



Answer Key

GRADE 5 • MODULE 5

Addition and Multiplication with Volume and Area

Lesson 1

Problem Set

- Explanations will vary.
 - 1 cm^3
 - 5 cm^3
 - 9 cm^3
 - 9 cm^3
 - 12 cm^3
 - 20 cm^3
- Answers will vary.
- Explanations will vary.
 - 10 cm^3 ; explanations will vary.

Exit Ticket

- 5 cm^3
 - 12 cm^3
- Answers will vary.

Homework

- Explanations will vary
 - 2 cm^3
 - 4 cm^3
 - 6 cm^3
 - 6 cm^3
 - 12 cm^3
 - 16 cm^3
- Answers will vary.
- A cube is hidden under the second layer, explanations will vary.
- Answers will vary.

Lesson 2

Problem Set

- 8
 - 16
 - 48
- Predictions will vary; 8 cm^3
 - Predictions will vary; 16 cm^3
 - Predictions will vary; 40 cm^3
- Answers will vary.

Exit Ticket

- 8
- Predictions will vary; 12 cm^3

Homework

- Explanations will vary.
 - 4
 - 12
 - 24
- 6
 - 12
 - 32
- Answers will vary.

Lesson 3

Sprint

Side A

- | | | | |
|--------------|---------------------|---------------------|------------------------|
| 1. 2 fifths | 12. 2 | 23. 60 sixths or 10 | 34. 90 sixths or 15 |
| 2. 3 fifths | 13. 4 halves or 2 | 24. 15 thirds or 5 | 35. 24 fourths or 6 |
| 3. 4 fifths | 14. 2 | 25. 30 thirds or 10 | 36. 72 fourths or 18 |
| 4. 4 fifths | 15. 6 thirds or 2 | 26. 30 thirds or 10 | 37. 32 eighths or 4 |
| 5. 3 eighths | 16. 2 | 27. 15 fifths or 3 | 38. 96 eighths or 12 |
| 6. 5 eighths | 17. 10 fifths or 2 | 28. 30 fifths or 6 | 39. 160 eighths or 20 |
| 7. 7 eighths | 18. 9 thirds or 3 | 29. 60 fifths or 12 | 40. 224 eighths or 28 |
| 8. 7 eighths | 19. 18 thirds or 6 | 30. 45 fifths or 9 | 41. 270 ninths or 30 |
| 9. 3 tenths | 20. 8 fourths or 2 | 31. 45 fifths or 9 | 42. 441 ninths or 49 |
| 10. 7 tenths | 21. 24 fourths or 6 | 32. 18 sixths or 3 | 43. 168 sevenths or 24 |
| 11. 7 tenths | 22. 12 sixths or 2 | 33. 90 sixths or 15 | 44. 294 sevenths or 42 |

Side B

- | | | | |
|---------------|---------------------|----------------------|------------------------|
| 1. 2 sevenths | 12. 2 | 23. 24 fourths or 6 | 34. 120 sixths or 20 |
| 2. 3 sevenths | 13. 10 fifths or 2 | 24. 15 fifths or 3 | 35. 20 fourths or 5 |
| 3. 4 sevenths | 14. 3 | 25. 30 fifths or 6 | 36. 60 fourths or 15 |
| 4. 4 sevenths | 15. 9 thirds or 3 | 26. 60 fifths or 12 | 37. 24 eighths or 3 |
| 5. 3 tenths | 16. 5 | 27. 45 fifths or 9 | 38. 72 eighths or 9 |
| 6. 7 tenths | 17. 10 halves or 5 | 28. 45 fifths or 9 | 39. 120 eighths or 15 |
| 7. 9 tenths | 18. 6 thirds or 2 | 29. 15 thirds or 5 | 40. 168 eighths or 21 |
| 8. 9 tenths | 19. 12 thirds or 4 | 30. 30 thirds or 10 | 41. 315 ninths or 35 |
| 9. 3 eighths | 20. 12 sixths or 2 | 31. 30 thirds or 10 | 42. 378 ninths or 42 |
| 10. 5 eighths | 21. 60 sixths or 10 | 32. 24 sixths or 4 | 43. 147 sevenths or 21 |
| 11. 5 eighths | 22. 8 fourths or 2 | 33. 120 sixths or 20 | 44. 336 sevenths or 48 |

Problem Set

1. Answers will vary.
2. Jonah is correct; explanations will vary.
3. 50 in^3 ; 100 in^3 ; 175 in^3 ; explanations will vary.
4. 4; 12; 48 m^3

Exit Ticket

1. 2; 6; 12
2. 24

Homework

1. Answers will vary.
2. Explanations will vary.
3. 48 in^3 ; 80 in^3 ; 112 in^3 ; explanations will vary.
4. 4; 6; 24 m^3

Lesson 4

Problem Set

- 5; 2; 2; 20
 - 3; 2; 4; 24
 - 4; 2; 4; 32
 - 4; 3; 3; 36
- $5 \text{ cm} \times 2 \text{ cm} \times 2 \text{ cm} = 20 \text{ cm}^3$ (or variant)
 - $3 \text{ cm} \times 2 \text{ cm} \times 4 \text{ cm} = 24 \text{ cm}^3$ (or variant)
 - $4 \text{ cm} \times 2 \text{ cm} \times 4 \text{ cm} = 32 \text{ cm}^3$ (or variant)
 - $4 \text{ cm} \times 3 \text{ cm} \times 3 \text{ cm} = 36 \text{ cm}^3$ (or variant)
- 48 in^3
 - 36 m^3
- 560 cm^3
- Explanations will vary.
 - 300 cm^3
 - 240 in^3

Exit Ticket

- 2; 2; 4; 16; $2 \text{ mm} \times 2 \text{ mm} \times 4 \text{ mm} = 16 \text{ mm}^3$ (or variant)
- 100 ft^3

Homework

- 5; 2; 4; 40
 - 3; 2; 5; 30
 - 4; 2; 4; 32
 - 8; 3; 3; 72
- $5 \text{ cm} \times 2 \text{ cm} \times 4 \text{ cm} = 40 \text{ cm}^3$ (or variant)
 - $3 \text{ cm} \times 2 \text{ cm} \times 5 \text{ cm} = 30 \text{ cm}^3$ (or variant)
 - $4 \text{ cm} \times 2 \text{ cm} \times 4 \text{ cm} = 32 \text{ cm}^3$ (or variant)
 - $8 \text{ cm} \times 3 \text{ cm} \times 3 \text{ cm} = 72 \text{ cm}^3$ (or variant)
- 256 in^3
 - 210 m^3
- $20,160 \text{ in}^3$
- 224 m^3
 - $2,366 \text{ in}^3$

Lesson 5

Problem Set

- 1, 32, 4 cm, 4 cm, 2 cm, 32 cm³;
2, 20, 2 cm, 5 cm, 2 cm, 20 cm³
- 1, 32; 2, 20
- 4; 5; 6
- 1 cm³ = 1 mL, explanations will vary.
- No, the beaker holds 40 mL less than the cube.
- a. 7,800 mL
b. 7.8 L
c. 1,560 mL; explanations will vary.
- 2 cm

Exit Ticket

- 225 cm³
- Beaker shaded to line between 200 mL and 250 mL

Homework

- Beaker shaded to line between 20 mL and 40 mL; explanations will vary.
- A; C; explanations will vary.
- Answers will vary.

Lesson 6

Problem Set

- 420 cm^3 ; strategies will vary.
 - 444 in^3 ; strategies will vary.
 - 108 cm^3 ; strategies will vary.
 - 324 m^3 ; strategies will vary.
- $3,840 \text{ in}^3$
- 4 cm
- 120 cm^3 or 120 mL
- A: 144 ft^3 ; B: 288 ft^3
 - 6 ft
 - 18 ft

Exit Ticket

303 in^3

Homework

- 72 in^3 ; strategies will vary.
 - $1,431 \text{ cm}^3$; strategies will vary.
 - 369 mm^3 ; strategies will vary.
 - 472 m^3
- $2,124 \text{ in}^3$
- 5 cm
- 585 cm^3 or 585 mL
- A: 74 ft^3 ; B and C: 222 ft^3

Lesson 7

Sprint

Side A

- | | | | | | | | |
|-----|----------------|-----|-----------------|-----|-----------------|-----|-----------------|
| 1. | $\frac{1}{4}$ | 12. | $\frac{4}{15}$ | 23. | $\frac{10}{15}$ | 34. | $\frac{15}{20}$ |
| 2. | $\frac{1}{6}$ | 13. | $\frac{1}{12}$ | 24. | $\frac{15}{10}$ | 35. | $\frac{18}{20}$ |
| 3. | $\frac{1}{8}$ | 14. | $\frac{2}{12}$ | 25. | $\frac{1}{9}$ | 36. | $\frac{6}{20}$ |
| 4. | $\frac{1}{14}$ | 15. | $\frac{6}{12}$ | 26. | $\frac{2}{9}$ | 37. | $\frac{1}{49}$ |
| 5. | $\frac{1}{14}$ | 16. | $\frac{1}{18}$ | 27. | $\frac{4}{9}$ | 38. | $\frac{3}{40}$ |
| 6. | $\frac{1}{6}$ | 17. | $\frac{5}{18}$ | 28. | $\frac{6}{6}$ | 39. | $\frac{5}{24}$ |
| 7. | $\frac{1}{9}$ | 18. | $\frac{10}{18}$ | 29. | $\frac{8}{9}$ | 40. | $\frac{9}{16}$ |
| 8. | $\frac{1}{18}$ | 19. | $\frac{10}{12}$ | 30. | $\frac{10}{9}$ | 41. | $\frac{12}{18}$ |
| 9. | $\frac{1}{15}$ | 20. | $\frac{1}{25}$ | 31. | $\frac{9}{10}$ | 42. | $\frac{18}{8}$ |
| 10. | $\frac{1}{15}$ | 21. | $\frac{4}{25}$ | 32. | $\frac{3}{20}$ | 43. | $\frac{49}{72}$ |
| 11. | $\frac{2}{15}$ | 22. | $\frac{6}{25}$ | 33. | $\frac{12}{20}$ | 44. | $\frac{63}{96}$ |

Side B

- | | | | | | | | |
|-----|----------------|-----|-----------------|-----|-----------------|-----|-----------------|
| 1. | $\frac{1}{6}$ | 12. | $\frac{4}{15}$ | 23. | $\frac{15}{20}$ | 34. | $\frac{10}{15}$ |
| 2. | $\frac{1}{8}$ | 13. | $\frac{1}{12}$ | 24. | $\frac{20}{15}$ | 35. | $\frac{12}{15}$ |
| 3. | $\frac{1}{10}$ | 14. | $\frac{3}{12}$ | 25. | $\frac{1}{16}$ | 36. | $\frac{6}{15}$ |
| 4. | $\frac{1}{18}$ | 15. | $\frac{6}{12}$ | 26. | $\frac{3}{16}$ | 37. | $\frac{1}{81}$ |
| 5. | $\frac{1}{18}$ | 16. | $\frac{1}{18}$ | 27. | $\frac{9}{16}$ | 38. | $\frac{3}{40}$ |
| 6. | $\frac{1}{10}$ | 17. | $\frac{2}{18}$ | 28. | $\frac{12}{12}$ | 39. | $\frac{3}{24}$ |
| 7. | $\frac{1}{15}$ | 18. | $\frac{10}{18}$ | 29. | $\frac{15}{16}$ | 40. | $\frac{4}{9}$ |
| 8. | $\frac{1}{35}$ | 19. | $\frac{9}{8}$ | 30. | $\frac{18}{16}$ | 41. | $\frac{24}{32}$ |
| 9. | $\frac{1}{15}$ | 20. | $\frac{1}{25}$ | 31. | $\frac{16}{18}$ | 42. | $\frac{12}{9}$ |
| 10. | $\frac{1}{15}$ | 21. | $\frac{9}{25}$ | 32. | $\frac{2}{15}$ | 43. | $\frac{48}{63}$ |
| 11. | $\frac{2}{15}$ | 22. | $\frac{12}{25}$ | 33. | $\frac{8}{15}$ | 44. | $\frac{56}{84}$ |

Problem Set

- 48 ft³; diagrams will vary.
- Four different diagrams drawn
- Answers and explanations will vary.
- No, explanations will vary.
 - Explanations will vary.
 - 60 ft²

Exit Ticket

No; explanations and drawings will vary.

Homework

1. 216 in^3 ; diagrams will vary.
2. Three different diagrams drawn
3. Answers will vary.
4.
 - a. No; explanations will vary.
 - b. Answers will vary.
 - c. Answers will vary.
 - d. Answers and explanations will vary.

Lesson 8

Problem Set

Parameters will vary.

Exit Ticket

Prism sketches and dimensions will vary.

Homework

1. $1,080 \text{ cm}^3$; answers will vary.
2. Answers will vary.

Lesson 9

Problem Set

Measurements and calculations will vary.

Exit Ticket

- 12; 6; 4; 288
- 10; 10; 18; 1,800
- 2,088

Homework

Answers will vary.

Lesson 10

Problem Set

1. Rectangle 3 units by 2 units drawn with tiles; 3; 2; 6
2. Rectangle 3 units by $2\frac{1}{2}$ units drawn with tiles; 3; $2\frac{1}{2}$; $7\frac{1}{2}$
3. Rectangle $1\frac{1}{2}$ units by 5 units drawn with tiles; 5; $1\frac{1}{2}$; $7\frac{1}{2}$
4. Rectangle 2 units by $1\frac{3}{4}$ units drawn with tiles; 2; $1\frac{3}{4}$; $3\frac{1}{2}$
5. Rectangles $\frac{3}{4}$ unit by 5 units drawn with tiles; 5; $\frac{3}{4}$; $3\frac{3}{4}$
6. $60\frac{3}{4}\text{ in}^2$; explanations will vary.
7. 69 ft^2

Exit Ticket

1. $2\frac{1}{2}$; 2; 5

Homework

1. a. $7\frac{1}{2}$
b. 4; $2\frac{1}{4}$; 9
c. Rectangle $\frac{3}{4}$ units by 4 units is drawn and tiled; 3
Rectangle 2 units by $1\frac{3}{4}$ units is drawn and tiled; $3\frac{1}{2}$
2. $109\frac{1}{2}\text{ in}^2$
3. $42\frac{3}{4}\text{ ft}^2$

Lesson 11

Sprint

Side A

- | | | | |
|---------|-----------|-----------|-----------|
| 1. 6 | 12. 0.15 | 23. 1.2 | 34. 21 |
| 2. 0.6 | 13. 14 | 24. 0.12 | 35. 0.24 |
| 3. 0.06 | 14. 1.4 | 25. 0.012 | 36. 24 |
| 4. 9 | 15. 0.14 | 26. 0.012 | 37. 4.2 |
| 5. 0.9 | 16. 12 | 27. 35 | 38. 0.49 |
| 6. 0.09 | 17. 1.2 | 28. 3.5 | 39. 0.048 |
| 7. 8 | 18. 1.2 | 29. 0.35 | 40. 0.054 |
| 8. 0.8 | 19. 0.12 | 30. 0.035 | 41. 4.8 |
| 9. 0.08 | 20. 0.012 | 31. 0.035 | 42. 0.63 |
| 10. 15 | 21. 0.012 | 32. 16 | 43. 0.064 |
| 11. 1.5 | 22. 12 | 33. 1.8 | 44. 0.072 |

Side B

- | | | | |
|---------|-----------|-----------|-----------|
| 1. 8 | 12. 0.12 | 23. 1.6 | 34. 24 |
| 2. 0.8 | 13. 18 | 24. 0.16 | 35. 0.27 |
| 3. 0.08 | 14. 1.8 | 25. 0.016 | 36. 32 |
| 4. 6 | 15. 0.18 | 26. 0.016 | 37. 4.2 |
| 5. 0.6 | 16. 15 | 27. 45 | 38. 0.36 |
| 6. 0.06 | 17. 1.5 | 28. 4.5 | 39. 0.048 |
| 7. 9 | 18. 1.5 | 29. 0.45 | 40. 0.054 |
| 8. 0.9 | 19. 0.15 | 30. 0.045 | 41. 4.8 |
| 9. 0.09 | 20. 0.015 | 31. 0.045 | 42. 0.63 |
| 10. 12 | 21. 0.015 | 32. 12 | 43. 0.049 |
| 11. 1.2 | 22. 16 | 33. 1.4 | 44. 0.072 |

Problem Set

- $4\frac{1}{2}$; $2\frac{1}{2}$; $11\frac{1}{4}$
- $3\frac{3}{4}$; $1\frac{3}{4}$; $6\frac{9}{16}$
- $1\frac{1}{2}$; $\frac{3}{4}$; $1\frac{1}{8}$
- $\frac{3}{4}$; $\frac{1}{2}$; $\frac{3}{8}$
- Rectangles drawn
 - Colleen's: $41\frac{2}{3}\text{ cm}^2$; Caroline's: $166\frac{2}{3}\text{ cm}^2$
 - Answers will vary.
- $162\frac{9}{16}\text{ in}^2$

Exit Ticket

Rectangle $2\frac{1}{2}$ square units sketched; $6\frac{1}{4}$ square units

Homework

- $2\frac{3}{4}$; $1\frac{1}{2}$; $4\frac{1}{8}$
 - Rectangle $2\frac{1}{2}$ by $\frac{3}{4}$ units drawn and tiled; $1\frac{7}{8}$
 - Rectangle $3\frac{1}{3}$ by $2\frac{1}{2}$ units drawn and tiled; $8\frac{1}{3}$
 - Rectangle $3\frac{1}{2}$ by $2\frac{1}{4}$ units drawn and tiled; $7\frac{7}{8}$
- $39\frac{1}{16}\text{ in}^2$

Lesson 12

Problem Set

- Rectangle labeled; 5 in^2
 - Rectangle labeled; $3 \frac{1}{16} \text{ in}^2$
 - Rectangle labeled; $5 \frac{1}{2} \text{ in}^2$
 - Rectangle labeled; $7 \frac{5}{16} \text{ in}^2$
 - Rectangle labeled; $1 \frac{7}{8} \text{ in}^2$
 - Rectangle labeled; $1 \frac{7}{8} \text{ in}^2$
- $1 \frac{1}{2} \text{ ft}^2$, explanations will vary.
 - $2 \frac{1}{4} \text{ yd}^2$, explanations will vary.
 - $2 \frac{31}{32} \text{ yd}^2$, explanations will vary.
- $290 \frac{11}{12} \text{ ft}^2$
- $10 \frac{9}{16} \text{ in}^2$
 - $84 \frac{1}{2} \text{ in}^2$

Exit Ticket

$$2 \frac{1}{4} \text{ in}, 1 \frac{1}{2} \text{ in}; \text{ area} = 3 \frac{3}{8} \text{ in}^2$$

Homework

- Rectangle labeled; $3 \frac{3}{8} \text{ in}^2$
 - Rectangle labeled; $1 \frac{11}{16} \text{ in}^2$
 - Rectangle labeled; $5 \frac{1}{16} \text{ in}^2$
 - Rectangle labeled; $4 \frac{1}{8} \text{ in}^2$
 - Rectangle labeled; $\frac{7}{8} \text{ in}^2$
- $\frac{9}{16} \text{ yd}^2$
 - $3 \frac{1}{8} \text{ ft}^2$
- No; answers will vary.
- $6 \frac{1}{4} \text{ ft}^2$
 - 266 ft^2

Lesson 13

Problem Set

- 3 km^2
 - $69\frac{3}{10} \text{ m}^2$
 - $24\frac{5}{9} \text{ yd}^2$
 - $3\frac{19}{24} \text{ mi}^2$
- $38\frac{2}{15} \text{ in}^2$
- $562\frac{1}{2} \text{ yd}^2$

Exit Ticket

- $9\frac{4}{5} \text{ mm}^2$
- $26\frac{7}{16} \text{ km}^2$

Homework

- 16 cm^2
 - $21\frac{3}{5} \text{ ft}^2$
 - $26\frac{1}{15} \text{ in}^2$
 - $4\frac{5}{7} \text{ m}^2$
- $77\frac{11}{32} \text{ in}^2$
- $374\frac{21}{80} \text{ ft}^2$

Lesson 14

Problem Set

- $71\frac{1}{2}\text{ft}^2$
- $81\frac{1}{4}\text{in}^2$
- $1,094\frac{5}{8}\text{ft}^2$
- $1,656\frac{1}{9}\text{ft}^2$
 - \$409.83
- Answers will vary.
 - Answers will vary.

Exit Ticket

$$56\frac{7}{20}\text{ft}^2.$$

Homework

- 180ft^2
 $161\frac{2}{3}\text{ft}^2$
- $307\frac{1}{16}\text{in}^2$
- $383\frac{9}{10}\text{ft}^2$
- $2,075\frac{7}{10}\text{ft}^2$
5 bags for the highest setting;
7 bags for the lowest

Lesson 15

Problem Set

- $\frac{9}{16} \text{ m}^2$
- $\frac{25}{64} \text{ yd}^2$
 - $23\frac{1}{2} \text{ ft}$
 - $34\frac{33}{64} \text{ ft}^2$
- $11\frac{1}{4} \text{ ft}^2$
 - $5\frac{5}{8} \text{ ft}^2$
- $30\frac{9}{25} \text{ cm}^2$
 - $1\frac{3}{5} \text{ cm}$

Exit Ticket

$$220\frac{1}{2} \text{ in}^2$$

Homework

- $18\frac{3}{4} \text{ ft}^2$
- $1,642\frac{9}{16} \text{ ft}^2$
- $375\frac{3}{4} \text{ in}^2$

Lesson 16

Problem Set

1. Drawings will vary.
2. Answers will vary.
3. Answers will vary but should include that they all have at least one pair of parallel lines.
4. When it has at least one pair of parallel lines
5. Drawings will vary.

Exit Ticket

1. a. Trapezoids will vary.
b. Answers will vary.

Homework

1. a. Drawings will vary.
b. Drawings will vary.
2. a. Shapes in the wrong groups circled; explanations will vary.
b. Explanations will vary.
3. Trapezoid will vary.
a. Answers will vary.

Lesson 17

Problem Set

1. Parallelograms will vary.
2. Answers will vary.
 - a. Answers will vary.
 - b. Answers will vary.
3. Parallelograms will vary.
 - a. Answers will vary.
 - b. Answers will vary.
4. Answers will vary.
 - a. Answers will vary.
 - b. Answers will vary.

Exit Ticket

1. Parallelograms will vary.
2. When it has two pairs of parallel lines

Homework

1.
 - a. Parallelograms will vary.
 - b. 120° ; 60° ; 120°
2.
 - a. 6 cm; 3 cm
 - b. 67° ; 113° ; 67°
3. 4; 4; 3; 6
4. Answers will vary.
5. Answers will vary.

Lesson 18

Sprint

Side A

- | | | | | | | | |
|-----|----------------|-----|----------------|-----|----------------|-----|----------------|
| 1. | $\frac{1}{4}$ | 12. | 35 | 23. | 16 | 34. | 18 |
| 2. | $\frac{1}{6}$ | 13. | $\frac{1}{35}$ | 24. | $\frac{1}{9}$ | 35. | 36 |
| 3. | $\frac{1}{8}$ | 14. | $\frac{1}{6}$ | 25. | $\frac{2}{9}$ | 36. | 49 |
| 4. | $\frac{1}{14}$ | 15. | 6 | 26. | $\frac{1}{8}$ | 37. | 64 |
| 5. | 14 | 16. | $\frac{1}{8}$ | 27. | $\frac{3}{8}$ | 38. | 81 |
| 6. | 12 | 17. | 8 | 28. | $\frac{1}{10}$ | 39. | $\frac{1}{56}$ |
| 7. | 10 | 18. | $\frac{1}{10}$ | 29. | $\frac{3}{10}$ | 40. | 72 |
| 8. | 6 | 19. | 10 | 30. | $\frac{1}{12}$ | 41. | $\frac{1}{56}$ |
| 9. | 10 | 20. | 12 | 31. | $\frac{5}{12}$ | 42. | 42 |
| 10. | 15 | 21. | $\frac{1}{12}$ | 32. | $\frac{5}{18}$ | 43. | 63 |
| 11. | 20 | 22. | $\frac{1}{16}$ | 33. | $\frac{1}{18}$ | 44. | $\frac{1}{72}$ |

Side B

1.	$\frac{1}{4}$	12.	14	23.	9	34.	30
2.	$\frac{1}{15}$	13.	$\frac{1}{14}$	24.	$\frac{1}{16}$	35.	24
3.	$\frac{1}{20}$	14.	$\frac{1}{8}$	25.	$\frac{3}{16}$	36.	42
4.	$\frac{1}{35}$	15.	8	26.	$\frac{1}{9}$	37.	56
5.	35	16.	$\frac{1}{6}$	27.	$\frac{2}{9}$	38.	72
6.	30	17.	6	28.	$\frac{1}{12}$	39.	$\frac{1}{64}$
7.	25	18.	$\frac{1}{4}$	29.	$\frac{5}{12}$	40.	81
8.	15	19.	4	30.	$\frac{1}{25}$	41.	$\frac{1}{72}$
9.	4	20.	12	31.	$\frac{3}{25}$	42.	49
10.	6	21.	$\frac{1}{12}$	32.	$\frac{3}{20}$	43.	54
11.	8	22.	$\frac{1}{9}$	33.	$\frac{1}{30}$	44.	$\frac{1}{48}$

Problem Set

- Drawings will vary.
- Answers will vary.
- Rhombus and rectangle will vary.
 - Measurements will vary.
 - Drawings will vary.
- Answers will vary.
 - Answers will vary.
 - When all four sides are equal
 - When all the angles are 90°
 - When all sides are equal and pairs of sides are parallel to each other

Exit Ticket

1. Rhombuses will vary.
2. Rectangles will vary.

Homework

1.
 - a. Rhombuses will vary.
 - b. Rectangles will vary.
 - c. Rectangles will vary.
 - d. Rectangles will vary.
2. 54.25 cm or $54\frac{1}{4}$ cm
3. Answers will vary.
4. Answers will vary.

Lesson 19

Sprint

Side A

- | | | | |
|---------|-----------|-----------|------------|
| 1. 20 | 12. 60 | 23. 660 | 34. 42 |
| 2. 120 | 13. 130 | 24. 6,600 | 35. 420 |
| 3. 1200 | 14. 26 | 25. 240 | 36. 4,200 |
| 4. 40 | 15. 260 | 26. 480 | 37. 1,640 |
| 5. 340 | 16. 1,300 | 27. 2,400 | 38. 4,500 |
| 6. 3400 | 17. 2,600 | 28. 4,800 | 39. 42,600 |
| 7. 70 | 18. 8 | 29. 690 | 40. 720 |
| 8. 270 | 19. 88 | 30. 6,900 | 41. 2,250 |
| 9. 2700 | 20. 880 | 31. 142 | 42. 25,200 |
| 10. 30 | 21. 8,800 | 32. 1,420 | 43. 5,220 |
| 11. 6 | 22. 66 | 33. 28 | 44. 63,200 |

Side B

- | | | | |
|----------|-----------|-----------|------------|
| 1. 30 | 12. 80 | 23. 880 | 34. 52 |
| 2. 130 | 13. 140 | 24. 8,800 | 35. 520 |
| 3. 1,300 | 14. 28 | 25. 420 | 36. 5,200 |
| 4. 50 | 15. 280 | 26. 840 | 37. 2,160 |
| 5. 350 | 16. 1,400 | 27. 4,200 | 38. 4,500 |
| 6. 3,500 | 17. 2,800 | 28. 8,400 | 39. 48,600 |
| 7. 80 | 18. 6 | 29. 960 | 40. 640 |
| 8. 280 | 19. 66 | 30. 9,600 | 41. 1,950 |
| 9. 2,800 | 20. 660 | 31. 162 | 42. 14,400 |
| 10. 40 | 21. 6,600 | 32. 1,620 | 43. 5,340 |
| 11. 8 | 22. 88 | 33. 39 | 44. 60,800 |

Problem Set

1. Figures drawn.
2.
 - a. Answers will vary.
 - b. Answers will vary.
3.
 - a. Answers will vary.
 - b. Answers will vary.
 - c. When all four angles are 90°
 - d. When both pairs of adjacent sides are equal, and when all four angles are 90°
 - e. When all four sides and/or all four angles are equal.

Exit Ticket

1. All four sides are equal.
2. Kites have equal adjacent sides, but parallelograms have equal opposite sides.

Homework

1.
 - a. Kites will vary.
 - b. Quadrilateral that has two pairs of equal adjacent sides
 - c. Both pairs of sides are equal, or when it is a rhombus
2. It has right angles.
3. Squares will vary.
4. Explanations will vary.

Lesson 20

Problem Set

- T
 - F; answers will vary.
 - T
 - F; answers will vary.
 - T
 - T
 - F; answers will vary.
 - F; answers will vary.
 - T
 - F; answers will vary.
 - F; answers will vary.
- 140; 90; quadrilateral
 - 26; 26; 11; 55; 90; trapezoid, parallelogram, quadrilateral
 - 16; 18; 75; 105; 105; quadrilateral, trapezoid

Exit Ticket

Squares will vary.

- Equal adjacent sides
- All four sides equal
- All four right angles
- Both pairs of opposite sides equal and parallel
- At least one set of opposite parallel sides
- Four sides

Homework

- Square; rectangle; rhombus; parallelogram; kite; trapezoid
- 9.9; 9.9; 28; 90; 90

Lesson 21

Sprint

Side A

- | | | | |
|---------|--------|------------|---------|
| 1. 3 | 12. 20 | 23. 120 | 34. 30 |
| 2. 43 | 13. 20 | 24. 12 | 35. 40 |
| 3. 430 | 14. 40 | 25. 2,100 | 36. 43 |
| 4. 43 | 15. 20 | 26. 210 | 37. 6 |
| 5. 430 | 16. 20 | 27. 21 | 38. 40 |
| 6. 5 | 17. 24 | 28. 4,200 | 39. 60 |
| 7. 85 | 18. 12 | 29. 240 | 40. 64 |
| 8. 850 | 19. 12 | 30. 42 | 41. 32 |
| 9. 85 | 20. 36 | 31. 32,000 | 42. 23 |
| 10. 850 | 21. 12 | 32. 320 | 43. 240 |
| 11. 60 | 22. 12 | 33. 3,200 | 44. 42 |

Side B

- | | | | |
|---------|--------|------------|---------|
| 1. 2 | 12. 30 | 23. 210 | 34. 20 |
| 2. 42 | 13. 30 | 24. 21 | 35. 30 |
| 3. 420 | 14. 60 | 25. 1,200 | 36. 32 |
| 4. 42 | 15. 30 | 26. 120 | 37. 4 |
| 5. 420 | 16. 30 | 27. 12 | 38. 40 |
| 6. 4 | 17. 24 | 28. 2,400 | 39. 70 |
| 7. 84 | 18. 12 | 29. 240 | 40. 73 |
| 8. 840 | 19. 12 | 30. 24 | 41. 32 |
| 9. 84 | 20. 63 | 31. 23,000 | 42. 23 |
| 10. 840 | 21. 21 | 32. 230 | 43. 240 |
| 11. 90 | 22. 21 | 33. 2,300 | 44. 42 |

Problem Set

1. Answers will vary.
2. Answers will vary.
3. Answers will vary.

Exit Ticket

1. Parallelograms; trapezoids; trapezoids; parallelograms
2. Rhombuses; kites; kites; rhombuses

Homework

1.
 - a. Always
 - b. Sometimes
 - c. Always
 - d. Always
 - e. Always
 - f. Sometimes
 - g. Sometimes
 - h. Drawings will vary.
2.
 - a. Explanations will vary.
 - b. Explanations will vary.