coordinates. MGSE.5.OA.3

Domain 2
Lesson 6
Coached Example
$329 \times 526 = m$
\[
\begin{array}{c}
1 \\
15 \\
329 \\
\times 26 \\
1974 \\
+ 6580 \\
8554
\end{array}
\]
What is the partial product? 1974
Use a 0 as a placeholder in the ones place of the second partial product.
What is the partial product? 6580
Add the partial products to find the product.
What is the product? 8,554
The theater took in $8,554 for this performance.

Lesson Practice Part 1
1. D
2. B
3. A
4. B
5. B
6. C
7. C
8. C
9. A. $140 \times 12 = (140 \times 10) + (140 \times 2) = 1,400 + 280 = 1,680$
   B. $20,160; 1,680 \times 12 = 20,160$

Lesson Practice Part 2
1. D
2. B
3. C
4. C
5. A
6. D
7. B
8. C
9. A
10. D
11. A. $37,155; \text{Possible work: } (375 \times 65) + (284 \times 45) = 24,375 + 12,780 = 37,155$
   B. $2,377,920; \text{Possible work: } 37,155 \times 64 = 2,377,920$

Lesson 7
Coached Example
\[
\begin{array}{c}
47 \quad \text{R}4 \\
12568 \\
-48 \\
88 \\
-84 \\
4
\end{array}
\]
The quotient is 47.
The remainder is 4.
The quotient means that 47 bags can be filled with 12 oranges.
The remainder means that there will be 4 oranges left over.
The question asks how many bags Katie needs for all the oranges, so round the quotient up to the nearest whole number.
You can check your answer by multiplying 12 times 47 and adding 4.
Katie needs 48 bags for all the oranges.

Lesson Practice Part 1
1. B
2. D
3. C
4. A
5. B
6. C
7. A
8. B
9. C
10. D
11. A. $37,155; \text{Possible work: } (375 \times 65) + (284 \times 45) = 24,375 + 12,780 = 37,155$
   B. $2,377,920; \text{Possible work: } 37,155 \times 64 = 2,377,920$
9. A. 34; Possible work:

\[
\begin{array}{c}
34 \\
22)756 \\
-66 \\
96 \\
-88 \\
\hline
8
\end{array}
\]

B. 35; Possible explanation: \(756 \div 22 = 34 \text{ R8},\)
so Simone can fill 34 boxes and she will have
8 magnets left over. She needs another box for
the 8 magnets left over, so she needs 35 boxes
to hold all of her magnets.

Lesson Practice Part 2
1. D
2. A
3. B
4. A
5. C
6. D
7. B
8. C
9. A. 234; Possible work:

\[
9,840 \div 42 = 234 \text{ R12}
\]
B. The remainder represents the number of cards
that are not in one of the boxes.

Lesson 8

Coached Example

\[
\begin{array}{c}
28 \\
34)963 \\
-68 \\
283 \\
-272 \\
\hline
11
\end{array}
\]

What is the dividend? 963
What is the quotient? 28
What is the divisor? 34
What is the remainder? 11

\[
963 = 28 \times 34 + 11
\]

\[
28 + \frac{11}{34} = 28\frac{11}{34}
\]
The equation for 963 \(\div 34\) is 963 = 28 \(\times 34 + 11\) and
the mixed number is \(28\frac{11}{34}\).

Lesson Practice Part 1
1. A
2. B
3. C
4. B
5. D
6. C
7. B
8. A
9. A. 288 = 25 \times 11 + 13; Possible work:

\[
\begin{array}{c}
11 \\
25)288 \\
-25 \\
38 \\
-25 \\
\hline
13
\end{array}
\]
B. 11\frac{13}{25}; Possible explanation: Kaleigh will have
11 pieces that are 25 inches long and one piece
that is 13 inches long.

Lesson Practice Part 2
1. A
2. D
3. B
4. A
5. C
6. D
7. B
8. B
9. A. 842 = 35 \times 24 + 2
B. 24\frac{2}{35}; The 24 represents the number
of complete groups, the 2 represents the number
of extra pennies, and the 35 represents the
number of pennies in a complete group.

Lesson 9

Coached Example
To write the number name, first write the decimal in a
place-value chart.

<table>
<thead>
<tr>
<th>Ones</th>
<th>Tenths</th>
<th>Hundredths</th>
<th>Thousandths</th>
</tr>
</thead>
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<td>6</td>
<td>8</td>
<td>3</td>
<td>7</td>
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</table>

Write the number name for 6. six
Write the word that separates the whole-number part
from the decimal part. and
Write the decimal part as you would a whole number.
eight hundred thirty-seven
What is the least place value of the decimal part? **thousandths**
The number name for 6.837 is **six and eight hundred thirty-seven thousandths**.
Find the value of each digit.
6 ones = 6 × 1 = 6
8 tenths = 8 × 0.1 = 0.8
3 hundredths = 3 × 0.01 = 0.03
7 thousandths = 7 × 0.001 = 0.007
Write the expanded form.
6.837 = 6 + 0.8 + 0.03 + 0.007
Write the expanded form with multiplication.
6.837 = 6 × 1 + 8 × 0.1 + 3 × 0.01 + 7 × 0.001

**Lesson 10**
Coached Example
Compare the **whole-number parts** first.
The whole-number parts are **the same**.
Next compare the digits in the **tenths place**.
Use >, <, or = to compare.

2 < 3, so 4.295 < 4.3
The lesser distance is 4.295 kilometers.

**Lesson Practice Part 1**
1. A
2. D
3. C
4. A
5. B
6. D
7. D
8. B
9. A, C, A, B, D
   B. Possible answer: The decimals in order from least to greatest are 1.59, 1.73, 2.061, 2.1.

**Lesson Practice Part 2**
1. C
2. A
3. B
4. B
5. D
6. D
7. C
8. D
9. A. 1.023
   B. 320.1

**Lesson 11**
Coached Example
Round 18.27 to the nearest **whole second**.
Look at the digit to the right of the place you are rounding to.
The digit in that place is 2, which means you round **down**.
Rounded to the nearest whole second, 18.27 is **18**.

**Lesson Practice Part 1**
1. C
2. B
3. C
4. B
5. B
6. C
7. D
8. A
9. A. dog: 9 pounds; cat: 9 pounds
   B. Possible answer: They are both the same number.
   9.25 is rounded down and 8.75 is rounded up.

**Lesson Practice Part 2**
1. A
2. C
3. B
4. D
5. D
6. B
7. A
8. C
9. A. 0.394
B. 0.39
C. It is better to round to the nearest tenth of an inch. Possible explanation: Rounding to the nearest tenth of inch results in 0.4, which is 0.0063 inch more than the actual length. Rounding to the nearest inch results in 0, which is 0.3937 inch less than the actual length. Because 0.0063 is less of a difference than 0.3937, it is the better estimate.

Lesson 12
Coached Example
Will you multiply or divide 0.9 by a power of 10? divide
When you divide by a power of 10, do you move the decimal point to the right or to the left? left
The exponent tells how many places to move the decimal point.
What is the exponent, or the power of 10? 3
Move the decimal point in 0.9 three places to the left to find the quotient.
Fill the empty places with zeros.
0.9 ÷ 10^3 = 0.0009
0.9 ÷ 10^3 = 0.0009

Lesson Practice Part 1
1. C
2. C
3. B
4. B
5. A
6. D
7. C
8. B

9. A. 4,325; Possible explanation: Because a factor is multiplied by a power of 10 with an exponent of 3, I moved the decimal point to the right 3 times.
B. 0.04325; Possible explanation: Because a dividend is divided by a power of 10 with an exponent of 2, I moved the decimal point to the left 2 times.

Lesson Practice Part 2
1. C
2. C
3. B
4. B
5. A
6. D
7. C
8. B

9. A. 8,500; Possible explanation: I multiplied 0.85 × 10 = 8.5 and then multiplied 8.5 × 10^3 = 8.5 × 1,000 = 8,500.
B. It increases by 10 times.
C. It decreases by 10 times.

Lesson 13
Coached Example
5.64 rounds up to 6.
9.5 rounds up to 10.
2.07 rounds down to 2.
Add the rounded numbers: 6 + 10 + 2 = 18
The estimated mass of the three samples is 18 grams.
Do all the digits have the same number of places to the right of the decimal point? no
To write the problem, you need to insert a 0 to the right of 9.5.
Make sure the decimal points are lined up.

Find the actual mass.

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<td>6</td>
<td>5</td>
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<td>9</td>
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<td>0</td>
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<td>+</td>
<td>2</td>
<td>07</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17.21</td>
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</tbody>
</table>

The actual mass of the 3 samples is 17.21 grams.
Is the actual answer close to the estimate? yes
The total mass of the samples is 17.21 grams.

Lesson Practice Part 1
1. C
2. B
3. B
4. D
5. D
6. C
7. A
8. C

9. A. 10.66 pounds
B. Possible explanation: I aligned the numbers on the decimal point. Then I inserted a 0 to the right of 4.5 and 3.4 so all the addends would have the same number of places. I placed the decimal point in the sum and added the numbers.

Lesson Practice Part 2
1. A
2. D
3. D
4. B
5. C
6. A
7. D
8. C
9. A. $25.37; Possible work:
$12.59 + $3.79 + $8.99 = $26.37
B. $43.23; Possible work:
$25.37 + $17.86 = $43.23

25
Lesson 14
Coached Example
Do all the digits have the same number of places to the right of the decimal point? no
To write the problem, you need to insert a 0 to the right of 5.6 and 15.5.
First, add to find the total number of miles Kobe ran on Friday and Saturday.

1
3.75
+ 5.60
---
9.35
Kobe ran 9.35 miles on Friday and Saturday.
Next, subtract the sum of those two days from the number of miles that Kobe ran in all.

0 15 4 1 0
1 8 5 0 0
---
6 1 5
What is the result? 6.15
Kobe ran 6.15 miles on Sunday.

Lesson Practice Part 1
1. D
2. C
3. D
4. B
5. A
6. A
7. C
8. D
9. A. $46; Possible work: $16.75 rounds to $17 and $28.92 rounds to $29,
$17 + $29 = $46
B. $4; Possible work: $50 - $46 = $4
C. $4.33; Possible work: $16.75 + $28.92 = $45.67;
$50 - $45.67 = $4.33

9. A. $36.13; Possible work:
$2.89
× 12.5
1445
5780
+ 28600
$36.125
B. Yes; Possible explanation:
12.5 × $2.89 = $36.125,
which rounds up to $36.13.

Lesson Practice Part 2
1. C
2. A
3. B
4. C
5. D
6. B
7. D
8. A
9. B
10. C

11. A. $1.73; Possible work:
$5.62 - $3.89 = $1.73
B. $3.32; Possible work:
$3.89 + $2.79 = $6.68,
$10.00 - $6.68 = $3.32
C. $3.45; Possible work:
$5.62 + $4.25 +
$6.68 = $16.55,
$20.00 - $16.55 = $3.45

Lesson 15
Coached Example
13.95
× 27
---
9765
27900
---
376.65
Multiply by the ones: 9765
Multiply by the tens: 27900
Add the partial products: 9765 + 27900 = 37685
There are 2 decimal places in the factors, so the product will have 2 decimal places.
Write the decimal point and the $ in the product: $376.65
The total cost of the tickets is $376.65.

Lesson Practice Part 1
1. C
2. D
3. A
4. C
5. B
6. B
7. A
8. D
9. B
10. A

11. A. 0.87; Possible work:
(0.75 × 3.8) - (0.55 × 3.6) = 2.85 - 1.98 = 0.87
B. 7.35; Possible work: 2.85
+ 1.98 + (0.6 × 4.2) = 4.83 + 2.52 = 7.35

Lesson 16
Coached Example
Write an equation for the problem.
28.12 ÷ 9.5 = g
What is the dividend? 28.12
What is the divisor? 9.5
How many decimal places are after the decimal point in the divisor? 1
By what number should you multiply both the divisor and dividend? 10
10 × 28.12 = 281.2
10 × 9.5 = 95

2.06
95/281.20
- 190
912
- 85.5
570
- 570
0
Madison paid $2.96 for each gallon of gas.

Lesson Practice Part 1
1. C
2. B
3. C
4. B
5. A
6. C
7. D
8. D
9. A. 28.2 miles
   B. Possible explanation:
   I multiplied both the dividend and divisor by 10, so the problem became 2,679 ÷ 95.

Lesson Practice Part 2
1. D
2. B
3. A
4. B
5. A
6. C
7. C
8. A
9. B
10. A

11. A. 3; $10.50; Possible explanation: I divided $12 ÷ 3.5 = $120 ÷ 35 = 3 R15. Because she cannot buy part of a notebook, I ignored the remainder. So, Lydia spent 3 × $3.50 = $10.50 for the notebooks.
   B. 16; Possible explanation:
   I subtracted the cost of the notebooks from $20 to get $9.50. I divided $9.50 ÷ $0.50 = $950 ÷ 59 = 16 R6. Because she cannot buy part of a pencil, I ignored the remainder.

Domain 2: Cumulative Assessment
1. D MGSE5.NBT.5
2. C MGSE5.NBT.6
3. B MGSE5.NBT.7
4. A MGSE5.NBT.4
5. B MGSE5.NBT.3b
6. C MGSE5.NBT.7
7. B MGSE5.NBT.2
8. B MGSE5.NBT.1
9. 95.417 = 9 × 10 + 5 × 1
   + 4 × \(\frac{1}{10}\) + 1 × \(\frac{1}{100}\) + 7
   \(\times\) \(\frac{1}{1000}\)
   MGSE5.NBT.3a
10. A. $12.18; Possible work:
   \(\frac{3.48}{3.5}\)
   \times 3.5
   \[1740\]
   \[+ 10440\]
   \[\$12.180\]
   B. Possible explanation:
   I multiplied 3.46 × 3.5.
   There were 3 decimal places in the factors, so there are 3 decimal places in the product. I dropped the last zero in the product since the answer is a money amount. MGSE5.NBT.7

Domain 3
Lesson 17
Coached Example
The factors of 8 are 1, 2, 4, 8.
The factors of 10 are 1, 2, 5, 10.
The greatest common factor of 8 and 10 is 2.
Divide the numerator and denominator by 2.
\[\frac{8}{10} = \frac{8 ÷ 2}{10 ÷ 2} = \frac{4}{5}\]
Multiply the numerator and denominator of \(\frac{8}{10}\) by Possible answer: 2.
Possible work:
\[\frac{8}{10} = \frac{8 \times 2}{10 \times 2} = \frac{16}{20}\]
In simplest form, \(\frac{8}{10}\) is \(\frac{4}{5}\).

Lesson 18
Coached Example
How many pizzas are completely shaded? 3
Each pizza is divided into 8 equal parts.
How many parts are shaded in the partially shaded circle? 6
What fraction of the last circle is shaded? \(\frac{6}{8}\)
Write the fraction in simplest form: \(\frac{3}{4}\)

Another fraction equivalent to \(\frac{8}{10}\) is Possible answer: \(\frac{16}{20}\)

Lesson Practice Part 1
1. C
2. B
3. D
4. D
5. A
6. D
7. C
8. B
9. A. 4 ÷ 16 = 16 ÷ 4 = \(\frac{4}{4}\)
   B. Possible answer:
   \[\frac{1}{4} ÷ 2 = \frac{2}{4}\]
   \[\frac{1}{4} ÷ 3 = \frac{3}{12}\]

Lesson Practice Part 2
1. B
2. A
3. D
4. A
5. B
6. C
7. D
8. C
9. C
10. A

11. A. 27; Possible work: \(\frac{18}{24} ÷ \frac{2}{2}\)
   \[= \frac{9}{12} \times \frac{3}{3} = \frac{27}{36}\]
   B. 3; Possible work:
   \[\frac{18}{24} ÷ \frac{6}{6} = \frac{3}{4}\]

Lesson (continued)
Add the whole-number part and
  the fraction part. \(3 + \frac{3}{4} = 3\frac{3}{4}\)
A total of \(3\frac{3}{4}\) pizzas were eaten.

Lesson Practice Part 1
1. C
2. A
3. C
4. B
5. D
6. B
7. D
8. B
9. A, 2\(\frac{1}{2}\)
   B. \(\frac{5}{2}\); Possible explanation:
   Each rectangle is divided
   into 10 equal parts. So \(\frac{25}{10}\)
   parts are shaded, \(\frac{25}{10}\)
   can be simplified to \(\frac{5}{2}\)
   by dividing both the numerator
   and denominator by 5.

Lesson Practice Part 2
1. C
2. D
3. B
4. A
5. C
6. B
7. A
8. D
9. A, 1\(\frac{1}{2}\) pounds
   B. Possible explanation:
   I found a common
   denominator of 24 for
   the fractions. \(\frac{3}{8} = \frac{9}{24}\).
   Then I added the fractions:
   \(\frac{9}{24} + \frac{3}{24} + \frac{20}{24} = \frac{32}{24}\).
   Then I wrote the answer
   in simplest form:
   \(\frac{32}{24} = \frac{1}{2} + \frac{1}{2} = 1\frac{1}{2}\).

Lesson 19
Coached Example
The denominators of the fractions
are 6 and 4.
Multiples of 6: 6, 12, 18, 24, 30, 36
Multiples of 4: 4, 8, 12, 16, 20, 24

The least number that is a
common multiple of 6 and 4 is 12.
Find equivalent fractions with 12 as
the common denominator.
\[
\begin{align*}
5 &= \frac{5\times2}{6\times2} = \frac{10}{12} \\
3 &= \frac{3\times3}{4\times3} = \frac{9}{12} \\
10 &= \frac{10\times9}{12\times9} = \frac{90}{108} \\
12 &= \frac{12\times19}{12\times19} = \frac{198}{228}
\end{align*}
\]
Write your answer in simplest form:
1\(\frac{7}{12}\)
Suki will ride 1\(\frac{7}{12}\) miles in all to
reach Tybee Island.

Lesson Practice Part 1
1. C
2. C
3. D
4. D
5. B
6. D
7. A
8. B
9. A, 1\(\frac{1}{2}\) bounds
   B. Possible explanation:
   I added \(\frac{3}{4} + \frac{1}{6} = \frac{4}{12} + \frac{2}{12} = \frac{6}{12}\).
   Because \(\frac{9}{12} < 1\), other types of DVDs
   had to have been sold.

Lesson 20
Coached Example
Multiples of 10: 10, 20, 30, 40,
50, 60
Multiples of 4: 4, 8, 12, 16, 20, 24
The least number that is a
common multiple of 10 and
4 is 20.
Find equivalent fractions with 20 as
the denominator.
\[
\begin{align*}
\frac{9}{10} &= \frac{9\times2}{10\times2} = \frac{18}{20} \\
\frac{1}{4} &= \frac{1\times5}{4\times5} = \frac{5}{20} \\
\frac{18}{20} - \frac{5}{20} &= \frac{13}{20}
\end{align*}
\]
Jillian drank \(\frac{13}{20}\) of the milk in the
glass.

Lesson Practice Part 1
1. A
2. C
3. B
4. A
5. C
6. B
7. B
8. D
9. A. \( \frac{1}{12} \)

B. Possible explanation: I found the fraction of the pizzas that were sausage and pepperoni combined.
\[ \frac{1}{4} + \frac{1}{6} = \frac{3}{12} + \frac{2}{12} = \frac{5}{12}. \]
Then I subtracted that sum from the fraction of pizzas that were cheese.
\[ \frac{1}{2} - \frac{5}{12} = \frac{6}{12} - \frac{5}{12} = \frac{1}{12}. \]

Lesson Practice Part 2
1. B
2. C
3. A
4. C
5. B
6. A
7. D
8. C

9. A. \( \frac{11}{20} \); Possible work:
\[ \frac{21}{4} - \frac{5}{20} = \frac{25}{20} - \frac{114}{20} = \frac{14}{20} = \frac{7}{10}. \]

B. \( \frac{311}{20} \); Possible work:
\[ \frac{71}{2} - \left( \frac{25}{20} + \frac{14}{20} \right) = \frac{71}{2} - \frac{39}{20} = \frac{70}{20} - \frac{39}{20} = \frac{31}{20} = \frac{5}{30}. \]

Lesson 21
Coached Example
To decide if the product is greater or less than \( \frac{3}{4} \) feet, compare the factors \( \frac{3}{4} \) and \( \frac{1}{3} \) to 1.
Compare: \( \frac{3}{4} > 1 \) and \( \frac{1}{3} > 1 \).
The product of \( \frac{3}{4} \times \frac{1}{3} \) is greater than \( \frac{3}{4} \).
Convert \( \frac{3}{4} \) to an improper fraction. \( 3 \)
Convert \( \frac{1}{3} \) to an improper fraction. \( \frac{4}{3} \)

Lesson 22
Coached Example
Substitute \( \frac{5}{6} \) for the length and \( \frac{1}{4} \) for the width.
\[ A = \frac{5}{6} \times \frac{1}{4} \]
Multiply the numerators. \( 5 \times 1 = 5 \)

Multiply the denominators.
\[ 6 \times 4 = 24 \]
The product is \( \frac{5}{24} \).
The area of the rectangle is \( \frac{5}{24} \) square foot.

Lesson Practice Part 2
1. B
2. A
3. D
4. A
5. B
6. C
7. B
8. C
9. C
10. A

11. A. \( 1\frac{9}{20} \) miles; Possible work:
\[ 3\frac{3}{4} \times \frac{5}{2} = \frac{13}{4} \times \frac{5}{2} = \frac{65}{8} = \frac{49}{20}. \]

B. \( 6\frac{3}{32} \) miles; Possible work:
\[ 3\frac{1}{8} \times \frac{7}{4} = 8 \times \frac{7}{4} = \frac{91}{32} = \frac{27}{32} + \frac{27}{32} + \frac{3}{4} = \frac{63}{32} = \frac{6}{8}. \]

Lesson 23
Coached Example
Write a division sentence for the problem.
Let \( a \) represent the number of ounces of jellybeans each friend will get.
45 ÷ 4 = 0


11 R1
45
- 4
05
- 4
1

Write the quotient as a mixed number, 11 1/4.
Is the mixed number in simplest form? Yes

Each friend should get 11 1/4 ounces of jelly beans. The answer lies between the whole numbers 11 and 12.

Lesson Practice Part 1
1. A
2. B
3. B
4. D
5. D
6. B
7. B
8. A

9. A. 1/2 of a cake
   B. Answer may vary. Check students' models. Students should show 4 wholes divided into 2 equal parts.
   Each part is 1/2.

Lesson Practice Part 2
1. C
2. B
3. A
4. A
5. C
6. D
7. C
8. A
9. B
10. B

11. A. 5/8 foot; 5 ÷ 8 = 5/8
    B. 7 1/2 inches; Possible work:
    60 ÷ 8 = 7 4/8 = 7 1/2

Lesson 24
Coached Example
Write an equation for the problem.
1/2 ÷ 6 = s
When dividing a unit fraction by a whole number, the quotient is always a unit fraction less than the dividend.
To divide fractions, multiply the dividend by the reciprocal of the divisor.
The reciprocal of 6 is 1/6.
1/2 × 1/6 = 1/12
Each friend will get 1/12 of the banana bread.

Lesson Practice Part 1
1. B
2. C
3. A
4. D
5. C
6. D
7. D
8. A
9. A. 24
   B. Possible explanation:
   I divided 6 cups into 1 1/4 cup scoops: 6 ÷ 1/4 = 6 × 4 = 24 1/4, so Anna needs
   24 1/4 cup scoops of iced tea mix.

Lesson Practice Part 2
1. A
2. C
3. A
4. D
5. D
6. A
7. B
8. D
9. D
10. B
11. A. 40; 2 ÷ 1/20 = 40
    B. 30; 3 ÷ 1/10 = 30

Domain 3: Cumulative Assessment
1. A. MGSE5.NF.1
2. D. MGSE5.NF.1
3. B. MGSE5.NF.2
4. A. MGSE5.NF.4b
5. D. MGSE5.NF.5a
6. A. MGSE5.NF.6
7. D. MGSE5.NF.7a
8. A. MGSE5.NF.7c
9. 3 5/10 or 3 1/2. MGSE5.NF.1
10. A. 32 ÷ 3 = f; Let f represent the amount of dog food each dog will get.
B. 10 2/3 ounces; 02 MGSE5.NF.3

Domain 4
Lesson 25
Coached Example
How many pints are in 1 quart? 2
How many quarts are in 1 gallon? 4
2 × 4 = 8
Luanne must fill the 1-pint measuring cup 8 times to have 1 gallon of water.

Lesson Practice Part 1
1. D
2. B
3. C
4. D
5. A
6. C
7. B
8. A
9. A. 2 quarts (grape), 5 pints (pineapple), 12 cups (cranberry), 1 gallon (orange)
B. $11 \frac{1}{2}$ quarts; Possible work:
   1 gallon = 4 quarts,
   5 pints = 2 $\frac{1}{2}$ quarts,
   12 cups = 3 quarts;
   $2 + 4 + 2 \frac{1}{2} + 3 = 11 \frac{1}{2}$
Lesson Practice Part 2
1. B
2. B
3. C
4. B
5. C
6. C
7. A
8. D
9. A
10. D

11. A. 891; Possible work:
   $74 \times 12 + 3 = 891$
B. $243 \frac{3}{4}$; Possible work:
   $891 \div 36 = 24 R27 = 24 \frac{27}{36} = 24 \frac{3}{4}$

Lesson 26
Coached Example
1 liter = 1,000 milliliters,
so 2 liters = 2,000 milliliters
Alex wants to drink 2,000 milliliters of water today.
The amount of water Alex drank so far can be found by multiplying $5 \times 250$.
How many milliliters of water did Alex drink so far? 1,250
Subtract: $2,000 \text{ mL} - 1,250 \text{ mL} = 750 \text{ mL}$
Alex needs to drink 750 milliliters more of water today to reach his goal.
Lesson Practice Part 1
1. C
2. B
3. D
4. C

5. D
6. B
7. A
8. C
9. A
B. Possible explanation: I changed 475 meters to $0.475$ kilometer and then added: $1.5 + 0.475 + 2.3 = 4.275$.
Lesson Practice Part 2
1. B
2. D
3. C
4. C
5. B
6. C
7. A
8. B
9. D
10. C

11. A. 3.375; Possible work:
   $135 \div 100 = 0.135,$
   $0.135 \times 25 = 3.375$
B. 225; Possible work:
   $135 \times 100 = 13,500,$
   $13,500 \div 60 = 225$

Lesson 27
Coached Example
There are 9 rows and 7 columns of cubes in the bottom layer.
$9 \times 7 = 63$
The area of the base of the prism is 63 square centimeters.
The height of the prism is 6 centimeters.
$63 \times 6 = 378$
The volume of the cube is 378 cubic centimeters.
Lesson Practice Part 1
1. D
2. A
3. A
4. B
5. D
6. C
7. B

Lesson 28
Coached Example\[ V = l \times w \times h \]
The length is 2 feet.
The width is 2 feet.
The height is 2 feet.
$V = 2 \times 2 \times 2 = 8$ cubic feet
The volume of the prism on the left is 8 cubic feet.
The length is 2 feet.
The width is 4 feet.
The height is 2 feet.
Substitute the values into the formula.

\[ V = 2 \times 4 \times 2 = 16 \text{ cubic feet} \]
The volume of the prism on the right is 16 cubic feet.

8 cubic feet + 16 cubic feet = 24 cubic feet
The volume of the figure is 24 cubic feet.

Lesson Practice Part 1
1. D
2. A
3. B
4. A
5. C
6. C

7. A. 336 cubic centimeters;
   Possible work:
   \[ 8 \text{ cm} \times 6 \text{ cm} \times 7 \text{ cm} = 48 \text{ cm}^2 \times 7 \text{ cm} = 336 \text{ cm}^3 \]
B. 343 cubic centimeters;
   Possible work:
   \[ 7 \text{ cm} \times 7 \text{ cm} \times 7 \text{ cm} = 49 \text{ cm}^2 \times 7 \text{ cm} = 343 \text{ cm}^3 \]

Lesson Practice Part 2
1. A
2. D
3. C
4. B
5. A
6. D

7. A. Possible explanation: I can separate the figure into two rectangular prisms. One is
   10 feet by 5 feet by 5 feet and the other is 8 feet by 5 feet by 4 feet. I can find the
   volume of each rectangular prism and then add the volumes.

B. 410 ft\(^3\); Possible work: 
   \[ 10 \times 5 \times 5 + 8 \times 5 \times 4 = 10 \times 25 + 40 \times 4 = 250 + 160 = 410 \]

Lesson 29
Coached Example
3. \( \frac{1}{4} = \frac{3}{4} \)
4. \( \frac{3}{8} = \frac{5}{8} \)
5. \( \frac{1}{2} = \frac{5}{8} \)
6. \( \frac{5}{8} = \frac{5}{8} \)

Rename the products, so they all have a denominator of 8.

\[ \frac{6}{8} + \frac{6}{8} + \frac{20}{8} + \frac{5}{8} = \frac{37}{8} \]

\[ \frac{37}{8} = \frac{45}{8} \]
The total weight of the fruit that Logan bought is \( \frac{45}{8} \) pounds.

Lesson Practice Part 1
1. D
2. A
3. D
4. C
5. C
6. B
7. A.

Heights of Seedlings (in inches)

\[ \times \]
\[ \times \times \]
\[ \times \times \times \times \]

\[ \frac{7}{8} - \frac{1}{4} = \frac{7}{8} - \frac{2}{8} = \frac{5}{8} \]

Lesson Practice Part 2
1. C
2. C
3. A
4. B
5. B

6. A. Possible line plot:

Miles Jogged

\[ \times \times \times \times \times \times \times \times \times \]

\[ \frac{1}{4} \frac{1}{2} \frac{1}{4} \frac{1}{4} \frac{1}{2} \]

B. \( \frac{283}{4} \); Possible work: 
   \[ \frac{1}{2} + \left( \frac{3 \times 1\frac{1}{2}}{2} + \left( \frac{2 + \frac{1}{4}}{2} \right) \right) + \\
   \left( \frac{2 \times 2\frac{1}{2}}{2} + \left( \frac{4 \times 2\frac{1}{2}}{2} \right) \right) + \\
   \frac{3}{2} = \frac{3}{2} + \frac{15}{4} + 2 + \\
   \frac{18}{4} + \frac{20}{2} + 3 = \frac{5}{4} + \frac{18}{4} + \\
   \frac{14}{4} + \frac{8}{4} + \frac{40}{4} + \\
   \frac{12}{4} = \frac{115}{4} = \frac{283}{4} \]

Domain 4: Cumulative Assessment
1. D MGSE5.MD.1b
2. C MGSE5.MD.1
3. A MGSE5.MD.1
4. C MGSE5.MD.3a, MGSE5.MD.3b, MGSE5.MD.4
5. D MGSE5.MD.5c
6. A MGSE5.MD.5a
7. B MGSE5.MD.2
8. C MGSE5.MD.5b
9. 1.83 meters MGSE5.MD.1
10. A. 3 pints

B. Possible explanation: Mario
did not use enough tomato
sauce. 3 pints = 6 cups,
and he needed 8 cups.
That is 2 cups too little.
MGSE5.MD.1

Domain 5
Lesson 30
Coached Example
The number directly below point A is 4.
This is the number of units to the right of the origin.
The number directly to the left of point A is 6.
This is the number of units above the origin.
The ordered pair (4, 6) gives the location of point A.

Lesson Practice Part 1
1. B
2. C
3. A
4. D
5. B
6. B
7. D
8. C
9. A. (7, 2); Possible explanation: Point C is 7 units to the right and 2 units above the origin.
B. (4, 1); Possible explanation: Point D is 4 units to the right and 1 unit above the origin.

Lesson Practice Part 2
1. D
2. A
3. C
4. D
5. B
6. D
7. C
8. A
9. 

Lesson 31
Coached Example
Points J and K have the same y-coordinate.
To find the length of line segment JK, subtract the x-coordinates.
8 - 2 = 6
Points K and L have the same x-coordinate.
To find the length of line segment KL, subtract the y-coordinates.
8 - 4 = 4
P = 2 x 6 + 2 x 4
P = 12 + 8
P = 20 units

The perimeter of rectangle JKLM is 20 units.

Lesson Practice Part 1
1. B
2. A
3. C
4. D
5. B
6. C
7. A. Fountain; possible explanation: The fountain is 2 units to the right of 0 and 7 units above 0.
B. 4 city blocks; Possible explanation: The baseball field is located at (7, 2), and the school is located at (7, 6). The distance between those two points is 4 units.

Lesson Practice Part 2
1. B
2. A
3. C
4. B
5. D
6. C

Lesson 32
Coached Example
Figure A is a square.
Do all of its sides appear equal? Yes
Do all of its angles appear equal? Yes
Figure A is a(n) regular polygon.
Figure B is a triangle.
Do all of its sides appear equal? No
Do all of its angles appear equal? No
Figure B is a(n) irregular polygon.
Figure C is a pentagon.
Do all of its sides appear equal? Yes
Do all of its angles appear equal? Yes
Figure C is a(n) regular polygon.
Figure D is a hexagon.
Do all of its sides appear equal? No
Do all of its angles appear equal? No
Figure D is a(n) irregular polygon.
Figure B and Figure D are irregular polygons.

Lesson Practice Part 1
1. A
2. C
3. A
4. C
5. D
6. B
Lesson Practice Part 2
1. B
2. B
3. A
4. D
5. A
6. A
7. D
8. C
9. A. acute
   B. Yes; an equilateral triangle has all sides and angles equal.
   C. Yes; an isosceles triangle has at least two sides and two angles equal.

Lesson 34
Coached Example
A trapezoid has exactly one pair of parallel sides.
A parallelogram has both pairs of opposite sides parallel.
JK is parallel to ML.
JM is parallel to KL.
Is quadrilateral JKLM a trapezoid or a parallelogram? parallelogram
Which quadrilaterals have 4 right angles? rectangle and square
Does quadrilateral JKLM have 4 right angles? yes
Which quadrilaterals have 4 equal sides? rhombus and square
Does quadrilateral JKLM have 4 equal sides? no
The quadrilateral that has 4 right angles, but does not have 4 equal sides, is a rectangle.
Quadrilateral JKLM can be classified as a parallelogram and as a rectangle.

Lesson Practice Part 1
1. B
2. D
3. C
4. A
5. D
6. C
7. C
8. B
9. A. Scalene; possible explanation: The sides are all different lengths.
   B. Acute; possible explanation: The greatest angle is an acute angle, so it is an acute triangle.

Domain 5: Cumulative Assessment
1. A MGSE5.G.1
2. D MGSE5.G.1
3. B MGSE5.G.1
4. D MGSE5.G.2
5. C MGSE5.G.2
6. D MGSE5.G.3
7. B MGSE5.G.4
8. D MGSE5.G.3
9. Check students’ graphs for point B at (6, 3). MGSE5.G.2
10. A. plane figure, polygon, quadrilateral, parallelogram, rectangle, rhombus, square
    B. Possible explanation: A square can be classified as a rectangle because a square is a parallelogram with four right angles.
    MGSE5.G.3, MGSE5.G.4
### Answer Key

**Section 1**

1. C  
2. B  
3. B  
4. C  
5. B  
6. B  
7. D  
8. A  
9. C  
10. C  
11. C  
12. C  
13. C  
14. D  
15. C  
16. A  
17. B  
18. D  
19. C  
20. A  
21. A  
22. C  
23. C  
24. A  
25. C  
26. C  
27. C  
28. C, E, F  
   See Item-Specific Scoring Guidelines and Rubrics.
29. See Item-Specific Scoring Guidelines and Rubrics.
30. See Item-Specific Scoring Guidelines and Rubrics.

**Section 2**

31. B  
32. B  
33. A  
34. B  
35. A  
36. D  
37. C  
38. A  
39. D  
40. B  
41. D  
42. C  
43. A  
44. D  
45. D  
46. B  
47. B  
48. D  
49. C  
50. C  
51. See Item-Specific Scoring Guidelines and Rubrics.
52. C  
53. A  
54. A  
55. C  
56. C  
57. A  
58. A  
59. B  
60. C  
61. B  
62. C  
63. B
# Item-Specific Scoring Guidelines and Rubrics

## Item 28

### Scoring Rubric

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2      | The response achieves the following:  
|        | • A score of 2 demonstrates a complete understanding of generating two numerical patterns using two given rules.  
|        | • Student selects choices C, E, and F. |
| 1      | The response achieves the following:  
|        | • A score of 1 demonstrates a partial understanding of generating two numerical patterns using two given rules.  
|        | • Student selects two correct answer choices. |
| 0      | The response achieves the following:  
|        | • A score of 0 demonstrates limited to no understanding of generating two numerical patterns using two given rules.  
|        | • Student selects one or no correct answer choices. |

## Item 29

### Scoring Rubric

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2      | The response achieves the following:  
|        | • A score of 2 demonstrates a complete understanding of drawing a diagram of a rectangle with fractional side lengths and finding the area of the rectangle by tiling and/or by multiplying side lengths. |
| 1      | The response achieves the following:  
|        | • A score of 1 demonstrates a partial understanding of drawing a diagram of a rectangle with fractional side lengths and finding the area of the rectangle by tiling and/or by multiplying side lengths.  
|        | • Give 1 point if the student’s diagram is correct OR if the student’s calculated area is correct. |
| 0      | The response achieves the following:  
|        | • A score of 0 demonstrates limited to no understanding of drawing a diagram of a rectangle with fractional side lengths and finding the area of the rectangle by tiling and/or by multiplying side lengths. |
### Exemplar Response:

<table>
<thead>
<tr>
<th>Points Awarded</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Sample response shown.</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td>$4\frac{1}{2} \text{ m}$</td>
</tr>
<tr>
<td></td>
<td>$5\frac{3}{4} \text{ m}$</td>
</tr>
<tr>
<td></td>
<td>AND</td>
</tr>
<tr>
<td></td>
<td>You can multiply the side lengths to find the area of the patio.</td>
</tr>
<tr>
<td></td>
<td>$4\frac{1}{2} \times 5\frac{3}{4} = \frac{9}{2} \times \frac{23}{5} = \frac{207}{8} = 25\frac{7}{8} \text{ sq m}$</td>
</tr>
<tr>
<td></td>
<td>Since each tile is 1 square meter, she needs $25\frac{7}{8}$ tiles.</td>
</tr>
<tr>
<td>1</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td></td>
<td>$4\frac{1}{2} \text{ m}$</td>
</tr>
<tr>
<td></td>
<td>$5\frac{3}{4} \text{ m}$</td>
</tr>
<tr>
<td></td>
<td>OR</td>
</tr>
<tr>
<td></td>
<td>You can multiply the side lengths to find the area of the patio.</td>
</tr>
<tr>
<td></td>
<td>$4\frac{1}{2} \times 5\frac{3}{4} = \frac{9}{2} \times \frac{23}{5} = \frac{207}{8} = 25\frac{7}{8} \text{ sq m}$</td>
</tr>
<tr>
<td></td>
<td>Since each tile is 1 square meter, she needs $25\frac{7}{8}$ tiles.</td>
</tr>
<tr>
<td>0</td>
<td>Response is irrelevant, inappropriate, or not provided.</td>
</tr>
</tbody>
</table>
**Exemplar Response:**

<table>
<thead>
<tr>
<th>Points Awarded</th>
<th>Response</th>
</tr>
</thead>
</table>
| 4              | Part A:  
|                | Amount of Sap Collected |
|                | ![Diagram of Sap Collection](image) |
|                | AND |
|                | Part B: $1 \frac{1}{2}$ quarts |
|                | AND |
|                | Part C: 2 quarts |
|                | AND |
|                | Part D: The total amount of sap collected from Monday to Thursday is $1 \frac{1}{2} + 1 \frac{1}{4} + 1 \frac{3}{4} + 1 \frac{1}{2} = 6$ quarts. The total amount of sap collected from Friday to Sunday is $1 \frac{3}{4} + 1 \frac{1}{2} + \frac{3}{4} = 4$ quarts. The difference is $6 - 4 = 2$ quarts. |

| 3              | Any combination of three correct parts |
| 2              | Any combination of two correct parts |
| 1              | Any one correct part |
| 0              | Response is irrelevant, inappropriate, or incomplete. |
### Item 51
#### Scoring Rubric

<table>
<thead>
<tr>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
</table>
| 2      | The response achieves the following:  
        | • A score of 2 demonstrates a complete understanding of why multiplying a  
        |    given number by a fraction greater than 1 results in a product greater than  
        |    the given number. |
| 1      | The response achieves the following:  
        | • A score of 1 demonstrates a partial understanding of why multiplying a  
        |    given number by a fraction greater than 1 results in a product greater than  
        |    the given number. |
| 0      | The response achieves the following:  
        | • A score of 0 demonstrates limited to no understanding of why multiplying a  
        |    given number by a fraction greater than 1 results in a product less than  
        |    the given number. |

#### Exemplar Response:

<table>
<thead>
<tr>
<th>Points Awarded</th>
<th>Response</th>
</tr>
</thead>
</table>
| 2              | The number must be greater than 1.  
                  
              | **AND**  
              | If you multiply $1 \times \frac{5}{8}$, the product is $\frac{5}{8}$.  
              | Since the product is greater than $\frac{5}{8}$, you know that the number has to be  
              | greater than 1. By multiplying $\frac{5}{8}$ by a number greater than 1, you resize $\frac{5}{8}$  
              | making it greater than $\frac{5}{8}$.  
              | OR other valid explanation |
| 1              | The number must be greater than 1.  
                  
              | **OR**  
              | If you multiply $1 \times \frac{5}{8}$, the product is $\frac{5}{8}$.  
              | Since the product is greater than $\frac{5}{8}$, you know that the number has to be  
              | greater than 1. By multiplying $\frac{5}{8}$ by a number greater than 1, you resize $\frac{5}{8}$  
              | making it greater than $\frac{5}{8}$.  
              | OR other valid explanation |
| 0              | Response is irrelevant, inappropriate, or incomplete. |