

Teacher's Guide and Answer Keys

GEORGIA Coach



Revised GSE Edition

Mathematics

GRADE

3

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

Item Number	Standard(s)	DOK
Section 2		
31	MGSE.3.G.2	1
32	MGSE.3.NBT.3	2
33	MGSE.3.NBT.2	2
34	MGSE.3.OA.5	2
35	MGSE.3.NF.1	1
36	MGSE.3.NF.3b	3
37	MGSE.3.NBT.1	3
38	MGSE.3.G.1	2
39	MGSE.3.MD.7a	2
40	MGSE.3.MD.2	1
41	MGSE.3.MD.7c	3
42	MGSE.3.G.1	2
43	MGSE.3.NF.1	1
44	MGSE.3.OA.4	2
45	MGSE.3.MD.8	2
46	MGSE.3.NBT.2	3
47	MGSE.3.MD.3	2
48	MGSE.3.G.2	2
49	MGSE.3.NF.2a	2
50	MGSE.3.NF.3c	2
51	MGSE.3.NF.3d	3
52	MGSE.3.OA.5	3
53	MGSE.3.NF.3a	2
54	MGSE.3.OA.5	2
55	MGSE.3.MD.1	2
56	MGSE.3.MD.5	2
57	MGSE.3.OA.7	2
58	MGSE.3.G.1	1
59	MGSE.3.NF.3d	1
60	MGSE.3.G.2	3
61	MGSE.3.MD.7b	3
62	MGSE.3.NBT.2	2
63	MGSE.3.OA.8	3
64	MGSE.3.NBT.3	2

Answer Key**Section 1**

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

Item-Specific Scoring Guidelines and Rubrics

Item 28

Scoring Rubric

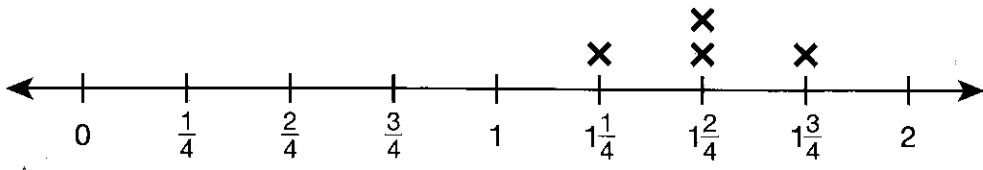
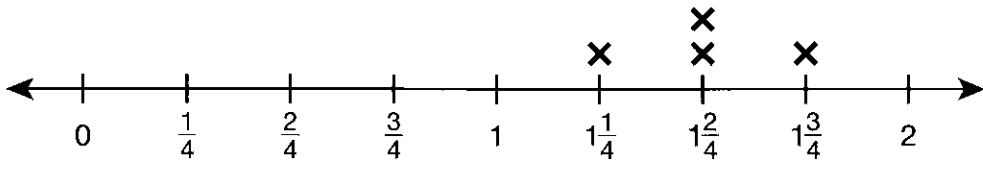
Points	Description
2	<p>The response achieves the following:</p> <ul style="list-style-type: none"> A score of 2 demonstrates a complete understanding of writing equations that involve multiplication and subtraction and solving the equations. Student determines that the correct answers for Part A are choices B and E. 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 writing equations that involve multiplication and subtraction and solving the equations. Student determines that that the correct answers for Part A are choices B and E. OR Student determines that the correct choice 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 writing equations that involve multiplication and subtraction and solving the equations.

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 generating measurement data by measuring lengths using rulers marked with halves and fourths and showing data by making a line plot.
1	<p>The response achieves the following:</p> <ul style="list-style-type: none"> A score of 1 demonstrates a partial understanding of generating measurement data by measuring lengths using rulers marked with halves and fourths and showing data by making a line plot. Give 1 point if the student's line plot is correct OR if the student's explanation is coherent and complete.
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 measurement data by measuring lengths using rulers marked with halves and fourths and showing data by making a line plot.

Exemplar Response:

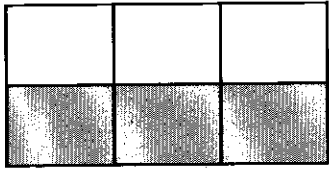
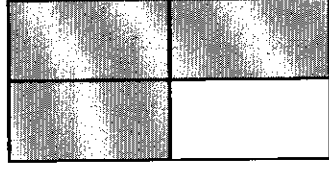
Points Awarded	Response
2	 <p><i>I measured the ribbons with a ruler. I made a number line from 0 to 2, showing quarter-inches. Then I made an X above the measurement for each ribbon.</i></p>
1	 <p><i>OR</i> <i>I measured the ribbons with a ruler. I made a number line from 0 to 2, showing quarter-inches. Then I made an X above the measurement for each ribbon.</i></p>
0	<i>Response is irrelevant, inappropriate, or not provided.</i>

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 the concept of fractional parts and can use this concept to compare fractions.
3	The response achieves the following: <ul style="list-style-type: none"> A score of 3 demonstrates that the student mostly understands the concept of fractional parts and can mostly use this concept to compare fractions.
2	The response achieves the following: <ul style="list-style-type: none"> A score of 2 demonstrates that the student somewhat understands the concept of fractional parts and can somewhat use this concept to compare fractions.
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 the concept of fractional parts and has a limited ability to use this concept to compare fractions.
0	The response achieves the following: <ul style="list-style-type: none"> A score of 0 demonstrates that the student has no understanding of the concept of fractional parts and cannot use this concept to compare fractions.

Exemplar Response:

Points Awarded	Response
4	<p><i>Part A: Models may vary. Sample model shown.</i></p>  <p><i>AND</i></p> <p><i>Part B: Models may vary. Sample model shown.</i></p>  <p><i>AND</i></p> <p><i>Part C: $\frac{3}{6} < \frac{3}{4}$ or $\frac{3}{4} > \frac{3}{6}$</i></p> <p><i>AND</i></p> <p><i>Part D: The models are the same size, so you can compare parts of whole. Fourths are larger than sixths, so 3 fourths is greater than 3 sixths.</i></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 37

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 rounding a 4-digit number to the nearest hundred.
1	The response achieves the following: <ul style="list-style-type: none"> A score of 1 demonstrates a partial understanding of rounding a 4-digit number to the nearest hundred.
0	The response achieves the following: <ul style="list-style-type: none"> A score of 0 demonstrates limited to no understanding of rounding a 4-digit number to the nearest hundred.

Exemplar Response:

Points Awarded	Response
2	4,400 AND <i>I looked at the digit to the right of the hundreds place. That digit is 5, so I rounded the hundreds digit up by 1. Then I changed the digits to the right of the hundreds digit to 0.</i> OR other valid explanation
1	4,400 OR <i>I looked at the digit to the right of the hundreds place. That digit is 5, so I rounded the hundreds digit up by 1. Then I changed the digits to the right of the hundreds digit to 0.</i> OR other valid explanation
0	<i>Response is irrelevant, inappropriate, or not provided.</i>

Student Scoring Record

Student Name _____ Date _____

Item Number(s)	Points Possible	Points Scored
Section 1		
1-27	27	
28-29	4	
30	4	
Section 1 Total		
Section 2		
31-36	6	
37	2	
38-64	27	
Section 2 Total		

Section 1 Total	
Section 2 Total	
ASSESSMENT TOTAL	

Answer Keys

Domain 1

Lesson 1

Coached Example

There are **3** thousands. There are **2** tens.

There are **6** hundreds. There are **4** ones.

Thousands		Hundreds	Tens	Ones
3	,	6	2	4

The number in base-ten numerals is **3,624**.

Write the thousands part in words. **three thousand**

Write the hundreds part in words. **six hundred**

Write the tens part in words. **twenty**

Write the ones part in words. **four**

The number name is **three thousand, six hundred twenty-four**.

Lesson Practice Part 1

- D
- B
- A
- A
- C
- A
- D
- A. 4,182
B. four thousand, one hundred eighty-two
C. $4,000 + 100 + 80 + 2$

Lesson Practice Part 2

- D
- C
- D
- B
- C
- B
- D
- A. 20,320
B. twenty-thousand, three hundred twenty
C. $20,000 + 300 + 20$

Lesson 2

Coached Example

7,736

7,175

7,742

All of the thousands digits are 7.

7 hundreds $>$ 1 hundred

So, the least number is **7,175**.

3 tens $<$ 4 tens

So, the greatest number is **7,742**.

The order from greatest to least is **7,742, 7,736, 7,175**.

Lesson Practice Part 1

- D
- C
- A
- B
- D
- D
- D
- A
- A. $43,892 < 43,928$
B. 43,392; 43,892; 43,928

Lesson Practice Part 2

- B
- D
- D
- C
- A
- C
- B
- B
- C
- A
- A. 2,458; 2,485; 2,548
B. 8,542; 8,524; 8,452
C. $<$

Lesson 3

Coached Example

What is the sum in the number sentence

$$4 + 9 = 13? \mathbf{13}$$

What is the sum in the number sentence

$$\square + 4 = 13? \mathbf{13}$$

Are the sums the same? **yes**

What are the two addends in the number sentence

$$4 + 9 = 13? \mathbf{4 \text{ and } 9}$$

What property of addition says that adding the addends in a different order does not change the sum?

commutative property

What is the missing addend in the number sentence

$$\square + 4 = 13? \mathbf{9}$$

The missing addend is **9**.

Lesson Practice Part 1

1. C
2. A
3. A
4. D
5. C
6. B
7. C
8. B
9. A. commutative property of addition
B. associative property of addition
C. 24; $(13 + 7) + 4 = 20 + 4 = 24$

Lesson Practice Part 2

1. B
2. C
3. A
4. A
5. D
6. D
7. C
8. A
9. B
10. B
11. A. associative
B. 728
C. Sample answer: By using the associative property I was able to make a hundred. That means there is no regrouping needed to add the third number.

Lesson 4

Coached Example

Do the numbers increase or decrease? **decrease**

31 is **3** less than 34.

Try subtracting **3** from each number.

$$34 - 3 = 31$$

$$31 - 3 = 28$$

$$28 - 3 = 25$$

$$25 - 3 = 22$$

The rule is **subtract 3**.

Use the rule to find the next number in the pattern.

$$22 - 3 = 19$$

The next number in the pattern is **19**.

Look at the **ones** digit in each number.

The even numbers in the pattern are **34, 28, and 22**.

The odd numbers in the pattern are **31, 25, and 19**.

The numbers in the pattern are both **odd and even**.

Lesson Practice Part 1

1. C
2. D
3. B
4. C
5. A
6. C
7. B
8. D
9. A. 30 minutes; Explanations may vary. Possible explanation: The rule of the pattern is to add 3. So I added $27 + 3 = 30$
B. Both odd and even; Explanations may vary. Possible explanation: The numbers of the workout minutes change from odd to even. There are 3 odd numbers and 3 even numbers in the pattern. I looked at the ones digit of each number. The numbers 15, 21, and 27 are odd. The numbers 18, 24, and 30 are even.

Lesson Practice Part 2

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

8. A
 9. D
 10. D
 11. A. Add \$8
 B. \$48; Possible explanation: The rule is to add \$8, so I added $\$40 + \$8 = \$48$.
 C. \$64; Possible explanation: I extended the pattern to $\$48 + \$8 = \$56$ and $\$56 + \$8 = \$64$.

Lesson 5

Coached Example

What number do you add to 275 to get 300? **25**What number do you need to subtract from 429 to keep the sum the same? **25**

$$300 + 404 = 704$$

Tyler has **704** pennies in his jar.

Lesson Practice Part 1

1. A
 2. C
 3. B
 4. B
 5. A
 6. B
 7. D
 8. C
 9. A. 934
 B. 655

Lesson Practice Part 2

1. B
 2. C
 3. A
 4. D
 5. B
 6. D
 7. C
 8. D
 9. A. 414
 B. 650; Possible work: $236 + 414 = 650$

Lesson 6

Coached Example

$$245 - 10 = \square$$

How many tens in 10? **1 ten**Which digit will change in 245 when you subtract 1 ten? **the tens digit or 4**The digit in the tens place is **4**. It will decrease by **1**.Zoe counted **235** beads.

Lesson Practice Part 1

1. A
 2. A
 3. A
 4. C
 5. B
 6. A
 7. D
 8. A
 9. A. 16
 B. 42; Possible work: $584 - 26 = 558$;
 $600 - 558 = 42$

Lesson Practice Part 2

1. B
 2. A
 3. B
 4. A
 5. D
 6. A
 7. C
 8. A. 446
 B. 174; Possible work: $446 - 272 = 174$

Lesson 7

Coached Example

The digit in the hundreds place is **7**.The digit to the right of the rounding place is **4**.

$$4 < 5$$

Should you round 742 up or down? **down**To the nearest hundred, 742 rounds to **700**.The digit in the tens place is **1**.The digit to the right of the rounding place is **8**.

$$8 > 5$$

Should you round 718 up or down? **up**To the nearest ten, 718 rounds to **720**.

Compare the rounded numbers.

$$700 < 720$$

718 rounded to the nearest **ten** is the greater number.

Lesson Practice Part 1

1. C
 2. A
 3. C

4. A
5. C
6. C
7. D
8. A
9. A. 840
B. 800

Lesson Practice Part 2

1. C
2. B
3. A
4. C
5. D
6. D
7. A
8. A
9. A. 45
B. 49; Possible explanation: If the number to the right of the place being rounded is 5 or greater, the number is rounded up. So, 50 would be rounded up to 100 to the nearest hundred.

Lesson 8

Coached Example

"How much did Mr. Mitchell spend in all?" tells you to **add**.

Estimate the sum of $\$482 + \117 .

$\$482$ rounds up to $\$500$.

$\$117$ rounds down to $\$100$.

Add the rounded amounts.

$$\$500 + \$100 = \$600$$

The answer should be about $\$600$.

Find the exact sum.

$$\begin{array}{r} \$482 \\ + \$117 \\ \hline \$599 \end{array}$$

Is the exact amount close to the estimate? **yes**

Is your exact answer reasonable? **yes**

Mr. Mitchell spent $\$599$ in all.

Lesson Practice Part 1

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

6. B
7. C
8. D
9. A. $\$400$; Answers may vary. Possible answer shown is to round each amount to the nearest $\$100$, then subtract. $\$695$ rounds up to $\$700$. $\$318$ rounds down to $\$300$. $\$700 - \$300 = \$400$
B. $\$377$; $\$695 - \$318 = \$377$. Answers may vary. Possible answer: My answer is reasonable because $\$377$ is close to $\$400$.

Lesson Practice Part 2

1. C
2. B
3. D
4. A
5. C
6. C
7. D
8. A. 490
B. 500
C. Michele is incorrect. Possible explanation: The sum of $293 + 204$ is 497, which is closer to 500 than to 490. In this case, rounding to the nearest hundred gave a better estimate.

Domain 1: Cumulative Assessment for Lessons 1–8

1. B MGSE3.OA.8, MGSE3.NBT.2
2. C MGSE3.OA.8, MGSE3.NBT.2
3. C MGSE3.NBT.1
4. A MGSE3.OA.8, MGSE3.NBT.2
5. C MGSE3.OA.8, MGSE3.NBT.2
6. D MGSE3.NBT.1
7. C MGSE3.NBT.2
8. D MGSE3.OA.8
9. 20 MGSE3.OA.9
10. A. 875
B. 590
MGSE3.OA.8, MGSE3.NBT.2

Domain 2**Lesson 9**

Coached Example

There are **2** cookies on each plate.There are **6** plates.

$$2 + 2 + 2 + 2 + 2 + 2 = 12$$

6 groups of **2** equals **12**.

$$6 \times 2 = 12$$

There are **12** cookies in all.

Lesson Practice Part 1

1. C
2. C
3. B
4. A
5. B
6. B
7. D
8. A. $3 + 3 + 3 + 3 = 12$
B. $4 \times 3 = 12$

Lesson Practice Part 2

1. D
2. B
3. C
4. A
5. C
6. A
7. D
8. C
9. A. $3 + 3 + 3 + 3 + 3 + 3 = 18$
B. $3 \times 6 = 18$ and $6 \times 3 = 18$

Lesson 10

Coached Example

How many rows are there? **3**How many squares are in each row? **4**

Use skip counting to find the total number of squares.

4, 8, 12The model shows the multiplication sentence $3 \times 4 = 12$.

Lesson Practice Part 1

1. B
2. B
3. D
4. D
5. C
6. B
7. D
8. B
9. A. 8, 16, 24
B. $3 \times 8 = 24$ or $8 \times 3 = 24$

Lesson Practice Part 2

1. B
2. C
3. C
4. A
5. B
6. D
7. C
8. A
9. A. $5 \times 9 = 45$ or $9 \times 5 = 45$
B. Possible answer: There are 5 rows with 9 circles in each row. I can skip-count by 9s: 9, 18, 27, 36, 45.

Lesson 11

Coached Example

One spider has **8** legs.The rule is number of spiders \times **8** = total number of legs.

$$1 \times 8 = 8$$

$$3 \times 8 = 24$$

$$5 \times 8 = 40$$

$$7 \times 8 = 56$$

Use the rule to find the total number of legs that 9 spiders have.

$$9 \times 8 = 72$$

Nine spiders have **72** legs in all.

Lesson Practice Part 1

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

7. A
8. A. 14 triangles; Answers may vary. Possible answer: The rule is to multiply the number of squares by 2 triangles. So 7 squares \times 2 triangles = 14 triangles.
- B. Even; Answers may vary. Possible answer: Since an even number can be separated into equal groups, I showed 14 as the sum of two equal addends: $7 + 7 = 14$.

Lesson Practice Part 2

1. A
2. C
3. D
4. C
5. A
6. B
7. B
8. A
9. A. 81; Possible explanation: The pattern is to multiply the number of playlists by 9 and $9 \times 9 = 81$.
- B. No; Possible explanation: If the number of playlists is an even number than the number of songs will also be an even number.

Lesson 12

Coached Example

A cookie costs \$2 and a cake costs 4 times as much.

$$2 \times 4 = \square$$

$$2 \times 4 = 8.$$

A cake costs \$8 at Buddy's Bakery.

Lesson Practice Part 1

1. C
2. D
3. B
4. A
5. B
6. D
7. A
8. C
9. A. Students' drawings should show 4 groups of 12.
- B. $4 \times 12 = \square$ $12 \times 4 = \square$
- C. 48

Lesson Practice Part 2

1. D
2. B
3. C
4. A
5. C
6. A
7. B
8. B
9. A. 36; Possible work: $6 \times 6 = 36$
- B. 12; Possible explanation: Vanessa jogs more days than Zoe, so I subtracted the days $6 - 4 = 2$ and then multiplied the number of miles times 2 to get $6 \times 2 = 12$.

Lesson 13

Coached Example

The factors are 4 and 9.

The factors are 9 and 4.

The commutative property of multiplication says that changing the **order** of the factors does not change the product.

So, $9 \times 4 = 36$.

The product of 9×4 is 36.

Lesson Practice Part 1

1. D
2. A
3. D
4. C
5. B
6. C
7. D
8. C
9. A. Answers may vary. Possible answer: $8 \times 6 = 8 \times (2 + 4)$
- B. Answers may vary. Possible answer: $8 \times (2 + 4) = (8 \times 2) + (8 \times 4) = 16 + 32 = 48$

Lesson Practice Part 2

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

8. C
9. A
10. B
11. A. Possible answer: $(4 \times 9) + (4 \times 9)$
B. 72

Lesson 14

Coached Example

Find 30 groups of 5.

So, find 30×5 .Think: $3 \times 5 = 15$ **3 ones \times 5 = 15 ones = 15****3 tens \times 5 = 15 tens = 150**Rachel bagged **150** treats in all.

Lesson Practice Part 1

1. C
2. C
3. D
4. A
5. D
6. B
7. C
8. B
9. A. $4 \times 9 = 36$
B. 360 words; 9×4 ones = 36 ones = 36;
 9×4 tens = 36 tens = 360

Lesson Practice Part 2

1. C
2. A
3. C
4. B
5. B
6. D
7. C
8. D
9. A
10. B
11. A. $8 \times 6 = 48$
B. Possible answers: $6 \times 8 = 48$
C. They spent the same amount of time. Possible explanation: The factors in the basic facts are the same. The order of the factors does not change a product.

Lesson 15

Coached Example

$$(6 \times 2) \times 3 = 6 \times (2 \times 3)$$

$$(2 \times 3) = 6$$

$$6 \times 6 = 36$$

$$(6 \times 2) \times 3 = 36$$

Lesson Practice Part 1

1. A
2. D
3. D
4. C
5. B
6. D
7. A
8. D
9. A. $4 \times (3 \times 2)$
B. $4 \times (3 \times 2) = 4 \times 6 = 24$

Lesson Practice Part 2

1. D
2. A
3. B
4. C
5. D
6. C
7. A
8. A
9. D
10. A
11. A. Possible answer: $2 \times 4 \times 6 = \square$
B. 48; Possible explanation: I multiplied $2 \times 4 = 8$ and then I multiplied $8 \times 6 = 48$.

Lesson 16

Coached Example

How many equal groups of hats are there? **4**How many hats are in each group? **6**How many hats are there in all? **24**

$$4 \times 6 = 24$$

$$6 \times 4 = 24$$

$$24 \div 6 = 4$$

$$24 \div 4 = 6$$

Lesson Practice Part 1

1. C
2. B
3. A

Answer Keys (continued)

4. D
5. A
6. C
7. D
8. A
9. A. $18 \div 3 = 6$ and $18 \div 6 = 3$
B. $3 \times 6 = 18$ and $6 \times 3 = 18$

Lesson Practice Part 2

1. C
2. B
3. C
4. D
5. B
6. C
7. A
8. B
9. A. $40 \div 5 = 8$ and $40 \div 8 = 5$
B. $8 \times 5 = 40$ and $5 \times 8 = 40$
C. Possible answer: Fact families allow you to know 2 multiplication facts and 2 division facts by remembering just 1 fact.

Lesson 17

Coached Example

How many rows? **3**

How many dots in each row? **6**

How many dots in all? **18**

$$18 \div 3 = 6$$

$$18 \div 6 = 3$$

Lesson Practice Part 1

1. D
2. B
3. D
4. C
5. B
6. A
7. B
8. C
9. A. $32 \div 8 = 4$; $32 - 8 = 24$, $24 - 8 = 16$,
 $16 - 8 = 8$, $8 - 8 = 0$
B. $8 \times 4 = 32$ and $4 \times 8 = 32$

Lesson Practice Part 2

1. C
2. A
3. B
4. A
5. B
6. D
7. C
8. D
9. D
10. A
11. A. $7 \times 9 = 63$ and $9 \times 7 = 63$
B. $63 \div 7 = 9$ and $63 \div 9 = 7$

Lesson 18

Coached Example

You know a dozen flowers costs \$28 and a plant costs \$7.

$$28 \div 7 = \square$$

$$28 \div 7 = 4.$$

A dozen flowers costs **4** times as much as a plant.

Lesson Practice Part 1

1. B
2. C
3. B
4. B
5. A
6. D
7. A
8. D
9. A. Students' drawings should show 4 groups of 10 cookies each.
B. $40 \div 4 = \square$
C. 10 cookies

Lesson Practice Part 2

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

11. A. Neil; Possible explanation: Neil has fewer shelves, so there will be a greater number of model cars on each shelf.
 B. 2; Possible explanation: $12 \div 3 = 4$ and if Neil has to use 2 shelves, I divide $12 \div 2 = 6$ and $6 - 4 = 2$.

Domain 2: Cumulative Assessment for Lessons 9–18

1. B MGSE3.OA.1
2. D MGSE3.OA.3
3. B MGSE3.OA.4
4. B MGSE3.OA.6, MGSE3.OA.7
5. A MGSE3.OA.8
6. B MGSE3.OA.9
7. B MGSE3.OA.2
8. C MGSE3.OA.6
9. 240 MGSE3.NBT.3
10. A. Students' drawings should represent 8 bookshelves with 7 books on each shelf.
 B. $8 \times 7 = \square$
 C. 56 books
 MGSE3.OA.1, MGSE3.OA.3, MGSE3.OA.4, MGSE3.OA.9

Domain 3

Lesson 19

Coached Example

How many equal parts make up the figure? **8**

This is the **denominator** of the fraction.

How many parts of the figure are shaded? **3**

This is the **numerator** of the fraction.

$$\frac{3}{8}$$

So, $\frac{3}{8}$ of the sandwich was eaten.

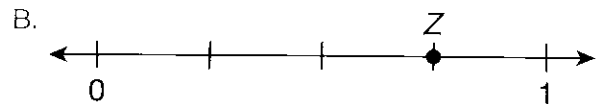
Lesson Practice Part 1

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

9. A. Students' drawings should show 3 sections shaded.
 B. Students' number lines should show point *R* located at $\frac{3}{8}$.

Lesson Practice Part 2

1. A
2. D
3. C
4. B
5. D
6. C
7. A
8. A. Possible answer: The circle would be divided into 4 equal sections. Three of the sections would be shaded.



Lesson 20

Coached Example

How many equal parts are in the square? **4**

How many equal parts are shaded? **4**

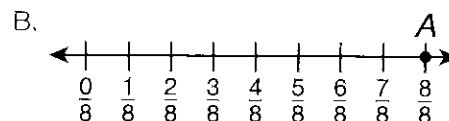
What fraction does the square show? $\frac{4}{4}$

What whole number does the square show? $\frac{4}{4} = 1$

The fraction is $\frac{4}{4}$ and the whole number is **1**.

Lesson Practice Part 1

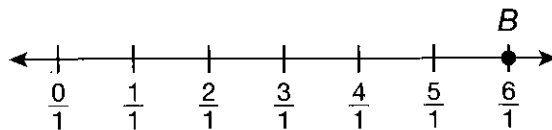
1. C
2. A
3. B
4. C
5. D
6. B
7. B
8. A
9. A. Students should shade all 8 parts of the rectangle.



Lesson Practice Part 2

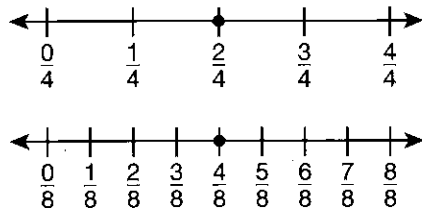
1. A
2. C
3. C

4. B
5. D
6. B
7. A
8. A
9. A. Possible answer: There would be 6 circles that are all shaded.
- B. Possible answer:



Lesson 21

Coached Example



Are $\frac{2}{4}$ and $\frac{4}{8}$ at the same point on the number line? **yes**

Evan is **correct**.

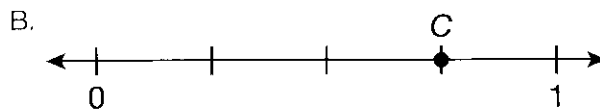
$\frac{2}{4}$ and $\frac{4}{8}$ **are** equivalent fractions.

Lesson Practice Part 1

1. B
2. C
3. C
4. D
5. A
6. A. $\frac{2}{3}$ and $\frac{4}{6}$
- B. Students should label each number line, and draw points at $\frac{2}{3}$ and $\frac{4}{6}$.

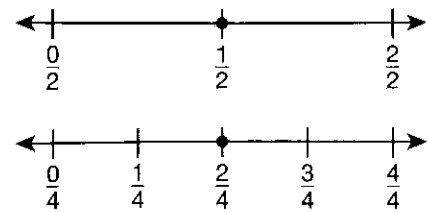
Lesson Practice Part 2

1. C
2. B
3. B
4. A
5. A. $\frac{1}{4}$



Lesson 22

Coached Example



The fraction farther to the right is the **greater** fraction.

So, $\frac{1}{2} > \frac{1}{4}$.

Callie shaded more of the circle than **Will**.

Lesson Practice Part 1

1. D
 2. A
 3. A
 4. C
 5. C
 6. A
 7. A. Students should circle $\frac{5}{6}$ and $\frac{5}{8}$ on their respective number lines.
 - B. Brenda; Possible explanation: The numerators are the same. So I looked at the denominators. The lesser denominator is the greater fraction.
- $$\frac{5}{6} > \frac{5}{8}$$

Lesson Practice Part 2

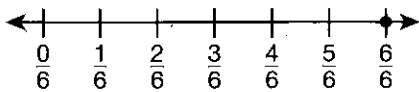
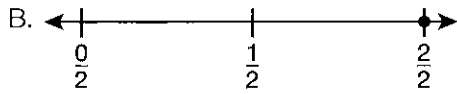
1. D
2. D
3. A
4. B
5. A
6. B
7. C
8. A. Ana; Possible explanation: If the fractions have the same numerator, the greater fraction is the one with the lesser denominator.
- B. Carla; Possible explanation: If the fractions have the same denominator, the greater fraction is the one with the greater numerator.
- C. Carla; Possible explanation: Because $\frac{1}{3} = \frac{2}{6}$ and $\frac{2}{6} < \frac{3}{6}$; Carla saved more money.

Domain 3: Cumulative Assessment for Lessons 19–22

1. A MGSE3.NF.2a
2. D MGSE3.NF.3a, MGSE3.NF.3b
3. C MGSE3.NF.1
4. A MGSE3.NF.3c
5. B MGSE3.NF.3d
6. A MGSE3.NF.3a, MGSE3.NF.3b
7. A MGSE3.NF.3d
8. C MGSE3.NF.3c
9. Students' drawings should show point C plotted at $\frac{5}{8}$ on the number line.

MGSE3.NF.1, MGSE3.NF.2a

10. A. $\frac{2}{2}$ and $\frac{6}{6}$



MGSE3.NF.2b, MGSE3.NF.3a, MGSE3.NF.3b

Domain 4

Lesson 23

Coached Example

7:10 A.M. is **10** minutes after 7, so make a point at **10** minutes.

7:55 A.M. is **55** minutes after 7, so make another point at **55** minutes.

Students' number lines should show points at 10 and 55.

55 minutes – 10 minutes = **45** minutes

Alyssa has **45** minutes to get ready before the bus arrives.

Lesson Practice Part 1

1. B
2. B
3. D
4. C
5. A
6. A
7. D
8. A. 1:02 P.M.
B. 45 minutes

Lesson Practice Part 2

1. C
2. B
3. A
4. A
5. D
6. D
7. A
8. A. 7:20 A.M.
B. 7:45

Lesson 24

Coached Example

The watermelon was cut into **5** equal pieces.

To find the mass of each piece, use **division**.

Find $20 \div 5 = \square$.

Divide.

$20 \div 5 = 4$

The mass of each piece is **4** kilograms.

Lesson Practice Part 1

1. B
2. B
3. A
4. B
5. C
6. D
7. A
8. A. 5 kilograms; $8 - 3 = 5$ kilograms
B. 12 kilograms; $8 + 4 = 12$ kilograms

Lesson Practice Part 2

1. B
2. C
3. A
4. A
5. D
6. D
7. C
8. C
9. A. grams
B. Possible answer: A teddy bear has less mass than a pair of sneakers, which has a mass of 1 kilogram. Because 1 kilogram is equal to 1,000 grams, the teddy bear must be less than 1 kilogram.

Lesson 25

Coached Example

$$258 - 65 = \square$$

Find the difference.

$$\begin{array}{r} 115 \\ \cancel{258} \\ - 65 \\ \hline 193 \end{array}$$

Use addition to check your answer.

$$\begin{array}{r} 1 \\ 193 \\ + 65 \\ \hline 258 \end{array}$$

The fish tank has **193** liters of water left.

Lesson Practice Part 1

1. D
2. C
3. D
4. A
5. D
6. A
7. B
8. C
9. A. 20 liters; $10 \times 2 = 20$
B. 4 liters; $20 \div 5 = 4$

Lesson Practice Part 2

1. A
2. B
3. D
4. B
5. D
6. C
7. A
8. A
9. C
10. A. 910; Possible work: $625 + 285 = 910$.
B. 340; Possible work: $625 - 285 = 340$.

Lesson 26

Coached Example

The rectangle has **4** sides.

Two sides of the rectangle are **7** inches long.

The other two sides of the rectangle are **3** inches long.

Add the measurements.

$$7 + 7 + 3 + 3 = 20$$

The perimeter of the rectangle is **20** inches.

Lesson Practice Part 1

1. C
2. A
3. A
4. C
5. C
6. D
7. B
8. A
9. A. 12 meters; $4 + 4 + 2 + 2 = 12$
B. 3 meters; Explanations may vary. Possible explanation: I used the number sentence $4 \times \square = 12$ meters to find the length of one side. I used the multiplication fact $4 \times 3 = 12$ to solve the number sentence. Each side is 3 meters long.

Lesson Practice Part 2

1. D
2. C
3. A
4. A
5. C
6. B
7. A
8. D
9. A. Check students drawings. Possible answers: 5 in. by 3 in., 7 in. by 1 in.
B. Students squares should be 4 inches on all sides.

Lesson 27

Coached Example

There are **5** rows of shaded squares.

Each row has **6** shaded squares.

$$5 \times 6 = 30$$

What are the units for the area? **square meters**

The area of the shaded figure is **30** square meters.

Lesson Practice Part 1

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

7. A. 56 square inches
 B. Explanations may vary. Possible explanation:
 I counted the number of shaded squares in
 the rectangle.

Lesson Practice Part 2

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

- B. 3 square inches; Possible work:
 $(7 \times 5) - (8 \times 4) = 35 - 32 = 3$

Lesson 28

Coached Example

Draw and shade a rectangle on the grid to represent
 the kitchen floor.

**Check students' drawings. Students should draw
 and shade a 4 unit by 5 unit rectangle on the grid.**

How many squares did you shade? **20**

You need to multiply the **length** times the **width**.

$$5 \times 4 = 20$$

The units for the area of the floor are **square meters**.

Angelo needs **20** square meters of flooring.

Lesson Practice Part 1

1. C
2. B
3. B
4. C
5. C
6. B
7. A. 60 square inches;
 $12 + 12 + 12 + 12 + 12 = 60$ square inches
 B. 60 square inches;
 $12 \times 5 = (10 + 2) \times 5 = (10 \times 5) + (2 \times 5)$
 $= 50 + 10 = 60$

Lesson Practice Part 2

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

7. A. 40
 B. Possible explanation: I split the H into three
 rectangles. Two of the rectangles are 8 meters
 by 2 meters and the third rectangle is 4 meters
 by 2 meters. Because $2 \times 8 \times 2 + 4 \times 2 =$
 $(2 \times 2) \times 8 + (4 \times 2) = 4 \times 8 + 4 \times 2 = 4 \times$
 $(8 + 2) = 4 \times 10 = 40$, the area is
 40 square meters.

Lesson 29

Coached Example

It has a length of **5** feet and a width of **2** feet.

$$5 + 2 + 5 + 2 = 14 \text{ feet}$$

$$5 \text{ feet} \times 2 \text{ feet} = 10 \text{ square feet}$$

Make a rectangle with the same perimeter but with a
 different area.

**Rectangles may vary. Possible rectangles:
 4 feet \times 3 feet; 1 foot \times 6 feet; 3 feet \times 4 feet**

Check that the area is different.

Your rectangle has a length of **4** feet and a width
 of **3** feet.

$$4 \text{ feet} \times 3 \text{ feet} = 12 \text{ square feet}$$

A rectangle with the same perimeter but different area
 than Mark's poster has a length of **4** feet and a width of
3 feet.

Lesson Practice Part 1

1. A
2. C
3. A
4. C
5. A. Check students' answers. Drawings may vary.
 Possible rectangles:
 4 units \times 9 units; 6 units \times 6 units
 B. Answers may vary. Possible answer:
 One garden is 4 meters \times 9 meters with a
 perimeter of 26 meters. Another garden is
 6 meters \times 6 meters with a perimeter of
 24 meters.

Lesson Practice Part 2

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

5. A. Possible answer: 5 inches and 2 inches:
 $5 \times 2 = 10$ square inches and 4 inches and 3 inches:
 $4 \times 3 = 12$ square inches
- B. Possible answer: 6 inches and 5 inches:
 $6 + 5 + 6 + 5 = 22$ inches and 10 inches and 3 inches:
 $10 + 3 + 10 + 3 = 26$ inches

Lesson 30

Coached Example

There are **2** symbols for October 4.

There are **6** symbols for October 6.

There are **4** more symbols for October 6 than for October 4.

Each symbol represents **5** minutes.

Multiply the number of symbols by the number of minutes each symbol represents.





$4 \times 5 = 20$


Vera practiced **20** more minutes on October 6 than on October 4.

Lesson Practice Part 1

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

Animals at a Zoo

Bears	
Elephants	
Giraffes	
Tigers	

Key: Each  = 2 animals





B. 2

Lesson Practice Part 2

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

9. A. Possible picture graph:

Raffle Tickets Sold

Tom	
Gina	
Ron	
Muna	

Key: Each  = 4 tickets

- B. Possible answer: A picture graph is better because fewer symbols are needed to show the same data. This makes the picture graph easier to read.

Lesson 31

Coached Example

Find the number of votes for Bulldogs.

The bar lines up with **40**.

Find the number of votes for Lions.

The bar lines up with **15**.

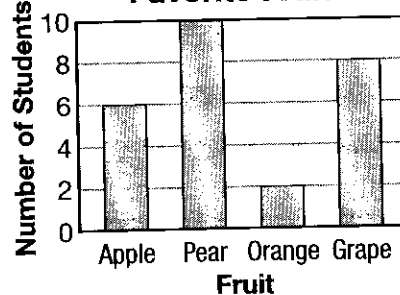
$40 - 15 = 25$

So, **25** more students voted for Bulldogs than for Lions.

Lesson Practice Part 1

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

Favorite Fruits

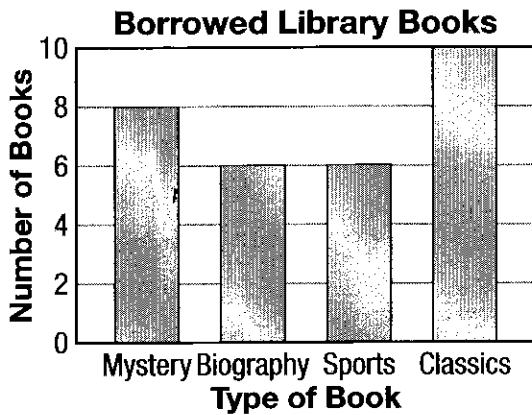


B. 4

Lesson Practice Part 2

1. B
2. C
3. B
4. C

5. D
6. B
7. A. Possible picture graph:



B. Possible answer: A bar graph is better because it is not necessary to multiply to find the number of each type of book borrowed.

Lesson 32

Coached Example

The number line is labeled from 0 to 10.

What are the units of the numbers? **centimeters**

What does each mark represent? **1 centimeters**

The point is on the **6th** mark after the 0 mark.

So the point is on **6** centimeters.

The length of the worm is **6** centimeters.

Lesson Practice Part 1

1. C
2. C
3. B
4. B
5. D
6. C
7. A. $3\frac{1}{2}$ inches

B. 9 cm

Lesson Practice Part 2

1. C
2. B
3. B
4. C
5. D
6. A. $5\frac{1}{2}$
- B. $5\frac{3}{4}$
- C. 14

Lesson 33

Coached Example

The number line shows the lengths in **inches**.

The Xs represent the number of **buttons**.

Count the number of Xs above the fraction $\frac{2}{4}$ on the number line.

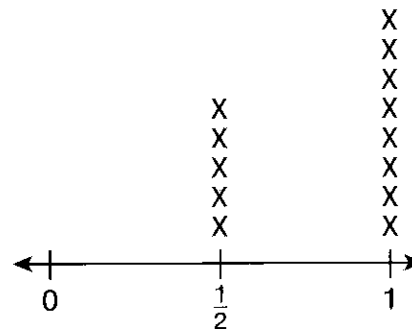
There are **4** Xs above $\frac{2}{4}$ inch.

So, **4** buttons are $\frac{2}{4}$ inch long.

Lesson Practice Part 1

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

Flower Petal Lengths



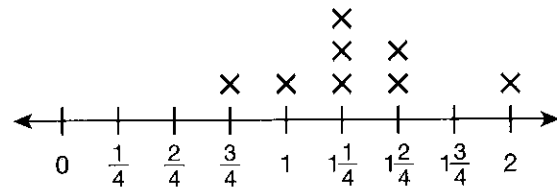
Inches

B. $3; 8 - 5 = 3$

Lesson Practice Part 2

1. A
2. C
3. A. Possible line plot:

Side Length



Inches

B. Possible answer: I can organize data by placing an X each time a value occurs. After I collect the data, I can give the line plot a title and name the units and it is ready to display.

Domain 4: Cumulative Assessment for Lessons 23–33

1. D MGSE3.MD.1
2. C MGSE3.MD.2
3. B MGSE3.MD.8
4. B MGSE3.MD.5a, MGSE3.MD.5b, MGSE3.MD.6
5. D MGSE3.MD.7a, MGSE3.MD.7b, MGSE3.MD.7c
6. B MGSE3.MD.3
7. C MGSE3.MD.2
8. C MGSE3.MD.7b
9. 3 MGSE3.MD.4
10. A. Check students' answers. Drawings may vary. Possible rectangles may be 4 inches by 5 inches and 3 inches by 6 inches.
B. Answers may vary. Possible answer: One rectangle is 4 inches \times 5 inches with an area of 20 square inches. Another rectangle is 3 inches \times 6 inches with an area of 18 square inches.
MGSE3.MD.8

Domain 5

Lesson 34

Coached Example

An octagon has **8** sides and **8** angles.

Shape A has **0** sides and **0** angles.

Shape B has **6** sides and **6** angles.

Shape C has **8** sides and **8** angles.

Shape D has **4** sides and **4** angles.

Shape **C** is an octagon.

Lesson Practice Part 1

1. C
2. C
3. A
4. C
5. D
6. A
7. B
8. A. The STOP sign has 8 sides and 8 angles. It is an octagon. The YIELD sign has 3 sides and 3 angles. It is a triangle.
B. The STOP sign has more sides. It has 5 more sides than the YIELD sign, which has 3 sides.

Lesson Practice Part 2

1. A
2. D
3. B
4. C
5. A
6. C
7. B
8. A. Both shapes are two-dimensional. Possible explanation: Both shapes have length and width.
B. Only shape B is a polygon. Possible explanation: A polygon is made from straight sides. Shape B has straight sides, but shape A is made from a curve. Shape A is not a polygon.

Lesson 35

Coached Example

Think about a rectangle.

A rectangle has **4** sides and **4** square corners.

The opposite sides of a rectangle have the **same** length.

Both pairs of opposite sides of a rectangle are **parallel**.

A square is a special rectangle with **4 equal** sides.

Shape **F** and Shape **G** have 4 square corners.

Only Shape **F** does not have equal sides.

Shape **F** is a rectangle but is not a square.

Lesson Practice Part 1

1. A
2. B
3. D
4. D
5. C
6. D
7. A
8. A. Check students' answers. Students should draw two trapezoids and a rectangle.
B. There are 2 trapezoids and 1 rectangle.

Lesson Practice Part 2

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

9. A. parallelogram
 B. parallelogram, rectangle, rhombus, square
 C. Possible answer: The quadrilaterals are alike because they both have 2 pairs of opposite sides parallel, so they are parallelograms. Quadrilateral B has all sides equal and the angles all form square corners. Quadrilateral A does not have all sides equal and none of its angles form square corners.

Lesson 36

Coached Example

Draw a rectangle. Make 3 equal parts.

Shade one part.

Check students' answers. Students should shade 1 part of the rectangle.

Find the denominator of the fraction.

How many equal parts are there? **3**

Find the numerator of the fraction.

How many shaded parts are there? **1**

What fraction names the shaded part of the rectangle? $\frac{1}{3}$

The fraction $\frac{1}{3}$ describes the area of the wall that is painted blue.

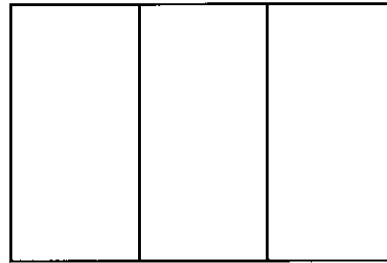
Lesson Practice Part 1

1. B
2. D
3. B
4. B
5. A
6. C
7. A. 100 square feet
 B. $\frac{1}{2}$

Lesson Practice Part 2

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

7. A. Possible drawing:



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

C. 8; Possible work: $24 \div 3 = 8$.

Domain 5: Cumulative Assessment for Lessons 34–36

1. A MGSE3.G.1
2. D MGSE3.G.1
3. C MGSE3.G.1
4. C MGSE3.G.2
5. D MGSE3.G.1
6. A MGSE3.G.1
7. C MGSE3.G.2
8. D MGSE3.G.2
9. $\frac{1}{6}$ MGSE3.G.2
10. A. Answers may vary: rectangle and rhombus.
 B. $\frac{1}{2}$; Answers may vary. Possible answer: There are 2 equal parts. One part is shaded. The fraction that describes the shaded area of the square is $\frac{1}{2}$.
 MGSE3.G.1, MGSE3.G.2

Posttest: Practice Assessment 2

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

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

Item Number	Standard(s)	DOK
Section 2		
31	MGSE.3.G.2	1
32	MGSE.3.NBT.3	2
33	MGSE.3.NBT.2	2
34	MGSE.3.NBT.3	3
35	MGSE.3.NF.1	1
36	MGSE.3.NF.3b	3
37	MGSE.3.MD.1	2
38	MGSE.3.G.1	2
39	MGSE.3.MD.7a	2
40	MGSE.3.MD.2	1
41	MGSE.3.MD.7c	3
42	MGSE.3.G.1	2
43	MGSE.3.NF.1	2
44	MGSE.3.OA.4	2
45	MGSE.3.MD.8	2
46	MGSE.3.NBT.2	2
47	MGSE.3.MD.3	2
48	MGSE.3.G.2	2
49	MGSE.3.NF.2b	2
50	MGSE.3.NF.3c	2
51	MGSE.3.NF.3d	3
52	MGSE.3.OA.5	2
53	MGSE.3.NF.3a	2
54	MGSE.3.OA.5	2
55	MGSE.3.MD.1	2
56	MGSE.3.MD.5	2
57	MGSE.3.OA.7	2
58	MGSE.3.G.1	3
59	MGSE.3.NF.3d	1
60	MGSE.3.G.2	3
61	MGSE.3.MD.7b	3
62	MGSE.3.NBT.2	2
63	MGSE.3.OA.8	3
64	MGSE.3.MD.3	2

Answer Key**Section 1**

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

Item-Specific Scoring Guidelines and Rubrics

Item 28

Scoring Rubric

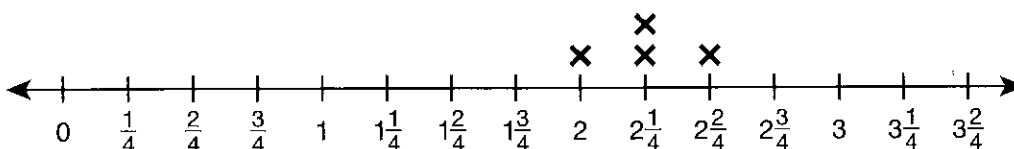
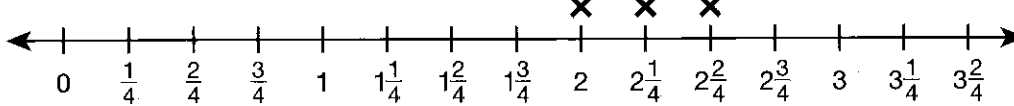
Points	Description
2	<p>The response achieves the following:</p> <ul style="list-style-type: none"> A score of 2 demonstrates a complete understanding of writing equations that involve multiplication and subtraction and solving the equations. Student determines that the correct answer for Part A is choice B. <p>AND</p> <ul style="list-style-type: none"> Student determines that the correct answer for Part B is choice C.
1	<p>The response achieves the following:</p> <ul style="list-style-type: none"> A score of 1 demonstrates a partial understanding of writing equations that involve multiplication and subtraction and solving the equations. Student determines that the correct answer for Part A is choice B. <p>OR</p> <ul style="list-style-type: none"> Student determines that the correct answer for Part B is choice C.
0	<p>The response achieves the following:</p> <ul style="list-style-type: none"> A score of 0 demonstrates limited to no understanding of writing equations that involve multiplication and subtraction and solving the equations.

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 generating measurement data by measuring lengths using rulers marked with halves and fourths and showing data by making a line plot.
1	<p>The response achieves the following:</p> <ul style="list-style-type: none"> A score of 1 demonstrates a partial understanding of generating measurement data by measuring lengths using rulers marked with halves and fourths and showing data by making a line plot. Give 1 point if the student's line plot is correct OR if the student's explanation is coherent and complete.
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 measurement data by measuring lengths using rulers marked with halves and fourths and showing data by making a line plot.

Exemplar Response:

Points Awarded	Response
2	 <p><i>I measured the plants with a ruler. I made a number line from 0 to $3\frac{2}{4}$, showing quarter-inches. Then I made an X above the measurement for each plant.</i></p>
1	 <p><i>OR</i> <i>I measured the plants with a ruler. I made a number line from 0 to $3\frac{2}{4}$, showing quarter-inches. Then I made an X above the measurement for each plant.</i></p>
0	<i>Response is irrelevant, inappropriate, or not provided.</i>

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 the concept of fractional parts and can use this concept to compare fractions.
3	The response achieves the following: <ul style="list-style-type: none"> A score of 3 demonstrates that the student mostly understands the concept of fractional parts and can mostly use this concept to compare fractions.
2	The response achieves the following: <ul style="list-style-type: none"> A score of 2 demonstrates that the student somewhat understands the concept of fractional parts and can somewhat use this concept to compare fractions.
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 the concept of fractional parts and has a limited ability to use this concept to compare fractions.
0	The response achieves the following: <ul style="list-style-type: none"> A score of 0 demonstrates that the student has no understanding of the concept of fractional parts and cannot use this concept to compare fractions.

Exemplar Response:

Points Awarded	Response
4	<p>Part A: $\frac{2}{5}, \frac{2}{8}$</p> <p>AND</p> <p>Part B: Sample answer: The first circle has 5 equal parts, so the denominator of its fraction is 5. Two of the parts are shaded, so the numerator is 2. The second circle has 8 equal parts, so the denominator of its fraction is 8. Two of the parts are shaded, so its numerator is also 2.</p> <p>AND</p> <p>Part C: $\frac{2}{5} > \frac{2}{8}$ or $\frac{2}{8} < \frac{2}{5}$</p> <p>AND</p> <p>Part D: Sample answer: Since the numerators are the same, I compared the denominators. I can see that fifths are bigger than eighths, so 2 fifths is greater than 2 eighths.</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.

Item 45

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 finding the unknown length of a side of a polygon when the perimeter and other side lengths are known.
1	<p>The response achieves the following:</p> <ul style="list-style-type: none"> A score of 1 demonstrates a partial understanding of finding the unknown length of a side of a polygon when the perimeter and other side lengths are known.
0	<p>The response achieves the following:</p> <ul style="list-style-type: none"> A score of 0 demonstrates limited to no understanding of finding the unknown length of a side of a polygon when the perimeter and other side lengths are known.

Exemplar Response:

Points Awarded	Response
2	<p>31 m</p> <p>AND</p> <p><i>Perimeter is the distance around the figure. So I can subtract the lengths of the three known sides from the perimeter to find the length of side x.</i></p> <p>$98 - (26 + 22 + 19) = x$ I wrote an equation for the length of side x. $98 - 67 = x$ I added to find the total length of the known sides. $31 = x$ I subtracted to find the length of x.</p> <p>OR other valid explanation</p>
1	<p>31 m</p> <p>AND</p> <p><i>Perimeter is the distance around the figure. So I can subtract the lengths of the three known sides from the perimeter to find the length of side x.</i></p> <p>$98 - (26 + 22 + 19) = x$ I wrote an equation for the length of side x. $98 - 67 = x$ I added to find the total length of the known sides. $31 = x$ I subtracted to find the length of x.</p> <p>OR other valid explanation</p>
0	Response is irrelevant, inappropriate, or not provided.