



## Answer Key

**GRADE 5 • MODULE 4**

Multiplication and Division of Fractions and Decimal  
Fractions

## Lesson 1

### Problem Set

1. Answers will vary.
2. Answers will vary.
3. Answers will vary
4. Answers will vary.
5.
  - a. Answers will vary.
  - b. Answers will vary.
  - c. Answers will vary.

### Exit Ticket

1. Line plot drawn correctly.
2. Answers will vary.

### Homework

1. Line plot drawn correctly.
  - a. Location 6
  - b. Locations 1, 7, and 10
  - c.  $\frac{1}{8}$  in
  - d. 5 in

## Lesson 2

### Problem Set

1. a. Answer provided.
- b.  $12 \text{ fourths} \div 4 = 3 \text{ fourths} = \frac{3}{4}$
- c.  $24 \text{ fourths} \div 4 = 6 \text{ fourths} = \frac{6}{4} = 1\frac{2}{4} = 1\frac{1}{2}$
2.  $3 \div 2 = 6 \text{ halves} \div 2 = 3 \text{ halves} = \frac{3}{2} = 1\frac{1}{2}$
3. a. Solutions illustrated correctly.  
b. Answers will vary.
4. a.  $\frac{2}{3}$   
b.  $\frac{15}{8}$   
c.  $\frac{11}{4}$   
d.  $3 \div 2$   
e.  $9 \div 13$   
f.  $4 \div 3$

### Exit Ticket

1. a.  $27 \text{ ninths} \div 9 = 3 \text{ ninths} = \frac{3}{9} = \frac{1}{3}$ ; picture representing  $3 \div 9$  drawn  
b.  $12 \text{ thirds} \div 3 = 4 \text{ thirds} = \frac{4}{3} = 1\frac{1}{3}$ ; picture representing  $4 \div 3$  drawn
2. a.  $\frac{21}{8}$   
b.  $7 \div 4$   
c.  $\frac{4}{9}$   
d.  $9 \div 7$

**Homework**

1. a.  $4 \text{ fourths} \div 4 = 1 \text{ fourth} = \frac{1}{4}$ ; picture representing  $1 \div 4$  drawn  
b.  $15 \text{ fifths} \div 5 = 3 \text{ fifths} = \frac{3}{5}$ ; picture representing  $3 \div 5$  drawn  
c.  $28 \text{ fourths} \div 4 = 7 \text{ fourths} = \frac{7}{4} = 1\frac{3}{4}$ ; picture representing  $7 \div 4$  drawn
2.  $4 \div 6 = 24 \text{ sixths} \div 6 = 4 \text{ sixths} = \frac{4}{6} = \frac{2}{3}$ ; picture representing  $4 \div 6$  drawn
3. a.  $\frac{2}{7}$   
b.  $\frac{39}{5}$   
c.  $\frac{13}{3}$   
d.  $9 \div 5$   
e.  $19 \div 28$   
f.  $8 \div 5$

## Lesson 3

### Problem Set

1.
  - a. Answer provided
  - b. 6 halves; 3 halves;  $\frac{3}{2}$ , algorithm answered correctly
  - c. 6, 4;  $\frac{6}{4}$ ;  $1\frac{1}{2}$ ; algorithm answered correctly
  - d.  $10 \text{ halves} \div 2 = 5 \text{ halves}$ ; algorithm answered correctly
2.
  - a.  $\frac{3}{4}$ ; answers will vary.
  - b. 3; answers will vary.
3.
  - a. 4; answers will vary.
  - b.  $\frac{4}{5}$

### Exit Ticket

$9 \div 4$ ;  $36 \text{ fourths} \div 4 = 9 \text{ fourths}$ ;  $\frac{9}{4} = 2\frac{1}{4}$ ; picture drawn representing 9 wholes or 36 fourths, divided by 4

### Homework

1.
  - a. Answer provided
  - b.  $7 \div 5$ ; 35 fifths  $\div 5 = 7$  fifths;  $\frac{7}{5}$
  - c.  $7 \div 2$ ; 14 halves  $\div 2 = 7$  halves;  $\frac{7}{2}$ ;  $3\frac{1}{2}$
  - d.  $28 \text{ fourths} \div 4 = 7 \text{ fourths}$ ;  $1\frac{3}{4}$
2.
  - a. 3; explanations will vary.
  - b. 7
3.
  - a. 4; explanations will vary.
  - b.  $\frac{1}{2}$ ; 2

## Lesson 4

### Problem Set

1. a. Answer provided  
b.  $\frac{2}{3}$ ; tape diagram drawn correctly  
c.  $1\frac{2}{5}$ ; tape diagram drawn correctly  
d.  $2\frac{4}{5}$ ; tape diagram drawn correctly
2. a. Answer provided  
b.  $\frac{6}{7}$ ; algorithm completed correctly  
c. 55,10; 5 and 6; algorithm completed correctly  
d. 32,40; 0 and 1; algorithm completed correctly
3. a. 80 cents  
b. 20 cents; explanations will vary
4. a.  $\frac{1}{4}$   
b.  $1\frac{1}{4}$ ; tape diagram drawn correctly  
c. 60 oz

### Exit Ticket

$2\frac{1}{4}$ ; tape diagram drawn correctly

**Homework**

1. a. Answer provided  
b.  $\frac{4}{5}$ ; tape diagram drawn correctly  
c.  $\frac{8}{5}$ ; tape diagram drawn correctly  
d.  $\frac{14}{3}$ ; tape diagram drawn correctly
2. a. Answer provided  
b. 3, 4; algorithm completed correctly  
c. 7, 2; 3 and 4; algorithim completed correctly  
d. 81, 90; 0 and 1; algorithm completed correctly
3. a.  $\frac{2}{5}$  yd; tape diagram drawn correctly  
b.  $1\frac{1}{5}$  ft; tape diagram drawn correctly
4.  $4\frac{2}{3}$  lb
5.  $\frac{2}{3}$  lb

## Lesson 5

### Problem Set

1.  $\frac{2}{5}$  yd
2.  $\frac{4}{6}$  or  $\frac{2}{3}$  pt
3.  $\frac{6}{4}$  or  $1\frac{1}{2}$ ; tape diagram drawn showing  $6 \div 4$
4. a.  $\frac{4}{8}$  or  $\frac{1}{2}$   
b.  $\frac{1}{8}$
5.  $\frac{5}{40}$  or  $\frac{1}{8}$
6. a.  $\frac{4}{10}$  or  $\frac{2}{5}$  L  
b. 0.4 L  
c. 400 mL
7. a.  $4\frac{2}{3}$  mi; tape diagram drawn showing  $14 \div 3$   
b. 14 mi

### Exit Ticket

- a.  $\frac{5}{9}$  yd; tape diagram drawn showing  $5 \div 9$
- b.  $1\frac{1}{9}$  yd

### Homework

1. a.  $3\frac{2}{4}$  or  $3\frac{1}{2}$  gal  
b.  $10\frac{1}{2}$  gal; explanations will vary.  
c.  $7\frac{2}{4}$  or  $7\frac{1}{2}$  sq. ft  
d.  $\frac{1}{4}$
2. a.  $\frac{1}{4}$ ; models will vary.  
b.  $\frac{3}{4}$  ft  
c. 9 in
3. \$7.50

## Lesson 6

### Sprint

#### Side A

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

#### Side B

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

**Problem Set**

1. a. 3; 6; 9  
b. 5; 10; 15  
c. 4; 16; 5  
d. 3; 9; 12; 18; 21
2. 8; drawings will vary.
3. Explanations and pictures will vary.
4. 12
5. 15 ten dollar bills or \$150

**Exit Ticket**

1. a. 4  
b. 12
2. 12

**Homework**

1. a. 4; 8; 12  
b. 5; 10; 15; 20  
c. 7; 14; 21; 28; 35; 42
2. 12; drawings will vary.
3. Explanations and pictures will vary.
4. 8
5. a. 24 or 2 dozen  
b. \$45

## Lesson 7

### Problem Set

1. Tape diagram drawn accurately
  - a. 6
  - b. 12
  - c. 18
  - d. 9
  - e. 20
  - f. 20
  - g.  $2\frac{1}{4}$
  - h.  $4\frac{4}{5}$
  - i. 15
  - j. 32
2. Tape diagram drawn accurately
  - a. 36
  - b. 140 degrees
  - c. \$72
  - d.  $3\frac{1}{5}$  more ounces

### Exit Ticket

Tape diagram drawn accurately

- a. 18
- b. 50
- c. 16

**Homework**

1. Tape diagram drawn accurately
- a. 6
  - b. 12
  - c. 12
  - d. 6
  - e. 21
  - f. 36
  - g.  $10\frac{1}{3}$
  - h. 8
  - i.  $6\frac{1}{4}$
  - j.  $18\frac{3}{4}$
  - k. 36
  - l. 35
2. Tape diagram drawn accurately
- a. 22
  - b. 150 degrees
  - c.  $4\frac{2}{8}$  or  $4\frac{1}{4}$  more ounces
  - d. 84

## Lesson 8

### Problem Set

1. Explanations will vary.
2. Modeling will vary.
  - a.  $\frac{21}{4}$
  - b.  $\frac{28}{5}$
  - c.  $\frac{12}{7}$
3. Modeling will vary.
  - a. 4
  - b. 6
4. Modeling will vary.
  - a. 6
  - b. 27
  - c. 39
  - d. 36
5. a. 30  
b. 45  
c. 300  
d. 80

### Exit Ticket

Modeling will vary.

- a. 10
- b. 15

**Homework**

1. Modeling will vary.

- a.  $\frac{15}{3}$  or 5
- b.  $\frac{26}{5}$
- c.  $\frac{27}{4}$

2. Modeling will vary.

- a. 12
- b. 16
- c. 44
- d. 42
- e. 15
- f.  $7\frac{1}{2}$
- g.  $23\frac{1}{3}$

3. a. 20

- b. 48
- c. 700
- d. 60

## Lesson 9

### Problem Set

1. Explanations will vary.
2. 3
- a. Answer provided.
3. a. 14
- b. 4
- b. 12
- c. 10
- c. 2
- d. 80
- d. Mr. Paul; 2
- e. 40
4.  $12\frac{1}{2}$
- f. 27

### Exit Ticket

1.  $\frac{3}{5}$
2. a. 8
- b. 40
- c. 10

### Homework

1. Explanations will vary.
2. 9
- a. Answer provided
3. a. 12
- b. 2
- b. 10
- c. 9
- c. 2
- d. 60
- d. Mr. Phillips; 6
- e. 25
4.  $6\frac{1}{4}; 3\frac{3}{4}$
- f. 24

## Lesson 10

### Problem Set

1.  $5\frac{2}{3}$ ; expressions will vary.  
 $3\frac{3}{10}$ ; expressions will vary.
2. a. 6; expressions will vary.  
b.  $2\frac{2}{3}$ ; expressions will vary.  
c.  $3\frac{1}{4}$ ; expressions will vary.  
d. 14; expressions will vary.  
e.  $26\frac{2}{3}$ ; expressions will vary.  
f.  $10\frac{2}{3}$ ; expressions will vary.
3.  $(4 \times 7) \div 5$ ,  $4 \times \frac{7}{5}$ , and  $7 \times \frac{4}{5}$  circled;  
explanations will vary.
4. a.  $>$ ; explanations will vary.  
b.  $>$ ; explanations will vary.  
c.  $>$ ; explanations will vary.
5. a.  $\frac{1}{2}$  gallon; expressions will vary.  
b.  $3\frac{3}{4}$  gallons; expressions will vary.  
c.  $1\frac{1}{2}$  gallons; expressions will vary.  
d. Data accurately displayed on line plot  
e. 17 gallons

### Exit Ticket

1. a. Expressions will vary.  
b. Expressions will vary.
2. 3; expressions will vary.

**Homework**

1.  $5\frac{1}{4}$ ; expressions will vary.  
 $6\frac{10}{21}$ ; expressions will vary.
2.  $(6 \times 3) \div 8$  and  $\frac{3}{8} \times 6$  circled;  
explanations will vary.
3. a. 5; expressions will vary.  
b. 3; expressions will vary.  
c.  $7\frac{14}{15}$ ; expressions will vary.  
d. 4; expressions will vary.  
e.  $39\frac{1}{5}$ ; expressions will vary.  
f. 36; expressions will vary.
4. a.  $>$ ; explanations will vary.  
b.  $>$ ; explanations will vary.  
c.  $>$ ; explanations will vary.
5. a.  $2\frac{1}{4}$ ; expressions will vary.  
b.  $1\frac{3}{4}$ ; expressions will vary.  
c.  $3\frac{1}{4}$ ; expressions will vary.  
d. Line plot accurately drawn  
e.  $19\frac{3}{8}$ ; expressions will vary.

## Lesson 11

### Problem Set

1.  $\frac{3}{8}$
2. 8 pt
3. 68 oz
4.  $2\frac{1}{2}$
5. Answers will vary.

### Exit Ticket

$3\frac{1}{3}$ ; tape diagram drawn accurately

### Homework

1. 25 min
2.  $4\frac{3}{4}$
3.  $17\frac{3}{4}$
4.  $3\frac{1}{2}$
5. Answers will vary.

## Lesson 12

### Problem Set

1. a.  $\frac{3}{4}$   
b. 17
2. 16
3. Lillian; 26 min; bonus:  $\frac{13}{30}$  hour
4. 2; story problems will vary.
5. 6; story problems will vary.
6. 12 in Mr. Smith's class; 10 in Mrs. Jacob's class

### Exit Ticket

6

### Homework

1. 16 minutes
2.  $\frac{21}{56}$  or  $\frac{3}{8}$
3. 12
4. Jacob; bonus:  $\frac{1}{6}$  minute
5. 4; story problems will vary.
6. 4; story problems will vary.

## Lesson 13

### Problem Set

1. Accurate area model drawn
  2.  $3 \times \frac{1}{4} = \frac{3}{4}$ ;  $\frac{1}{3} \times \frac{1}{4} = \frac{1}{12}$ ; comparison statements will vary.
  3.  $\frac{1}{6}$ ; accurate area model drawn
  4.  $\frac{1}{10}$
  5.  $\frac{1}{12}$
- a. Answer provided
- b.  $\frac{1}{6}; \frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$
- c.  $\frac{1}{12}; \frac{1}{4} \times \frac{1}{3} = \frac{1}{12}$
- d.  $\frac{1}{16}; \frac{1}{4} \times \frac{1}{4} = \frac{1}{16}$
- e.  $\frac{1}{12}; \frac{1}{2} \times \frac{1}{6} = \frac{1}{12}$

### Exit Ticket

1.  $\frac{1}{3} \times \frac{1}{3} = \frac{1}{9}$ ; accurate area model drawn
2.  $\frac{1}{12}$

### Homework

1. Accurate area model drawn
  2.  $\frac{1}{10}$ ; accurate area model drawn
  3.  $\frac{1}{6}$ ; accurate area model drawn
  4.  $\frac{1}{20}$ ; accurate model drawn
- a.  $\frac{1}{4}$
- b.  $\frac{1}{6}$
- c.  $\frac{1}{8}$
- d.  $\frac{1}{10}$
- e.  $\frac{1}{9}$
- f.  $\frac{1}{12}$

## Lesson 14

### Sprint

#### Side A<sup>1</sup>

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

#### Side B<sup>1</sup>

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

<sup>1</sup> Note: Answers are given here in unit form for ease of reading. Students may answer in standard form.

**Problem Set**

1. Accurate model drawn

- a.  $3; 1; \frac{1}{3} \times \frac{3}{4} = \frac{3}{12} = \frac{1}{4}$   
b.  $4; 2; \frac{1}{2} \times \frac{4}{5} = \frac{4}{10} = \frac{2}{5}$   
c.  $\frac{1}{2}$   
d.  $\frac{1}{3}$   
e.  $\frac{3}{10}$   
f.  $\frac{1}{6}$

2.  $\frac{1}{8}$ ; accurate tape diagram drawn

3. a.  $\frac{1}{5}$   
b.  $\frac{1}{5}$   
4. Explanations may vary; accurate drawing shown to support explanation

**Exit Ticket**1.  $\frac{1}{7}; \frac{1}{3} \times \frac{3}{7} = \frac{3}{21} = \frac{1}{7}$ ; accurate model drawn2.  $\frac{3}{8}$ **Homework**

1. Accurate model drawn

- a. 2; 1  
b. 4; 2  
c.  $\frac{1}{5}$   
d.  $\frac{3}{8}$   
e.  $\frac{4}{15}$   
f.  $\frac{4}{15}$

2.  $\frac{1}{7}$ ; accurate model drawn

3. a.  $\frac{1}{5}$   
b.  $\frac{1}{15}$   
4. a. All grandchildren received the same amount; explanations may vary; accurate drawing shown to support response.  
b.  $\frac{1}{5}$

## Lesson 15

### Problem Set

1. a. Answer provided  
b.  $\frac{3}{4} \times \frac{4}{5} = \frac{3}{5}$ ; accurate model drawn  
c.  $\frac{2}{5} \times \frac{2}{3} = \frac{4}{15}$ ; accurate model drawn  
d.  $\frac{4}{5} \times \frac{2}{3} = \frac{8}{15}$ ; accurate model drawn  
e.  $\frac{3}{4} \times \frac{2}{3} = \frac{1}{2}$ ; accurate model drawn
2. a.  $\frac{5}{8}$   
b.  $\frac{1}{2}$   
c.  $\frac{4}{7}$   
d.  $\frac{2}{15}$
3.  $\frac{4}{10}$  or  $\frac{2}{5}$   
4.  $\frac{1}{2}$   
5. a.  $\frac{1}{3}$   
b. 2

### Exit Ticket

1. a.  $\frac{2}{5}$   
b.  $\frac{1}{6}$
2.  $\frac{3}{20}$

**Homework**

1. a.  $\frac{2}{3} \times \frac{3}{4} = \frac{1}{2}$ ; accurate model drawn  
b.  $\frac{2}{5} \times \frac{3}{4} = \frac{3}{10}$ ; accurate model drawn  
c.  $\frac{2}{5} \times \frac{4}{5} = \frac{8}{25}$ ; accurate model drawn  
d.  $\frac{4}{5} \times \frac{3}{4} = \frac{3}{5}$ ; accurate model drawn
2. a.  $\frac{1}{4}$   
b.  $\frac{3}{5}$   
c.  $\frac{25}{48}$   
d.  $\frac{5}{16}$   
e.  $\frac{16}{27}$   
f.  $\frac{2}{21}$
3. a.  $\frac{1}{2}$   
b. 250 mL
4.  $\frac{1}{2}$
5. a.  $\frac{1}{10}$   
b.  $\frac{1}{2}$  pound

## Lesson 16

### Problem Set

- |       |         |
|-------|---------|
| 1. 5  | 5. \$40 |
| 2. 12 | 6. 12   |
| 3. 90 | 7. \$12 |
| 4. 36 |         |

### Exit Ticket

84 boats

### Homework

1. 8; accurate tape diagram drawn
2. Accurate tape diagrams drawn for each
  - a. 180
  - b. 60
  - c. 313
  - d. Less than half
  - e. 126

## Lesson 17

### Problem Set

1. a. Answer provided  
b.  $0.4 \times 0.3 = 0.12$ ; accurate area model  
c.  $0.1 \times 1.4 = 0.14$ ; accurate area model  
d.  $0.6 \times 1.7 = 1.02$ ; accurate area model
2. a. 3.5  
b.  $0.35$ ;  $\frac{35}{100}$ ; 0.35  
c. 0.035; 5, 7;  $\frac{35}{1000}$ ; 0.035  
d. 1.8  
e. 0.18  
f. 0.018  
g. 4.8  
h. 0.48  
i. 0.048
3. 0.14 m  
4. a. 1.5 mi  
b. 1.75 mi

### Exit Ticket

1.  $0.1 \times 1.2 = 0.12$ ; accurate area model
2. a. 4.5  
b. 0.45  
c. 0.045

**Homework**

1. a. Answer provided  
b.  $0.6 \times 0.2 = 0.12$ ; accurate area model  
c.  $0.1 \times 1.6 = 0.16$ ; accurate area model  
d.  $0.6 \times 1.9 = 1.14$ ; accurate area model
2. a. 2.4  
b.  $0.24$ ;  $\frac{24}{100}$ ; 0.24  
c. 0.024; 4, 6;  $\frac{24}{1000}$ ; 0.024  
d. 2.1  
e. 0.21  
f. 0.021  
g. 6.5  
h. 0.65  
i. 0.065
3. 0.51 L
4. a. 1.44 mi  
b. 3.46 mi

## Lesson 18

### Sprint

#### Side A<sup>1</sup>

- |                  |                     |                   |                        |
|------------------|---------------------|-------------------|------------------------|
| 1. 1 fourth      | 12. 4 fifteenths    | 23. 10 fifteenths | 34. 15 twentieths      |
| 2. 1 sixth       | 13. 1 twelfth       | 24. 15 tenths     | 35. 18 twentieths      |
| 3. 1 eighth      | 14. 2 twelfths      | 25. 1 ninth       | 36. 6 twentieths       |
| 4. 1 fourteenth  | 15. 6 twelfths      | 26. 2 ninths      | 37. 1 forty-ninth      |
| 5. 1 fourteenth  | 16. 1 eighteenth    | 27. 4 ninths      | 38. 3 fortieths        |
| 6. 1 sixth       | 17. 5 eighteenths   | 28. 6 sixths      | 39. 5 twenty-fourths   |
| 7. 1 ninth       | 18. 10 eighteenths  | 29. 8 ninths      | 40. 9 sixteenths       |
| 8. 1 eighteenth  | 19. 10 twelfths     | 30. 10 ninths     | 41. 12 eighteenths     |
| 9. 1 fifteenth   | 20. 1 twenty-fifth  | 31. 9 tenths      | 42. 18 eighths         |
| 10. 1 fifteenth  | 21. 4 twenty-fifths | 32. 3 twentieths  | 43. 49 seventy-seconds |
| 11. 2 fifteenths | 22. 6 twenty-fifths | 33. 12 twentieths | 44. 63 ninety-sixths   |

#### Side B<sup>1</sup>

- |                   |                      |                    |                       |
|-------------------|----------------------|--------------------|-----------------------|
| 1. 1 sixth        | 12. 4 fifteenths     | 23. 15 twentieths  | 34. 10 fifteenths     |
| 2. 1 eighth       | 13. 1 twelfth        | 24. 20 fifteenths  | 35. 12 fifteenths     |
| 3. 1 tenth        | 14. 3 twelfths       | 25. 1 sixteenth    | 36. 6 fifteenths      |
| 4. 1 eighteenth   | 15. 6 twelfths       | 26. 3 sixteenths   | 37. 1 eighty-first    |
| 5. 1 eighteenth   | 16. 1 eighteenth     | 27. 9 sixteenths   | 38. 3 fortieths       |
| 6. 1 tenth        | 17. 2 eighteenths    | 28. 12 twelfths    | 39. 3 twenty-fourths  |
| 7. 1 fifteenth    | 18. 10 eighteenths   | 29. 15 sixteenths  | 40. 4 ninths          |
| 8. 1 thirty-fifth | 19. 9 eighths        | 30. 18 sixteenths  | 41. 24 thirty-seconds |
| 9. 1 fifteenth    | 20. 1 twenty-fifths  | 31. 16 eighteenths | 42. 12 ninths         |
| 10. 1 fifteenth   | 21. 9 twenty-fifths  | 32. 2 fifteenths   | 43. 48 sixty-thirds   |
| 11. 2 fifteenths  | 22. 12 twenty-fifths | 33. 8 fifteenths   | 44. 56 eighty-fourths |

<sup>1</sup> Note: Answers are written in unit form for ease of reading, but students may express answers in standard form.

**Problem Set**

1. a. Answer provided  
b. 2.07; 207 hundredths  
c. 18.48; 1,848 hundredths  
d. 4.62; 462 hundredths
2. a. Answer provided  
b. 2.133; 2,133 thousandths  
c. 16.968; 16,968 thousandths  
d. 0.462; 462 thousandths
3. a. 1.92  
b. 3.84; 384 hundredths  
c. 19.944; 19,944 thousandths  
d. 26.25; 2,625 hundredths
4. \$4.44
5. a. 15.75 sq. m  
b. 39.375 sq. m

**Exit Ticket**

- a. 4.48
- b. 1.12
- c. 8.484
- d. 0.924

**Homework**

1. a. Answer provided  
b. 2.64  
c. 14.08  
d. 3.52
2. a. Answer provided  
b. 2.345; 2,345 thousandths  
c. 12.928; 12,928 thousandths  
d. 0.704; 704 thousandths
3. a. 1.92  
b. 4.83; 483 hundredths  
c. 25.194; 25,194 thousandths  
d. 29.25; 2,925 hundredths
4. \$19.25
5. a. 70.2 sq. m  
b. 175.5 sq. m

## Lesson 19

### Problem Set

1. a. Answer provided  
 b.  $1\frac{1}{3}; \frac{1}{3}; \frac{4}{3}$   
 c.  $\frac{7}{12}$   
 d.  $1\frac{1}{12}$   
 e.  $\frac{5}{16}$   
 f.  $1\frac{2}{16}$
2. a.  $\frac{24}{36}\text{yd}$   
 b. \$4  
 c.  $1\frac{3}{16}\text{lb}$   
 d.  $\frac{14}{16}\text{gal}$

### Exit Ticket

- a.  $\frac{5}{12}$   
 b.  $1\frac{1}{12}$   
 c.  $\frac{9}{16}$   
 d.  $1\frac{2}{16}$

### Homework

1. a. Answer provided  
 b.  $2; \frac{1}{3}, \frac{6}{3}$   
 c.  $\frac{5}{12}$   
 d.  $1\frac{2}{12}$   
 e.  $\frac{7}{16}$   
 f.  $1\frac{4}{16}$   
 g.  $\frac{1}{2}$   
 h. 2
2. a.  $\frac{12}{16}\text{lb}$   
 b. \$3  
 c.  $1\frac{5}{16}\text{lb}$   
 d. 3 gal

## Lesson 20

### Problem Set

1. a. Answer provided
2.  $4\frac{1}{2}t$
- b.  $\frac{3}{8}$
3. 37 qt
- c. 56
4.  $15\frac{5}{12}\text{yd}$
- d.  $4\frac{3}{4}$
- e. 216
- f.  $1\frac{2}{9}$

### Exit Ticket

- a. 26
- b.  $1\frac{1}{4}$
- c.  $1\frac{1}{4}$
- d. 44

### Homework

1. a. Answer provided
2.  $2\frac{3}{4}\text{ min}$
- b.  $\frac{5}{12}$
3.  $\frac{1}{4}\text{ lb}$
- c. 46
4. Yes, because the package weighs 15 lb
- d.  $3\frac{3}{4}$
- e. 258
- f.  $2\frac{3}{4}$

## Lesson 21

### 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**

1. a. Answer provided

b.  $\frac{7}{7}$

c.  $\frac{5}{5}$

d. Answers will vary.

2. a.  $\frac{25}{100} = 0.25$

b.  $\frac{75}{100} = 0.75$

c.  $\frac{1}{5} \times \frac{20}{20} = \frac{20}{100} = 0.20$

d.  $\frac{4}{5} \times \frac{20}{20} = \frac{80}{100} = 0.80$

e.  $\frac{1}{20} \times \frac{5}{5} = \frac{5}{100} = 0.05$

f.  $\frac{27}{20} \times \frac{5}{5} = \frac{135}{100} = 1.35$

g.  $\frac{7}{4} \times \frac{25}{25} = \frac{175}{100} = 1.75$

h.  $\frac{8}{5} \times \frac{20}{20} = \frac{160}{100} = 1.60$

i.  $\frac{24}{25} \times \frac{4}{4} = \frac{96}{100} = 0.96$

j.  $\frac{93}{50} \times \frac{2}{2} = \frac{186}{100} = 1.86$

k.  $2\frac{6}{25} \times \frac{4}{4} = 2\frac{24}{100} = 2.24$

l.  $3\frac{31}{50} \times \frac{2}{2} = 3\frac{62}{100} = 3.62$

3. No; answers will vary.

4. Answers will vary.

5.  $\frac{1}{8} = \frac{1}{2 \times 2 \times 2} \times \frac{5 \times 5 \times 5}{5 \times 5 \times 5} = \frac{5 \times 5 \times 5}{(2 \times 5) \times (2 \times 5) \times (2 \times 5)} = \frac{25}{1000} = 0.125$ ;  $\frac{1}{4} = 0.25 = 0.250 = 250$

thousandths;  $\frac{1}{8}$  is half of  $\frac{1}{4}$ , and half of 250

thousandths is 125 thousandths, so  $\frac{1}{8} = 0.125$

**Exit Ticket**

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

2. a.  $\frac{1}{4} \times \frac{25}{25} = \frac{25}{100} = 0.25$

b.  $\frac{2}{5} \times \frac{2}{2} = \frac{4}{10} = 0.40$

c.  $\frac{3}{25} \times \frac{4}{4} = \frac{12}{100} = 0.12$

d.  $\frac{5}{20} \times \frac{5}{5} = \frac{25}{100} = 0.25$

**Homework**

1. a.  $\frac{3}{9}$   
     b.  $\frac{7}{7}$   
     c.  $\frac{5}{5}, \frac{25}{10}$   
     d. Answers will vary.
2. a.  $\frac{75}{100} = 0.75$   
     b.  $\frac{25}{100} = 0.25$   
     c.  $\frac{2}{5} \times \frac{2}{2} = \frac{4}{10} = 0.4$   
     d.  $\frac{3}{5} \times \frac{2}{2} = \frac{6}{10} = 0.6$   
     e.  $\frac{3}{20} \times \frac{5}{5} = \frac{15}{100} = 0.15$   
     f.  $\frac{25}{20} \times \frac{5}{5} = \frac{125}{100} = 1.25$   
     g.  $\frac{23}{25} \times \frac{4}{4} = \frac{92}{100} = 0.92$   
     h.  $\frac{89}{50} \times \frac{2}{2} = \frac{178}{100} = 1.78$   
     i.  $3\frac{11}{25} \times \frac{4}{4} = 3\frac{44}{100} = 3.44$   
     j.  $5\frac{41}{50} \times \frac{2}{2} = 5\frac{82}{100} = 5.82$
3.  $\frac{6}{8} = \frac{3}{4} \times \frac{25}{25} = \frac{75}{100} = 0.75$   
     4. Answers will vary.  
     5.  $\frac{3}{4} \times \frac{25}{25} = \frac{75}{100} = 0.75$ ;  $\$0.75 - \$0.44 = \$0.31$ ; 31 cents

## Lesson 22

### Problem Set

1. a.  $\frac{1}{2} \times 8 = 4$ ;  $\frac{1}{2}$  circled, 8 boxed; 4  
b.  $8 \times \frac{1}{2} = 4$ ; 8 circled,  $\frac{1}{2}$  boxed; 4
2. a. Accurate tape diagram shown  
b. Accurate tape diagram shown
3. a. Any number less than 4  
b. Any number less than 7  
c. 5
4. a. Any fraction greater than 1; answers will vary.  
b. Any fraction less than 1; answers will vary.
5. Answers will vary.
6. 25.5 in  
6 in by 3 in; 14 in by 16 in

### Exit Ticket

- a. Any number greater than 3; answers will vary.
- b. Any number less than 8; answers will vary.
- c. 2; answers will vary.

### Homework

1. a.  $\frac{1}{3} \times 6 = 2$ ;  $\frac{1}{3}$  circled, 6 boxed; 2  
b.  $6 \times \frac{1}{3} = 2$ ; 6 circled,  $\frac{1}{3}$  boxed; 2
2. a. Accurate tape diagram shown  
b. Accurate tape diagram shown
3. a. Any number greater than 3; answers will vary.  
b. Any number less than 6; answers will vary.  
c. 5
4. a. Any fraction greater than 1; answers will vary.  
b. Any fraction less than 1; answers will vary.
5. a. Any number less than  $\frac{1}{3}$   
b. Explanations will vary.
6. 17 yd
7. 2 in by 3 in; 6 in by 4 in

## Lesson 23

### Problem Set

1. a. 1.00  
b. 1.021  
c. 0.989
2. a. Less:  $602 \times 0.489$ ,  $0.3 \times 0.069$ ,  $0.2 \times 0.1$   
Greater:  $13.89 \times 1.004$ ,  $102.03 \times 4.015$ ,  
 $0.72 \times 1.24$   
b. Answers will vary.
3. a. Is slightly less than; explanations will vary.  
b. Is slightly more than; explanations will vary.  
c. Is a lot less than; explanations will vary.  
d. Is slightly more than; explanations will vary.  
e. Is slightly less than; explanations will vary.
4. Dhakir's is longest; Carson's is shortest;  
explanations will vary.
5. Greater than 1; examples will vary.  
Less than 1; examples will vary.

### Exit Ticket

1. a. 0.898  
b. 1.00  
c. 1.009
2. Slightly less; explanations will vary.

### Homework

1. a. Less:  $828 \times 0.921$ ,  $0.05 \times 0.1$   
Greater:  $12.5 \times 1.989$ ,  $321.46 \times 1.26$ ,  
 $0.007 \times 1.02$ ,  $2.16 \times 1.11$   
b. Explanations will vary.
2. a. Is slightly less than; explanations will vary.  
b. Is slightly more than; explanations will  
vary.  
c. Is a lot less than; explanations will vary.  
d. Is slightly more than; explanations will  
vary.  
e. Is slightly less than; explanations will vary.
3. Kayla, Jonathan, Rachel; explanations will vary.
4. a. Greater than 1; examples will vary.  
b. Less than 1; examples will vary.

## Lesson 24

### Problem Set

1. 2.5 mL
2.  $\frac{21}{40}$  or 0.525 L
3. 20.25 min
4. 4,590.72 m
5. 20
6. \$266

### Exit Ticket

1. 3.725 kg
2. 10

### Homework

1. 14.375 lb
2. 0.225 cm
3. 38
4. \$215,942.65
5. 108
6. \$142.60

## Lesson 25

### Problem Set

1. a. 8; 2; 8; 8  
b. 8; 4; 8; 8  
c. 15; 3; 15; 15  
d. 15; 5; 15; 15
2. Accurate check shown for each
  - a. 10 e. 16
  - b. 6 f. 42
  - c. 20 g. 24
  - d. 6 h. 36
3. 20
4. a. 18  
b. 60  
c. 32
5. 12 gal

### Exit Ticket

1. a. 10; 2; 10; 10  
b. 16; 4; 16, 4; 16
2. Yes

### Homework

1. a. 9; 3; 9, 3; 9  
b. 12; 4; 12, 3; 12  
c. 12; 3; 12, 4; 12  
d. 20; 4; 20, 5; 20
2. Accurate check shown for each
  - a. 8 e. 18
  - b. 12 f. 18
  - c. 20 g. 30
  - d. 40 h. 60
3. 24
4. 24 bags of nuts, 20 bags of cherries, and 24 bags of dried fruit

## Lesson 26

### Problem Set

1. Model or tape diagram drawn for each
  - a.  $\frac{1}{6}$
  - b.  $\frac{1}{12}$
  - c.  $\frac{1}{8}$
  - d.  $\frac{1}{12}$
2. Accurate check shown for each
  - a.  $\frac{1}{14}$
  - b.  $\frac{1}{18}$
  - c.  $\frac{1}{20}$
  - d.  $\frac{1}{20}$
  - e.  $\frac{1}{10}$
  - f.  $\frac{1}{18}$
  - g.  $\frac{1}{16}$
  - h.  $\frac{1}{100}$
3.  $\frac{1}{4}$ ; picture drawn
4. a.  $\frac{1}{16}$  gal  
b. 1 c
5. a.  $\frac{1}{12}$   
b. \$28.80

### Exit Ticket

1. Model or tape diagram drawn for each
  - a.  $\frac{1}{8}$
  - b.  $\frac{1}{40}$
2.  $\frac{1}{12}$

**Homework**

1. Model or tape diagram drawn for each
    - a.  $\frac{1}{8}$
    - b.  $\frac{1}{18}$
    - c.  $\frac{1}{12}$
    - d.  $\frac{1}{10}$
  2. Accurate check shown for each
    - a.  $\frac{1}{20}$
    - b.  $\frac{1}{40}$
    - c.  $\frac{1}{15}$
    - d.  $\frac{1}{15}$
    - e.  $\frac{1}{32}$
    - f.  $\frac{1}{21}$
    - g.  $\frac{1}{50}$
    - h.  $\frac{1}{100}$
3.  $\frac{1}{16}$  mile
4. a.  $\frac{2}{15}$   
b. 105 pages

## Lesson 27

### Problem Set

1. 12; accurate model shown
2.  $\frac{1}{12}$ ; accurate model shown
3. a.  $\frac{1}{20}$  m; accurate model shown  
b. 5 cm
4. a.  $\frac{1}{20}$  t; accurate model shown  
b. 100 lb
5. a. 30 sixths  
b. 6 in
6. a.  $\frac{1}{16}$   
b. 48 oz  
c.  $3\frac{15}{16}$  c

### Exit Ticket

1. 12 fourths; accurate model shown
2.  $\frac{1}{8}$ ; accurate model shown

### Homework

1. 32; accurate model shown
2.  $\frac{1}{24}$ ; accurate model shown
3. a.  $\frac{1}{20}$  L; accurate model shown  
b. 50 mL
4. a. 20 fifths  
b. 20 cm
5. a.  $\frac{1}{12}$   
b. 72 oz  
c. 3 lb

## Lesson 28

### Problem Set

1. Answers will vary; 20
2. Answers will vary;  $\frac{1}{20}$
3. a. Answers will vary; 6  
b. Answers will vary;  $\frac{1}{12}$   
c. Answers will vary;  $\frac{1}{12}$   
d. Answers will vary; 15

### Exit Ticket

- a. Answers will vary; 8
- b. Answers will vary;  $\frac{1}{8}$

### Homework

1. Answers will vary; 14
2. Answers will vary;  $\frac{1}{9}$  lb
3. a. Answers will vary; 8  
b. Answers will vary;  $\frac{1}{8}$   
c. Answers will vary;  $\frac{1}{15}$   
d. Answers will vary; 30

## Lesson 29

### Problem Set

1. a.  $5 \div \frac{1}{10} = 50$ ; 10; 50  
b.  $8 \div \frac{1}{10} = 80$ ; 10; 80  
c.  $5.2 \div \frac{1}{10} = 52$ ; 50; 2; 52  
d.  $8.7 \div \frac{1}{10} = 87$ ; 80; 7; 87  
e.  $5 \div \frac{1}{100} = 500$ ; 100; 500  
f.  $8 \div \frac{1}{100} = 800$ ; 100; 800  
g.  $5.2 \div \frac{1}{100} = 520$ ; 500; 20; 520  
h.  $8.7 \div \frac{1}{100} = 870$ ; 800; 70; 870
2. a. 60  
b. 180  
c. 600  
d. 17  
e. 3,100  
f. 1,100  
g. 1,250  
h. 374  
i. 1,250
3. 46
4. Cheryl; answers will vary.
5. 20

### Exit Ticket

1. 83; 830  
2. 2,800; 280  
3. 1,509  
4. 2,674  
5. 63,298

**Homework**

1. a.  $9 \div \frac{1}{10} = 90$ ; 10; 90  
b.  $6 \div \frac{1}{10} = 60$ ; 10; 60  
c.  $3.6 \div \frac{1}{10} = 36$ ; 30; 6; 36  
d.  $12.8 \div \frac{1}{10} = 128$ ; 120; 8; 128  
e.  $3 \div \frac{1}{100} = 300$ ; 100; 300  
f.  $7 \div \frac{1}{100} = 700$ ; 100; 700  
g.  $4.7 \div \frac{1}{100} = 470$ ; 400; 70; 470  
h.  $11.3 \div \frac{1}{100} = 1,130$ ; 1,100; 30; 1,130
2. a. 20  
b. 230  
c. 500  
d. 72  
e. 5,100  
f. 310  
g. 2,310  
h. 437  
i. 2,450
3. 1,260
4. Geraldine; answers will vary.
5. \$132.64

## Lesson 30

### 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**

1. a. Answer provided.  
b. 90  
c.  $\frac{3.5}{0.5}$ ; 7  
d.  $\frac{3.5}{0.05}$ ; 70  
e.  $\frac{4.2}{0.7}$ ; 6  
f.  $\frac{0.42}{0.07}$ ; 6  
g.  $\frac{10.8}{0.9}$ ; 12  
h.  $\frac{1.08}{0.09}$ ; 12  
i.  $\frac{3.6}{1.2}$ ; 3  
j.  $\frac{0.36}{0.12}$ ; 3  
k.  $\frac{17.5}{2.5}$ ; 7  
l.  $\frac{1.75}{0.25}$ ; 7
2. Answers will vary.
3. a. 12  
b. 6
4. 83
5. 3

**Exit Ticket**

- a.  $\frac{3.2}{0.8}$ ; 4
- b.  $\frac{3.2}{0.08}$ ; 40
- c.  $\frac{7.2}{0.9}$ ; 8
- d.  $\frac{0.72}{0.09}$ ; 8

**Homework**

1. a. 3  
b. 30  
c.  $\frac{4.8}{0.6}$ ; 8  
d.  $\frac{0.48}{0.06}$ ; 8  
e.  $\frac{8.4}{0.7}$ ; 12  
f.  $\frac{0.84}{0.07}$ ; 12  
g.  $\frac{4.5}{0.15}$ ; 3  
h.  $\frac{0.45}{0.15}$ ; 3  
i.  $\frac{14.4}{1.2}$ ; 12  
j.  $\frac{1.44}{0.12}$ ; 12
2. Leann is incorrect; answers will vary
3. a. 8  
b. 16
4. 15

## Lesson 31

### Problem Set

1. a.  $53.2 \div 0.4 \approx \frac{520}{4} = 130$ ; 133  
b.  $1.52 \div 0.8 \approx \frac{16}{8} = 2$ ; 1.9
2. a.  $9.42 \div 0.03 \approx \frac{900}{3} = 300$ ; 314  
b.  $39.36 \div 0.96 \approx \frac{40}{1} = 40$ ; 41
3. a. 154  
b.  $\frac{316}{4}$ ; 79  
c.  $\frac{23.1}{3}$ ; 7.7  
d.  $\frac{1560}{24}$ ; 65
4. a. 27  
b. 21
5. 6

### Exit Ticket

1.  $6.39 \div 0.09 \approx \frac{630}{9} = 70$ ;  $639 \div 9 = 71$
2.  $82.14 \div 0.6 \approx \frac{8400}{60} = 140$ ;  $8214 \div 60 = 136.9$

### Homework

1. a.  $61.6 \div 0.8 \approx \frac{640}{8} = 80$ ; 77  
b.  $5.74 \div 0.7 \approx \frac{56}{7} = 8$ ; 8.2
2. a.  $4.74 \div 0.06 \approx \frac{480}{6} = 80$ ; 79  
b.  $19.44 \div 0.54 \approx \frac{2000}{50} = 40$ ; 36
3. a. 64  
b.  $\frac{752}{8}$ ; 94  
c.  $\frac{124.5}{5}$ ; 24.9  
d.  $\frac{560}{16}$ ; 35
4. 54 green; 36 purple
5. 14

## Lesson 32

### Problem Set

1.  $(3 + 2) \div \frac{1}{3}$  circled
2.  $\frac{28}{5 - \frac{7}{10}}$  and  $28 \div (\frac{4}{5} - \frac{7}{10})$  circled
3. Answers will vary.
4. 3(a); explanations will vary.
5. Answers will vary.
6. 5(a); explanations will vary.
7. a. 12  
b.  $\frac{5}{6}$   
c.  $\frac{1}{12}$   
d.  $\frac{1}{2}$   
e.  $\frac{3}{40}$   
f. 12
8. a.  $\frac{2}{3} \times 20 - 5$   
b.  $\frac{1}{3} \times (20 - 5)$

### Exit Ticket

1. Answers will vary.
2. a. Answers will vary.  
b. Answers will vary.
3. 2(b); explanations will vary.

### Homework

1.  $(7 - 4) \div \frac{1}{5}$  circled.
2.  $42 \div (\frac{2}{3} + \frac{3}{4})$  and  $\frac{42}{\frac{2}{3} + \frac{3}{4}}$  circled.
3. Answers will vary.
4. 3(a); explanations will vary.
5. a. 30  
b.  $1\frac{1}{5}$   
c.  $\frac{1}{100}$   
d.  $\frac{2}{5}$   
e. 400
6. a. Answers will vary.  
b.  $32 - 5 - \frac{1}{3}(32 - 5)$  circled.

## Lesson 33

### Sprint

#### Side A

- |         |           |           |          |
|---------|-----------|-----------|----------|
| 1. 1    | 12. 1,000 | 23. 50    | 34. 325  |
| 2. 10   | 13. 2,000 | 24. 5     | 35. 5    |
| 3. 20   | 14. 8,000 | 25. 0.5   | 36. 5    |
| 4. 70   | 15. 10    | 26. 0.8   | 37. 50   |
| 5. 10   | 16. 100   | 27. 400   | 38. 90   |
| 6. 100  | 17. 200   | 28. 4,000 | 39. 400  |
| 7. 200  | 18. 900   | 29. 4,700 | 40. 80   |
| 8. 600  | 19. 500   | 30. 5,900 | 41. 70   |
| 9. 1    | 20. 5,000 | 31. 30    | 42. 40   |
| 10. 10  | 21. 6,000 | 32. 300   | 43. 12.1 |
| 11. 100 | 22. 2,000 | 33. 320   | 44. 321  |

#### Side B

- |         |           |           |          |
|---------|-----------|-----------|----------|
| 1. 10   | 12. 1,000 | 23. 40    | 34. 236  |
| 2. 10   | 13. 2,000 | 24. 4     | 35. 3    |
| 3. 20   | 14. 9,000 | 25. 0.4   | 36. 3    |
| 4. 80   | 15. 10    | 26. 0.7   | 37. 30   |
| 5. 10   | 16. 100   | 27. 500   | 38. 80   |
| 6. 100  | 17. 200   | 28. 5,000 | 39. 400  |
| 7. 200  | 18. 700   | 29. 5,300 | 40. 70   |
| 8. 700  | 19. 400   | 30. 6,800 | 41. 80   |
| 9. 1    | 20. 4,000 | 31. 20    | 42. 30   |
| 10. 10  | 21. 5,000 | 32. 200   | 43. 12.1 |
| 11. 100 | 22. 8,000 | 33. 230   | 44. 211  |

**Problem Set**

1. a.  $\frac{1}{12} L$   
b.  $1\frac{1}{2} L$
2. a. 7  
b.  $\frac{1}{4}$  hr or 15 min  
c. 14
3. a. 18  
b. 6
4. a. 90  
b. 360
5. Answers will vary.
6. Answers will vary.

**Exit Ticket**

- a. 6  
b. 12

**Homework**

1. a.  $\frac{1}{15} \text{ kg}$   
b.  $1\frac{1}{3} \text{ kg}$
2. a. 19  
b. 38
3. a. 13  
b. 6
4. a. Answers will vary.  
b. Answers will vary.
5. Answers will vary.