

Teacher's Guide and Answer Keys

GEORGIA Coach



Revised GSE Edition

Mathematics



triumphlearning™

Coach

Georgia Coach®

Pretest: Practice Assessment 1

Item Correlation to Standards and Depth of Knowledge (DOK) Levels

Item Number	Standard(s)	DOK
Section 1		
1	MGSE.5.NBT.1	2
2	MGSE.5.NF.1	2
3	MGSE.5.NBT.5	2
4	MGSE.5.NF.4a	2
5	MGSE.5.MD.1	2
6	MGSE.5.NF.7b	2
7	MGSE.5.NF.5a	2
8	MGSE.5.OA.1	2
9	MGSE.5.NBT.2	2
10	MGSE.5.NF.2	2
11	MGSE.5.NBT.6	2
12	MGSE.5.G.1	2
13	MGSE.5.NF.7b	2
14	MGSE.5.NF.5b	2
15	MGSE.5.OA.2	2
16	MGSE.5.G.2	2
17	MGSE.5.NBT.2	2
18	MGSE.5.NF.2	2
19	MGSE.5.G.2	2
20	MGSE.5.NBT.6	2
21	MGSE.5.MD.1	2
22	MGSE.5.NBT.7	2
23	MGSE.5.MD.2	2
24	MGSE.5.OA.2	2
25	MGSE.5.G.1	2
26	MGSE.5.NBT.3a	2
27	MGSE.5.G.1	2
28	MGSE.5.OA.3	3
29	MGSE.5.NF.4b	3
30	MGSE.5.MD.2	3

Item Number	Standard(s)	DOK
Section 2		
31	MGSE.5.MD.3a	2
32	MGSE.5.NF.5b	2
33	MGSE.5.OA.3	3
34	MGSE.5.MD.5b	3
35	MGSE.5.NF.2	2
36	MGSE.5.NF.7a	2
37	MGSE.5.G.3	2
38	MGSE.5.NF.2	3
39	MGSE.5.NBT.3a	2
40	MGSE.5.MD.3b	2
41	MGSE.5.NF.6	2
42	MGSE.5.NBT.6	2
43	MGSE.5.MD.5b	2
44	MGSE.5.NBT.3b	2
45	MGSE.5.G.3	2
46	MGSE.5.OA.3	2
47	MGSE.5.NF.7c	2
48	MGSE.5.NF.3	1
49	MGSE.5.MD.4	2
50	MGSE.5.NBT.7	2
51	MGSE.5.MD.5a	2
52	MGSE.5.NBT.3b	2
53	MGSE.5.G.4	2
54	MGSE.5.NBT.7	2
55	MGSE.5.G.4	2
56	MGSE.5.NF.3	2
57	MGSE.5.MD.5a	2
58	MGSE.5.NBT.4	2
59	MGSE.5.G.4	3
60	MGSE.5.NBT.7	2
61	MGSE.5.NF.3	2
62	MGSE.5.MD.5c	2
63	MGSE.5.NF.2	2

Answer Key

Section 1

1. A
2. C
3. D
4. D
5. D
6. A
7. B
8. A
9. B
10. D
11. C
12. B
13. A
14. A
15. B
16. B
17. B
18. D
19. A
20. B
21. D
22. A
23. D
24. B
25. A
26. B
27. C
28. Part A: A, C
Part B: D
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. See Item-Specific Scoring Guidelines and Rubrics.
33. C
34. C
35. C
36. D
37. C
38. B
39. D
40. D
41. B
42. A
43. C
44. B
45. A
46. C
47. A
48. C
49. D
50. B
51. B
52. D
53. A
54. B
55. D
56. C
57. D
58. D
59. C
60. A
61. A
62. D
63. A

Item-Specific Scoring Guidelines and Rubrics

Item 28

Scoring Rubric

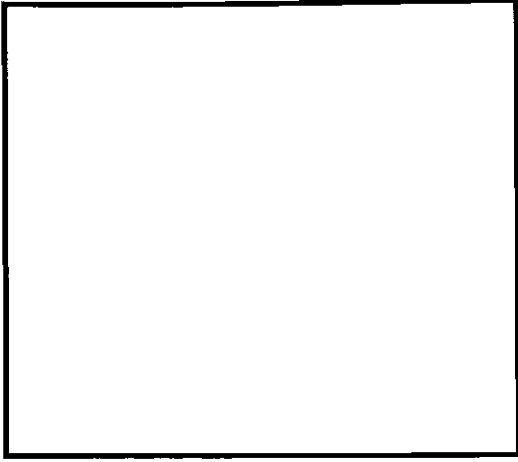
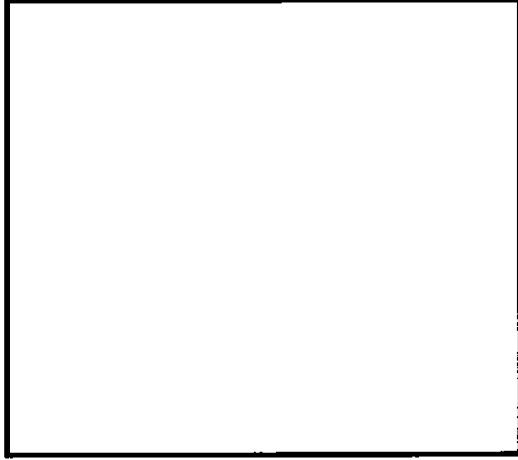
Points	Description
2	<p>The response achieves the following:</p> <ul style="list-style-type: none"> A score of 2 demonstrates a complete understanding of generating two numerical patterns using two given rules and identifying an apparent pattern between corresponding terms of the patterns. Student determines 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	<p>The response achieves the following:</p> <ul style="list-style-type: none"> 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	<p>The response achieves the following:</p> <ul style="list-style-type: none"> 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

Points	Description
2	<p>The response achieves the following:</p> <ul style="list-style-type: none"> 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	<p>The response achieves the following:</p> <ul style="list-style-type: none"> 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	<p>A score of 0 achieves the following:</p> <ul style="list-style-type: none"> 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.

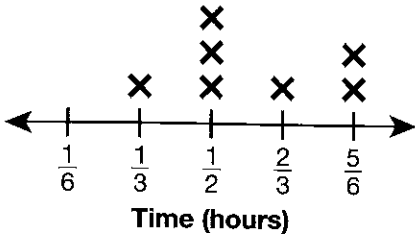
Exemplar Response:

Points Awarded	Response
2	<p>Sample response shown.</p> <div style="text-align: center;"> $6\frac{1}{2}$ ft  </div> <p>AND</p> <p>You can multiply the side lengths to find the area of the floor.</p> $5\frac{3}{4} \times 6\frac{1}{2} = \frac{23}{4} \times \frac{13}{2} = \frac{299}{8} = 37\frac{3}{8} \text{ sq ft}$ <p>Since each tile is 1 square foot, she needs $37\frac{3}{8}$ tiles.</p>
1	<div style="text-align: center;"> $6\frac{1}{2}$ ft  </div> <p>OR</p> <p>You can multiply the side lengths to find the area of the floor.</p> $5\frac{3}{4} \times 6\frac{1}{2} = \frac{23}{4} \times \frac{13}{2} = \frac{299}{8} = 37\frac{3}{8} \text{ sq ft}$ <p>Since each tile is 1 square foot, she needs $37\frac{3}{8}$ tiles.</p>
0	Response is irrelevant, inappropriate, or not provided.

Item 30**Scoring Rubric**

Points	Description
4	The response achieves the following: <ul style="list-style-type: none">• 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: <ul style="list-style-type: none">• 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: <ul style="list-style-type: none">• 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: <ul style="list-style-type: none">• 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: <ul style="list-style-type: none">• 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:

Points Awarded	Response
4	<p>Part A: Manuel's Practice Time</p>  <p>AND</p> <p>Part B: $\frac{1}{2}$ hr</p> <p>AND</p> <p>Part C: 30 minutes</p> <p>AND</p> <p>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.</p>
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.

Practice Assessment 1

Item 32

Scoring Rubric

Points	Description
2	The response achieves the following: <ul style="list-style-type: none"> A score of 2 demonstrates a complete understanding of why multiplying a given number by a fraction less than 1 results in a product less than the given number.
1	The response achieves the following: <ul style="list-style-type: none"> A score of 1 demonstrates a partial understanding of why multiplying a given number by a fraction less than 1 results in a product less than the given number.
0	The response achieves the following: <ul style="list-style-type: none"> A score of 0 demonstrates limited to no understanding of why multiplying a given number by a fraction less than 1 results in a product less than the given number.

Exemplar Response:

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

Answer Keys

Domain 1

Lesson 1

Coached Example

Write a numerical expression for "divide 30 by 5."

$$30 \div 5$$

Write a numerical expression for "then add 12."

$$+ 12$$

Combine the parts.

$$(30 \div 5) + 12$$

The expression is $(30 \div 5) + 12$.

Lesson Practice Part 1

1. D

2. A

3. C

4. B

5. D

6. C

7. D

8. A

9. A. $15 + (2 \times 35)$

B. $15 + (2 \times 35) - 3$

Lesson Practice Part 2

1. A

2. A

3. B

4. D

5. A

6. D

7. C

8. C

9. A. Possible answer: $(3 \times 3) + (2 \times 5) + (4 \times 1)$

B. Possible answer: $4 \times (3 + 5 + 4 + 1)$

Lesson 2

Coached Example

$$100 - 60 \div 5 \times 8 + 17$$

$$100 - 12 \times 8 + 17$$

$$100 - 96 + 17$$

$$4 + 17$$

21

$$100 - 60 \div 5 \times 8 + 17 = 21$$

Lesson Practice Part 1

1. B

2. D

3. C

4. B

5. A

6. D

7. A

8. B

9. A. Possible work:

$$11 + 7 - 2 \times 3 + 8 \div 2$$

$$11 + 7 - 6 + 8 \div 2$$

$$11 + 7 - 6 + 4$$

$$18 - 6 + 4$$

$$12 + 4$$

$$16$$

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. D

10. B

11. A. 49; Step 1: Multiply
 $4 \times 12 = 48$,
Step 2: Divide $48 \div 3 = 16$,
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

$$[7 \times 2 - 8] \div 3$$

$$[14 - 8] \div 3$$

$$6 \div 3$$

Divide.

$$6 \div 3$$

$$2$$

$$[(4 + 3) \times 2 - 8] \div 3 = 2$$

Lesson Practice Part 1

1. A

2. A

3. B

4. C

5. B

6. A

7. A

8. B

9. A. Possible work:

$$\{[11 + 7 - (2 \times 3)] + 8\} \div 2$$

$$\{[11 + 7 - 6] + 8\} \div 2$$

$$\{[18 - 6] + 8\} \div 2$$

$$\{12 + 8\} \div 2$$

$$20 \div 2$$

$$10$$

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: $68 \times 12 = 816$,
Step 4: $816 - 6 = 810$,
Step 5: $810 \div 2 = 405$
B. 21; Step 1: $4 \times 12 = 48$,
Step 2: $6 \div 2 = 3$,
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.

Pattern A	0	4	8	12	16
Pattern B	0	12	24	36	48

$12 \div 4 = 3$

$24 \div 8 = 3$

$36 \div 12 = 3$

$48 \div 16 = 3$

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 $12 \div 6 = 2$, $24 \div 12 = 2$, $36 \div 18 = 2$, $48 \div 24 = 2$, and $60 \div 30 = 2$.

Lesson 5

Coached Example

0, 1, 2, 3, 4

0, 4, 8, 12, 16

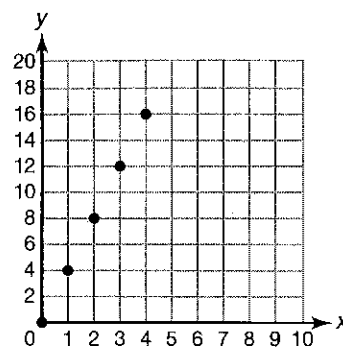
(0, 0)

(1, 4)

(2, 8)

(3, 12)

(4, 16)



$8 = 2 \times 4$

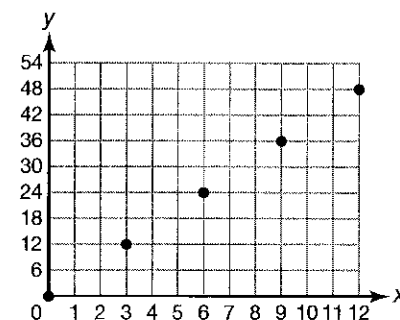
$12 = 3 \times 4$

$16 = 4 \times 4$

The value of the y-coordinate is **4 times** the value of the x-coordinate.

Lesson Practice Part 1

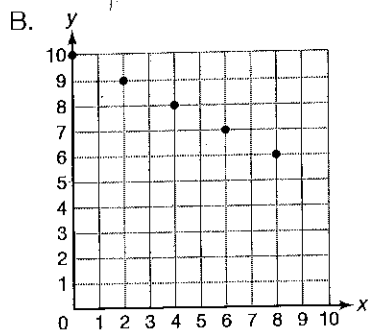
1. A
2. B
3. C
4. D
5. B
6. A. (0, 0), (3, 12), (6, 24),
(9, 36), (12, 48)



B. Possible answer: The y-coordinates are **4 times** the corresponding x-coordinates.

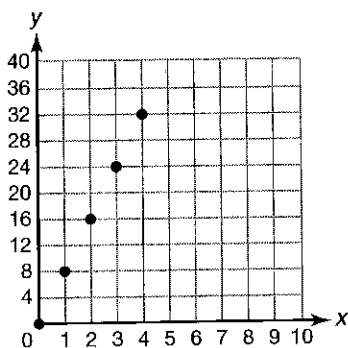
Lesson Practice Part 2

1. D
2. B
3. C
4. A
5. D
6. A. (0, 10), (2, 9), (4, 8), (6, 7), (8, 6)



Domain 1: Cumulative Assessment

1. A MGSE5.OA.1
2. D MGSE5.OA.1
3. B MGSE5.OA.3
4. C MGSE5.OA.2
5. B MGSE5.OA.1
6. D MGSE5.OA.2
7. A MGSE5.OA.3
8. C MGSE5.OA.3
9. 275 MGSE5.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. MGSE5.OA.3

Domain 2

Lesson 6

Coached Example

$$329 \times \$26 = m$$

$$\begin{array}{r} 1 \\ 15 \\ 329 \\ \times 26 \\ \hline 1974 \\ + 6580 \\ \hline 8,554 \end{array}$$

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; Possible work: $(375 \times \$65) + (284 \times \$45) = \$24,375 + \$12,780 = \$37,155$
B. \$2,377,920; Possible work: $\$37,155 \times 64 = \$2,377,920$

Lesson 7

Coached Example

$$\begin{array}{r} 47 \text{ R}4 \\ 12 \overline{)568} \\ \underline{-48} \\ 88 \\ \underline{-84} \\ 4 \end{array}$$

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. A. 34; Possible work:

$$\begin{array}{r} 34 \\ 22 \overline{)756} \\ \underline{-66} \\ 96 \\ \underline{-88} \\ 8 \end{array}$$

B. 35; Possible explanation: $756 \div 22 = 34 \text{ R}8$, 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:
 $9,840 \div 42 = 234 \text{ R}12$

B. The remainder represents the number of cards that are not in one of the boxes.

Lesson 8

Coached Example

$$\begin{array}{r} 28 \\ 34 \overline{)963} \\ \underline{-68} \\ 283 \\ \underline{-272} \\ 11 \end{array}$$

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:

$$\begin{array}{r} 11 \\ 25 \overline{)288} \\ \underline{-25} \\ 38 \\ \underline{-25} \\ 13 \end{array}$$

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.

Ones	Tenths	Hundredths	Thousandths
6	.	8	3
			7

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.

$$6 \text{ ones} = 6 \times 1 = 6$$

$$8 \text{ tenths} = 8 \times 0.1 = 0.8$$

$$3 \text{ hundredths} = 3 \times 0.01 = 0.03$$

$$7 \text{ thousandths} = 7 \times 0.001 = 0.007$$

Write the expanded form.

$$6.837 = 6 + 0.8 + 0.03 + 0.007$$

Write the expanded form with multiplication.

$$6.837 = 6 \times 1 + 8 \times 0.1 + 3 \times 0.01 + 7 \times 0.001$$

Lesson Practice Part 1

1. C
2. A
3. C
4. A
5. B
6. D
7. A
8. C
9. A. Yes; Possible explanation: I know that 3 in the hundredths place is 10 times as great as 3 in the thousandths place.
B. 3; Possible explanation: I know that 3 in the ones place is 10 times as great as the 3 in the tenths place.

Lesson Practice Part 2

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

9. A. $10 + 3 + \frac{2}{100} + \frac{6}{1,000}$
B. $10 + 3 + 0.02 + 0.006$
C. thirteen and twenty-six thousandths

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.

$$2 < 3, \text{ so } 4.295 < 4.3$$

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**.

$0.9 \div 10^3 = 0.0009$

$0.9 \div 10^3 = 0.0009$

Lesson Practice Part 1

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

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 $0.85 \times 10 = 8.5$ and then multiplied $8.5 \times 10^3 = 8.5 \times 1,000 = 8,500$.
 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.

$$\begin{array}{r} 11 \\ 5.64 \\ 9.50 \\ + 2.07 \\ \hline 17.21 \end{array}$$

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. 10.65 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 = \25.37
 B. \$43.23; Possible work:
 $\$25.37 + \$17.86 = \$43.23$

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.

$$\begin{array}{r} 1 \\ 3.75 \\ + 5.60 \\ \hline 9.35 \end{array}$$

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.

$$\begin{array}{r} 0\ 15410 \\ \ ~~15.50~~ \\ - \ 9.35 \\ \hline \ 6.15 \end{array}$$

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

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

$$\begin{array}{r} 13.95 \\ \times 27 \\ \hline 9765 \\ 27900 \\ \hline 37665 \end{array}$$

Multiply by the ones: **9765**

Multiply by the tens: **27900**

Add the partial products:

$$9765 + 27900 = 37665$$

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. A. \$36.13; Possible work:

$$\begin{array}{r} \$2.89 \\ \times 12.5 \\ \hline 1445 \\ 5780 \\ + 28900 \\ \hline \$35.125 \end{array}$$

B. Yes; Possible explanation: $12.5 \times \$2.89 = \36.125 , which rounds up to \$36.13.

Lesson Practice Part 2

1. B
2. D
3. A
4. B
5. A
6. D
7. D
8. A
9. C
10. B
11. A. 0.87; Possible work: $(0.75 \times 3.8) - (0.55 \times 3.6) = 2.85 - 1.98 = 0.87$
- B. 7.35; Possible work: $2.85 + 1.98 + (0.6 \times 4.2) = 4.83 + 2.52 = 7.35$

Lesson 16

Coached Example

Write an equation for the problem.

$$28.12 \div 9.5 = g$$

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**

$$10 \times 28.12 = 281.2$$

$$10 \times 9.5 = 95$$

$$\begin{array}{r} 2.96 \\ 95 \overline{)281.20} \\ \underline{-190} \\ 912 \\ \underline{-855} \\ 570 \\ \underline{-570} \\ 0 \end{array}$$

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 $2,679 \div 95$.

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 $\$12 \div 3.5 = \$120 \div 35 = 3 \text{ R}15$. Because she cannot buy part of a notebook, I ignored the remainder. So, Lydia spent $3 \times \$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 $\$9.50 \div \$0.59 = \$950 \div 59 = 16 \text{ R}6$. 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.5
3. B MGSE5.NBT.7
4. A MGSE5.NBT.4
5. B MGSE5.NBT.8
6. C MGSE5.NBT.7
7. B MGSE5.NBT.2
8. B MGSE5.NBT.1
9. $95.417 = 9 \times 10 + 5 \times 1$

$$+ 4 \times \frac{1}{10} + 1 \times \frac{1}{100} + 7 \times \frac{1}{1000} \quad \text{MGSE5.NBT.3a}$$

10. A. \$12.18; Possible work:

$$\begin{array}{r} \$3.48 \\ \times 3.5 \\ \hline 1740 \\ + 10440 \\ \hline \$12.180 \end{array}$$

B. Possible explanation:

I multiplied 3.48×3.5 . 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.

$$\frac{8}{10} = \frac{8 \div 2}{10 \div 2} = \frac{4}{5}$$

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 $\frac{4}{5}$.

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. $\frac{1}{4}, \frac{4}{16} = \frac{4 \div 4}{16 \div 4} = \frac{1}{4}$

B. Possible answer:

$$\frac{1}{4} = \frac{1 \times 2}{4 \times 2} = \frac{2}{8}$$

$$\frac{1}{4} = \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$$

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: $\frac{18}{24} \div \frac{2}{3} = \frac{9}{12}, \frac{9}{12} \times \frac{3}{3} = \frac{27}{36}$

B. $\frac{3}{4}$; Possible work:

$$\frac{18}{24} \div \frac{6}{6} = \frac{3}{4}$$

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. $\frac{3}{4}$

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. $\frac{11}{4}$

B. Possible answers: $\frac{22}{8}, \frac{33}{12}$,
Possible work based on possible answers: $\frac{11}{4} \times \frac{2}{2} = \frac{22}{8}, \frac{11}{4} \times \frac{3}{3} = \frac{33}{12}$

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.

$$\frac{5}{6} = \frac{5 \times 2}{6 \times 2} = \frac{10}{12}$$

$$\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$$

$$\frac{10}{12} + \frac{9}{12} = \frac{19}{12}$$

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. $1\frac{1}{3}$ pounds

B. Possible explanation:

I found a common denominator of 24 for the fractions. $\frac{3}{8} = \frac{9}{24}$, $\frac{1}{8} = \frac{3}{24}$, $\frac{5}{6} = \frac{20}{24}$. Then

$$\frac{9}{24} + \frac{3}{24} + \frac{20}{24} = \frac{32}{24}$$

Then I wrote the answer

$$\frac{32}{24} = 1\frac{8}{24} = 1\frac{1}{3}$$

Lesson Practice Part 2

1. A
2. C
3. B
4. D
5. B
6. D

7. A
8. A
9. C
10. D

11. A. $\frac{7}{12}$; Possible work: $\frac{1}{3} + \frac{1}{4} = \frac{4}{12} + \frac{3}{12} = \frac{7}{12}$

B. $\frac{5}{12}$; Possible work: $\frac{1}{4} + \frac{1}{6} = \frac{3}{12} + \frac{2}{12} = \frac{5}{12}$

C. Yes; Possible explanation:

$$I \text{ added } \frac{1}{3} + \frac{1}{4} + \frac{1}{6} = \frac{4}{12} + \frac{3}{12} + \frac{2}{12} = \frac{9}{12}. \text{ Because}$$

$\frac{9}{12} < 1$, 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.

$$\frac{9}{10} = \frac{9 \times 2}{10 \times 2} = \frac{18}{20}$$

$$\frac{1}{4} = \frac{1 \times 5}{4 \times 5} = \frac{5}{20}$$

$$\frac{18}{20} - \frac{5}{20} = \frac{13}{20}$$

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:
 $2\frac{1}{4} - 1\frac{7}{10} = 2\frac{5}{20} - 1\frac{14}{20} = 1\frac{25}{20} - 1\frac{14}{20} = \frac{11}{20}$
 B. $3\frac{11}{20}$; Possible work:
 $7\frac{1}{2} - (2\frac{5}{20} + 1\frac{14}{20}) = 7\frac{10}{20} - 3\frac{19}{20} = 6\frac{30}{20} - 3\frac{19}{20} = 3\frac{11}{20}$

Lesson 21

Coached Example

To decide if the product is greater or less than $8\frac{3}{4}$ feet, compare the factors $8\frac{3}{4}$ and $1\frac{1}{3}$ to 1.

Compare: $8\frac{3}{4} > 1$ and $1\frac{1}{3} > 1$.

The product of $8\frac{3}{4} \times 1\frac{1}{3}$ is **greater** than $8\frac{3}{4}$.

Convert $8\frac{3}{4}$ to an improper fraction. $\frac{35}{4}$

Convert $1\frac{1}{3}$ to an improper fraction. $\frac{4}{3}$

Multiply $8\frac{3}{4} \times 1\frac{1}{3}$.

$$\frac{35}{4} \times \frac{4}{3} = \frac{140}{12} = \frac{35}{3} = 11\frac{2}{3}$$

In simplest form, $8\frac{3}{4} \times 1\frac{1}{3} = 11\frac{2}{3}$.

Amber needs $11\frac{2}{3}$ feet of ribbon.

Lesson Practice Part 1

1. A
 2. B
 3. C
 4. D
 5. B
 6. A
 7. C
8. A. Possible explanation:
 He ate less than $\frac{7}{8}$ and less than $\frac{1}{2}$ of the pizza.
 Each factor in $\frac{7}{8} \times \frac{1}{2}$ is a fraction, so the product is less than either fraction.

B. $\frac{7}{16}$ of the pizza

Lesson Practice Part 2

1. B
 2. A
 3. C
 4. B
 5. D
 6. A
 7. D
 8. C
9. A. Yes; Possible explanation:
 Because $\frac{3}{4}$ is multiplied by a number greater than 1, the product is greater than $\frac{3}{4}$.
 B. No; Possible explanation:
 Because $\frac{5}{2}$ is multiplied by a number less than 1, the product is less than $\frac{5}{2}$.

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 1

1. C
 2. B
 3. A
 4. D
 5. A
 6. B
 7. C
 8. D
9. A. $\frac{1}{8}; \frac{5}{8} \times \frac{1}{5} = \frac{5}{40} = \frac{1}{8}$
 B. $4; \frac{1}{8} \times 32 = \frac{1}{8} \times \frac{32}{1} = \frac{32}{8} = 4$

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. $1\frac{19}{20}$ miles; Possible work:
 $3\frac{1}{4} \times \frac{3}{5} = \frac{13}{4} \times \frac{3}{5} = \frac{39}{20} = 1\frac{19}{20}$
 B. $6\frac{3}{32}$ miles; Possible work:
 $3\frac{1}{4} \times \frac{7}{8} = \frac{13}{4} \times \frac{7}{8} = \frac{91}{32} = 2\frac{27}{32}$, $2\frac{27}{32} + 3\frac{1}{4} = 2\frac{27}{32} + 3\frac{8}{32} = 5\frac{35}{32} = 6\frac{3}{32}$

Lesson 23

Coached Example

Write a division sentence for the problem.

Let o represent the number of ounces of jellybeans each friend will get.

$45 \div 4 = o$

$$\begin{array}{r} 11 \text{ R}1 \\ 4 \overline{)45} \\ \underline{-4} \\ 05 \\ \underline{-4} \\ 1 \end{array}$$

Write the quotient as a mixed number. $11\frac{1}{4}$

Is the mixed number in simplest form? **yes**

Each friend should get $11\frac{1}{4}$ 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. $\frac{1}{2}$ of a cake
B. Answer may vary. Check students' models. Students should show 4 wholes divided into 2 equal parts. Each part is $\frac{1}{2}$.

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. $\frac{5}{8}$ foot; $5 \div 8 = \frac{5}{8}$
B. $7\frac{1}{2}$ inches; Possible work:
 $60 \div 8 = 7\frac{4}{8} = 7\frac{1}{2}$

Lesson 24

Coached Example

Write an equation for the problem.

$\frac{1}{2} \div 6 = s$

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 $\frac{1}{6}$.

$\frac{1}{2} \times \frac{1}{6} = \frac{1}{12}$

Each friend will get $\frac{1}{12}$ 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 $\frac{1}{4}$ -cup scoops: $6 \div \frac{1}{4} = \frac{6}{1} \times \frac{4}{1} = \frac{24}{1} = 24$. So Anna needs 24 $\frac{1}{4}$ -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 ; $2 \div \frac{1}{20} = 40$
B. 30 ; $3 \div \frac{1}{10} = 30$

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. $3\frac{5}{10}$ or $3\frac{1}{2}$ MGSE5.NF.1
10. A. $32 \div 3 = f$; Let f represent the amount of dog food each dog will get.
B. $10\frac{2}{3}$ ounces;
 $10 \text{ R}2$
 $3 \overline{)32}$
 $\underline{-3}$
 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**

$2 \times 4 = 8$

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. $24\frac{3}{4}$; Possible work:
 $891 \div 36 = 24 \text{ R}27 =$
 $24\frac{27}{36} = 24\frac{3}{4}$

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 **5×250** .

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. 4.275 kilometers
 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:
 $135 \div 1,000 = 0.135$,
 $0.135 \times 25 = 3.375$
 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. A. 144 blocks; Possible explanation: There are 4 rows and 6 columns on the bottom layer, so there are 4×6 , or 24, cubes in the bottom layer. There are 6 layers, so multiply 6×24 , which is 144.
 B. 144 cubic inches; Possible explanation: Since each block is 1 cubic inch, the volume in cubic inches is equal to the number of blocks.

Lesson Practice Part 2

1. D
2. C
3. B
4. B
5. A
6. D
7. A. 140 cubic units; Possible work: $7 \times 5 \times 4 = 7 \times (5 \times 4) = 7 \times 20 = 140$
 B. Possible explanation: The commutative property states that the order of the factors does not change the product. The three dimensions of the two prisms are the same but in different orders.
 C. Possible answers include two of the following:
 4-by-5-by 7, 4-by-7-by 5,
 5-by-4-by-7, 5-by-7-by-4
 or any combination of three dimensions that have a product of 140.

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.

$$V = 2 \times 2 \times 2 = 8 \text{ cubic feet}$$

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.

$$8 \text{ cubic feet} + 16 \text{ cubic feet} = 24 \text{ cubic feet}$$

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

$$3 \times \frac{1}{4} = \frac{3}{4}$$

$$2 \times \frac{3}{8} = \frac{6}{8}$$

$$5 \times \frac{1}{2} = \frac{5}{2}$$

$$1 \times \frac{5}{8} = \frac{5}{8}$$

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

$$\frac{6}{8} + \frac{6}{8} + \frac{20}{8} + \frac{5}{8} = \frac{37}{8}$$

$$\frac{37}{8} = 4\frac{5}{8}$$

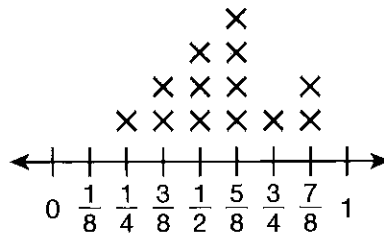
The total weight of the fruit that

Logan bought is $4\frac{5}{8}$ pounds.

Lesson Practice Part 1

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

Heights of Seedlings (in inches)



B. $\frac{5}{8}$; Possible work: $\frac{7}{8} - \frac{1}{4} =$

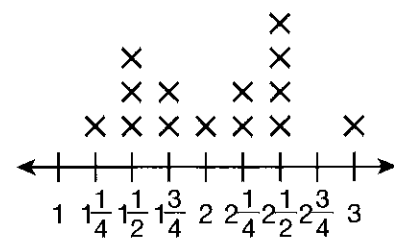
$$\frac{7}{8} - \frac{2}{8} = \frac{5}{8}$$

Lesson Practice Part 2

1. C
2. C
3. A
4. B
5. B

6. A. Possible line plot:

Miles Jogged



B. $28\frac{3}{4}$; Possible work: $1\frac{1}{4} + (3 \times \frac{1}{2}) + (2 \times \frac{3}{4}) + 2 + (2 \times 2\frac{1}{4}) + (4 \times 2\frac{1}{2}) + 3 = \frac{5}{4} + \frac{9}{2} + \frac{14}{4} + 2 + \frac{18}{4} + \frac{20}{2} + 3 = \frac{5}{4} + \frac{18}{4} + \frac{14}{4} + \frac{8}{4} + \frac{18}{4} + \frac{40}{4} + \frac{12}{4} = \frac{115}{4} = 28\frac{3}{4}$

Domain 4: Cumulative Assessment

1. D MGSE5.MD.5b
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.

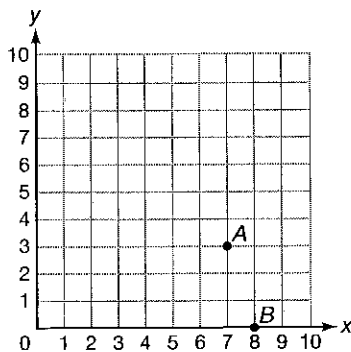
The ordered pair **(4, 6)** gives the location of point *A*.

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



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.

$$8 - 4 = 4$$

$$P = 2 \times 6 + 2 \times 4$$

$$P = 12 + 8$$

$$P = 20 \text{ units}$$

The perimeter of rectangle JKLM is 20 units.

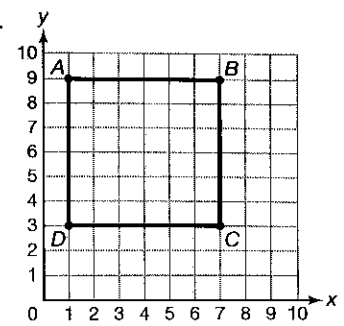
Lesson Practice Part 1

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

7. A.



- B. 24 units
C. 36 square units

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**

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

7. A. pentagon
 B. Regular pentagon; possible explanation: It is a regular pentagon since all the sides are equal and all the angles are equal.

Lesson Practice Part 2

1. B
2. B
3. A
4. D
5. A
6. A
7. D
8. C
9. A. 90°

- B. No; possible explanation: A regular quadrilateral or square always has 4 right angles. The size of the square does not matter.

Lesson 33

Coached Example

The lengths of the sides are 5 cm, 5 cm, and 7 cm.

A(n) **isosceles** triangle has 2 equal sides.

The triangle has a(n) **right** angle, so the triangle is a **right** triangle.

The triangle is a(n) **isosceles, right** triangle.

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.

Lesson Practice Part 2

1. B
2. B
3. A
4. A
5. D
6. C
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**.

\overline{JK} is parallel to \overline{ML} .

\overline{JM} is parallel to \overline{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. C
2. A
3. D
4. A
5. C

6. B
7. B
8. D
9. A. plane figure, polygon, quadrilateral, parallelogram, rhombus.
 B. Possible explanation: A square is a rhombus with 4 right angles.

Lesson Practice Part 2

1. C
2. C
3. A
4. D
5. D
6. A
7. B
8. B
9. C
10. B
11. A. Yes; because it has two opposite sides parallel.
 B. No; because it does not have 4 right angles.
 C. No; because it does not have 4 equal sides

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

Posttest: Practice Assessment 2

Item Correlation to Standards and Depth of Knowledge (DOK) Levels

Item Number	Standard(s)	DOK
Section 1		
1	MGSE.5.NBT.1	2
2	MGSE.5.MD.1	2
3	MGSE.5.NF.3	2
4	MGSE.5.NBT.4	2
5	MGSE.5.G.1	2
6	MGSE.5.NBT.7	2
7	MGSE.5.G.2	2
8	MGSE.5.NBT.3a	2
9	MGSE.5.NF.7b	2
10	MGSE.5.NF.2	2
11	MGSE.5.MD.1	2
12	MGSE.5.NBT.2	3
13	MGSE.5.G.1	2
14	MGSE.5.NF.1	2
15	MGSE.5.NF.5b	2
16	MGSE.5.NBT.5	2
17	MGSE.5.G.1	2
18	MGSE.5.NF.3	2
19	MGSE.5.NBT.2	2
20	MGSE.5.NF.2	2
21	MGSE.5.NF.7a	2
22	MGSE.5.NBT.6	2
23	MGSE.5.MD.2	2
24	MGSE.5.OA.3	3
25	MGSE.5.MD.5c	2
26	MGSE.5.NBT.7	2
27	MGSE.5.MD.3a	2
28	MGSE.5.OA.3	3
29	MGSE.5.NF.4b	3
30	MGSE.5.MD.2	3

Posttest: Practice Assessment 2 (continued)

Item Number	Standard(s)	DOK
Section 2		
31	MGSE.5.NBT.6	2
32	MGSE.5.G.2	2
33	MGSE.5.NBT.3a	2
34	MGSE.5.G.4	3
35	MGSE.5.OA.3	2
36	MGSE.5.NF.4a	2
37	MGSE.5.MD.3b	2
38	MGSE.5.NBT.7	2
39	MGSE.5.NF.6	2
40	MGSE.5.NF.2	2
41	MGSE.5.MD.5b	2
42	MGSE.5.OA.2	2
43	MGSE.5.NF.7c	2
44	MGSE.5.NF.1	2
45	MGSE.5.MD.4	2
46	MGSE.5.NBT.3b	2
47	MGSE.5.G.4	3
48	MGSE.5.NF.2	2
49	MGSE.5.MD.5b	2
50	MGSE.5.NBT.6	3
51	MGSE.5.NF.5b	2
52	MGSE.5.MD.5a	3
53	MGSE.5.OA.2	2
54	MGSE.5.G.4	2
55	MGSE.5.NBT.7	2
56	MGSE.5.NF.3	1
57	MGSE.5.G.3	2
58	MGSE.5.NBT.3b	2
59	MGSE.5.NF.5a	3
60	MGSE.5.MD.5a	3
61	MGSE.5.NF.7b	2
62	MGSE.5.G.3	2
63	MGSE.5.OA.1	2

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

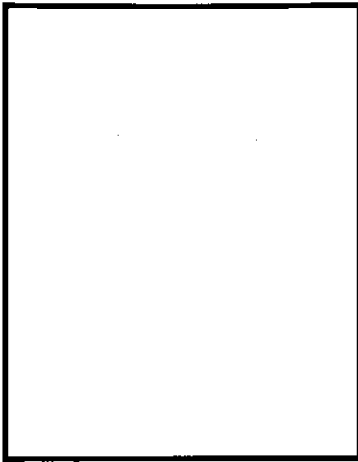
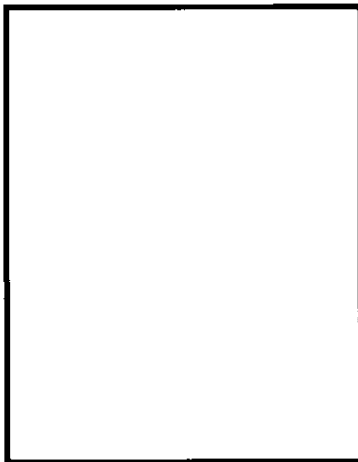
Points	Description
2	The response achieves the following: <ul style="list-style-type: none"> • A score of 2 demonstrates a complete understanding of generating two numerical patterns using two given rules. • Student selects choices C, E, and F.
1	The response achieves the following: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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

Points	Description
2	The response achieves the following: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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:

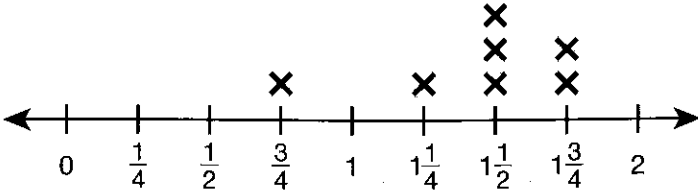
Points Awarded	Response
2	<p>Sample response shown.</p> <div style="text-align: center;"> $4\frac{1}{2}m$  $5\frac{3}{4}m$ </div> <p>AND</p> <p>You can multiply the side lengths to find the area of the patio.</p> $4\frac{1}{2} \times 5\frac{3}{4} = \frac{9}{2} \times \frac{23}{5} = \frac{207}{8} = 25\frac{7}{8} \text{ sq m}$ <p>Since each tile is 1 square meter, she needs $25\frac{7}{8}$ tiles.</p>
1	<div style="text-align: center;"> $4\frac{1}{2}m$  $5\frac{3}{4}m$ </div> <p>OR</p> <p>You can multiply the side lengths to find the area of the patio.</p> $4\frac{1}{2} \times 5\frac{3}{4} = \frac{9}{2} \times \frac{23}{5} = \frac{207}{8} = 25\frac{7}{8} \text{ sq m}$ <p>Since each tile is 1 square meter, she needs $25\frac{7}{8}$ tiles.</p>
0	<p>Response is irrelevant, inappropriate, or not provided.</p>

Item 30

Scoring Rubric

Points	Description
4	The response achieves the following: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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:

Points Awarded	Response
4	<p><i>Part A:</i> Amount of Sap Collected</p>  <p style="text-align: center;">Amount of Sap (quarts)</p> <p><i>AND</i></p> <p><i>Part B:</i> $1\frac{1}{2}$ quarts</p> <p><i>AND</i></p> <p><i>Part C:</i> 2 quarts</p> <p><i>AND</i></p> <p><i>Part D:</i> 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.</p>
3	<i>Any combination of three correct parts</i>
2	<i>Any combination of two correct parts</i>
1	<i>Any one correct part</i>
0	<i>Response is irrelevant, inappropriate, or incomplete.</i>

Item 51

Scoring Rubric

Points	Description
2	The response achieves the following: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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:

Points Awarded	Response
2	<p><i>The number must be greater than 1.</i></p> <p><i>AND</i></p> <p><i>If you multiply $1 \times \frac{5}{8}$, the product is $\frac{5}{8}$.</i> <i>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 $\frac{5}{8}$.</i></p> <p><i>OR other valid explanation</i></p>
1	<p><i>The number must be greater than 1.</i></p> <p><i>OR</i></p> <p><i>If you multiply $1 \times \frac{5}{8}$, the product is $\frac{5}{8}$.</i> <i>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 $\frac{5}{8}$.</i></p> <p><i>OR other valid explanation</i></p>
0	<i>Response is irrelevant, inappropriate, or incomplete.</i>