



Answer Key

# GRADE 5 • MODULE 6

Problem Solving with the Coordinate Plane

## Lesson 1

### Problem Set

- 3
  - 2 thirds
  - 7 thirds or  $2\frac{1}{3}$
  - 14 thirds or  $4\frac{2}{3}$
- Second tick mark from left
  - Fifth tick mark from left
  - First tick mark from right
  - 4 tick marks vertically from S
- 3 tick marks from the right
  - 7 tick marks from the right
  - $5\frac{3}{4}$
  - $3\frac{1}{4}$
  - 5
  - 2.5
- Lenox is correct. Any orientation is acceptable
- No. Explanations will vary.

### Exit Ticket

- 6 tick marks from the right
  - $\frac{1}{5}$
  - $\frac{3}{5}$

### Homework

- 3
  - 8
  - 14
  - 11
- 10 tick marks from the left
  - 11 tick marks from the left
  - 3 tick marks from the right
  - 1 tick mark from the right
- Second tick mark left of 0
  - 7 tick marks left of 0
  - $11\frac{1}{2}$
  - $\frac{1}{2}$
  - 9
  - 5
- Explanations will vary.

## Lesson 2

### Problem Set

- Answers will vary.
  - Answers will vary.
- Triangle, circle, square, octagon
  - Triangle
  - Parallelogram
  - Diamond
- $2, 1; 2, 3\frac{3}{4}; 0, 3\frac{3}{4}; 3\frac{3}{4}, 0)$
  - Star
  - Shapes plotted correctly.
- Explanations will vary.

### Exit Ticket

- $\frac{1}{2}, 4\frac{1}{2}; 1\frac{1}{2}, 2; 4, 4\frac{1}{2}$
- Shapes plotted correctly.

### Homework

- Answers will vary.
  - Answers may vary.
- Circle; diamond; triangle; heart
  - Star
  - Square
- $2\frac{1}{2}, 4; 4, 3; 1, 2; 0, 4\frac{1}{2}; 3\frac{1}{2}, 5\frac{1}{2}$
  - Heart and star
  - X plotted correctly
  - Square plotted correctly
  - Triangle plotted correctly
- Explanations will vary.

## Lesson 3

### Problem Set

- Constructions match directions.
- J, I, H, D
  - F, E, H, K
  - $G(2\frac{2}{3}, 3\frac{1}{3})$
  - K
  - M
  - $K(5\frac{1}{3}, 2\frac{2}{3}), I(3\frac{1}{3}, 1\frac{2}{3}), B(5\frac{2}{3}, 0), C(0, 5\frac{1}{3})$
  - M, F, A, N
  - L
  - (0, 0), origin
  - Points marked at given coordinate pairs
  - $\frac{8}{3}$  or  $2\frac{2}{3}$
  - $\frac{7}{3}$  or  $2\frac{1}{3}$
  - Less than
  - Explanations will vary.

### Exit Ticket

- Constructions and point placement(s) match directions.

### Homework

- Constructions match given parameters
- R, M, Q
  - O, M, L
  - Q
  - K
  - R
  - $T(2\frac{3}{5}, 2\frac{4}{5}), U(\frac{3}{5}, \frac{3}{5}), S(1, \frac{2}{5}), K(1\frac{1}{5}, 3\frac{2}{5})$
  - U, X, L, W
  - Point with equal x and y coordinates plotted
  - Origin, (0, 0)
  - Points plotted correctly
  - $\frac{4}{5}$
  - 1
  - Equal to
  - Explanations will vary.

## Lesson 4

### Problem Set

1. Students play Battleship.

### Exit Ticket

1. a. Answers will vary.  
b. Above (2, 3), below (2, 1)

### Homework

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

## Lesson 5

### Problem Set

- Line E drawn and labeled
  - $x, y$
  - Answers will vary.
  - $(3, 4); (11, 4)$ ; answers will vary.
  - Answers will vary.
  - Answers will vary.
- Points plotted correctly
  - Line drawn and labeled
  - $1\frac{1}{2}$
  - Perpendicular; parallel
  - Answers will vary.
- (b) circled; explanations will vary.
- (c) circled; answers will vary.
- $x$ -values are all  $5\frac{1}{2}$ ;  $y$ -values will vary.
  - $x$ -values are all  $5\frac{1}{2}$ ;  $y$ -values will vary.
  - $x$ -values are all  $5\frac{1}{2}$ ;  $y$ -values will vary.
- $y$ -values are all 0;  $x$ -values will vary.
  - $y$ -values are all 0;  $x$ -values will vary.
  - $y$ -values are all 0;  $x$ -values will vary.
- Answers and explanations will vary.

### Exit Ticket

- Answers will vary.
- $y$ -axis;  $x$ -axis
- Answers will vary.
- A  $(4, 6)$ ; B  $(4, 3)$ ; points C and D will vary.
- Answers will vary.

**Homework**

1.
  - a. Line  $g$  drawn and labeled
  - b.  $x$ -axis,  $y$ -axis
  - c. Answers will vary.
  - d. A (4, 8); B (9, 8); points C and D will vary.
  - e.  $y$ -value
  - f. Answers will vary.
2. Points plotted correctly
  - a. Line  $f$  drawn and labeled
  - b.  $\frac{3}{4}$
  - c. perpendicular, parallel
  - d. Answers will vary.
3. (a) circled; explanations will vary.
4. (b) circled; answers will vary.
5. Answers will vary.
6. Answers will vary.
7. Answers will vary.

## Lesson 6

### Problem Set

- Points plotted and labeled correctly
  - Lines drawn through given points
  - $CD$
  - $AB$
  - Answers will vary.
  - Answers will vary.
- $3\frac{1}{2}$
  - $(\frac{1}{2}, 3\frac{1}{2})$
  - Appropriate section shaded
  - $4\frac{1}{2}$
  - $(4\frac{1}{2}, 5)$
  - Appropriate section shaded
- Tasks completed on plane

### Exit Ticket

- Answers will vary.
- Answers will vary.
- Answers will vary.
- Answers will vary.
- Answers will vary.
- Answers will vary.
- Answers will vary.
- Answers will vary.

### Homework

- Points plotted and labeled correctly.
  - Lines drawn through given points
  - $\overline{ST}$
  - $\overline{CA}$
  - Answers will vary.
  - Answers will vary.
- $1\frac{1}{2}$
  - $(2, 1\frac{1}{2})$
  - Appropriate section shaded
  - $5\frac{1}{2}$
  - $(5\frac{1}{2}, 3\frac{1}{2})$
  - Appropriate section shaded
- (a–d) Lines constructed and labeled on plane
- (a–c) Tasks completed on plane



## Lesson 7

### Problem Set

- $(2, 3); (4, 5); (6, 7)$ 
  - Line drawn correctly
  - Answers will vary.
  - Answers will vary.
- $(\frac{1}{2}, 1), (1, 2), (1\frac{1}{2}, 3), (2, 4)$ 
  - Line drawn correctly
  - Answers will vary.
  - Answers will vary.
- Answers may vary.
  - Answers may vary.
  - Y-coordinates are the same
  - 6; 0; 30; 30; 36
  - 5
  - $d, c$  or  $e, b, d, e$

### Exit Ticket

$(0, 4); (2, 6); (3, 7); (7, 11)$

- Line drawn correctly
- Answers will vary.
- Answers may vary.

### Homework

- $(2, 0); (3\frac{1}{2}, 1\frac{1}{2}); (4\frac{1}{2}, 2\frac{1}{2}); (6, 4)$ 
  - Line drawn correctly
  - Answers will vary.
  - Answers may vary.
- $(0, 0); (\frac{1}{4}, \frac{3}{4}); (\frac{1}{2}, 1\frac{1}{2}); (1, 3)$ 
  - Line drawn correctly
  - Answers will vary.
  - Answers will vary.
- 10
  - Answers may vary.
  - Answers will vary.
  - Answers will vary.
  - $y = \frac{x}{2}$
  - $m; n; \ell; q$

## Lesson 8

### Sprint

#### Side A

- |           |          |           |            |
|-----------|----------|-----------|------------|
| 1. 623    | 12. 300  | 23. 4,100 | 34. 91.9   |
| 2. 6,230  | 13. 0.2  | 24. 7,600 | 35. 1,820  |
| 3. 62,300 | 14. 2    | 25. 10    | 36. 14,700 |
| 4. 736    | 15. 20   | 26. 70    | 37. 202.1  |
| 5. 7,360  | 16. 0.08 | 27. 7.2   | 38. 1,721  |
| 6. 73,600 | 17. 0.8  | 28. 8.02  | 39. 64     |
| 7. 6      | 18. 8    | 29. 19    | 40. 82     |
| 8. 0.6    | 19. 3.2  | 30. 7,412 | 41. 96     |
| 9. 0.06   | 20. 6.7  | 31. 680   | 42. 39     |
| 10. 3     | 21. 91   | 32. 49.01 | 43. 124.8  |
| 11. 30    | 22. 74   | 33. 1,607 | 44. 564.8  |

#### Side B

- |           |          |           |            |
|-----------|----------|-----------|------------|
| 1. 461    | 12. 900  | 23. 5,200 | 34. 81.8   |
| 2. 4,610  | 13. 0.4  | 24. 8,700 | 35. 2,930  |
| 3. 46,100 | 14. 4    | 25. 10    | 36. 25,800 |
| 4. 892    | 15. 40   | 26. 80    | 37. 303.2  |
| 5. 8,920  | 16. 0.07 | 27. 0.83  | 38. 2,831  |
| 6. 89,200 | 17. 0.7  | 28. 9.03  | 39. 42     |
| 7. 3      | 18. 7    | 29. 17    | 40. 66     |
| 8. 0.3    | 19. 4.5  | 30. 8,523 | 41. 93     |
| 9. 0.03   | 20. 7.8  | 31. 790   | 42. 36     |
| 10. 9     | 21. 28   | 32. 58.02 | 43. 84.4   |
| 11. 90    | 22. 19   | 33. 2,708 | 44. 524.4  |

**Problem Set**

1. Answers will vary.
  - a. Points accurately plotted
  - b. Accurate line drawn
  - c. Answers will vary.
2. Answers will vary.
  - a. Points accurately plotted
  - b. Accurate line drawn
  - c. Answers will vary.
3. Answers will vary.
  - a. Points accurately plotted
  - b. Accurate line drawn
  - c. Answers will vary.
4. a. Answers will vary.
  - b. Lines  $m$  and  $n$ ;  $(0, 1)$
  - c. Lines  $m$  and  $\ell$
  - d. Answers will vary.

**Exit Ticket**

- 5,  $(0, 5)$ ; 9,  $(2, 9)$ ; 12,  $(3.5, 12)$
- a. Points accurately plotted
  - b. Accurate line drawn
  - c. Answers will vary.

**Homework**

1. Answers will vary.
  - a. Points accurately plotted
  - b. Accurate line drawn
  - c. Answers will vary.
2. Answers will vary.
  - a. Points accurately plotted.
  - b. Accurate line drawn
  - c. Answers will vary.
3. Coordinates will vary.
  - a. Accurate lines drawn
  - b. Lines  $n$  and  $\ell$ ;  $(1, 1)$
  - c. Lines  $\ell$  and  $m$
  - d. Answers will vary.

## Lesson 9

### Problem Set

- $a$ : 2, (1,2); 6, (5,6); 10, (9,10); 14, (13,14)  
 $b$ : 4, (0,4); 9, (5,9); 12, (8,12); 15, (11,15)
  - Accurate lines drawn
  - Answers will vary.
  - Answers will vary.
- $e$ : 0, (0,0); 4, (2,4); 10, (5,10); 18, (9,18)  
 $f$ : 0, (0,0); 3, (6,3); 5, (10,5); 10, (20,10)
  - Accurate lines drawn
  - Answers will vary.
  - Answers will vary.

### Exit Ticket

- $l$ : 5, (0, 5); 6, (1, 6); 2, (2, 7); 9, (4, 9)  
 $m$ : 0, (0,0); 5, (1,5); 10, (2,10); 20, (4,20)

### Homework

- $a$ : 0, (1, 0); 3, (4, 3); 8, (9, 8); 15, (16, 15)  
 $b$ : 0, (5, 0); 3, (8, 3); 9, (14, 9); 15, (20, 15)
  - Accurate lines drawn
  - Answers will vary.
  - Answers will vary.
- $e$ : 0, (0,0); 3, (1,3); 12, (4,12); 18, (6,18)  
 $f$ : 0, (0,0); 3, (1, (3, 1)); 3, (9,3); 5, (15,5)
  - Accurate lines drawn
  - Answers will vary.
  - Answers will vary.

## Lesson 10

### Problem Set

- Answer provided.
  - Accurate line drawn.
  - Answers will vary.
  - Answers will vary.
  - Accurate line drawn.
  - Answers will vary.
  - Answers will vary.
  - Answers will vary.
- Answers will vary.
- Answer provided.
  - Accurate line drawn.
  - Answers will vary.
  - Answers will vary.
  - Accurate line drawn.
  - Answers will vary.
  - Answers will vary.
  - Answers will vary.
  - Answers will vary.
- Add 5 to  $x$  and  $x$  plus  $\frac{1}{2}$  circled.

### Exit Ticket

- Answer provided.
- Accurate line drawn.
- Answers will vary.
- Answers will vary.

### Homework

- Answer provided.
  - Accurate line drawn.
  - Answers will vary.
  - Answers will vary.
  - Accurate line drawn.
  - Answers will vary.
  - Answers will vary.
  - Answers will vary.
- Answers will vary.
- Use  $y = x$
  - Accurate line drawn.
  - Answers will vary.
  - Answers will vary (e.g.,  $y$  is  $x$  doubled).
  - Accurate line drawn.
  - Answers will vary.
  - Answers will vary (e.g.,  $y$  is half of  $x$ ).
  - Answers will vary.
  - Answers will vary.

## Lesson 11

### Sprint

#### Side A

- |        |        |        |        |
|--------|--------|--------|--------|
| 1. 3   | 12. 9  | 23. 13 | 34. 50 |
| 2. 3   | 13. 10 | 24. 17 | 35. 3  |
| 3. 3   | 14. 20 | 25. 17 | 36. 17 |
| 4. 3   | 15. 30 | 26. 12 | 37. 12 |
| 5. 4   | 16. 90 | 27. 11 | 38. 5  |
| 6. 4   | 17. 2  | 28. 13 | 39. 13 |
| 7. 4   | 18. 2  | 29. 14 | 40. 60 |
| 8. 14  | 19. 2  | 30. 16 | 41. 5  |
| 9. 13  | 20. 2  | 31. 15 | 42. 19 |
| 10. 14 | 21. 2  | 32. 6  | 43. 20 |
| 11. 8  | 22. 3  | 33. 8  | 44. 70 |

#### Side B

- |        |        |        |        |
|--------|--------|--------|--------|
| 1. 4   | 12. 9  | 23. 14 | 34. 40 |
| 2. 4   | 13. 10 | 24. 18 | 35. 4  |
| 3. 4   | 14. 20 | 25. 18 | 36. 18 |
| 4. 4   | 15. 30 | 26. 13 | 37. 13 |
| 5. 5   | 16. 80 | 27. 12 | 38. 6  |
| 6. 5   | 17. 3  | 28. 14 | 39. 14 |
| 7. 5   | 18. 3  | 29. 15 | 40. 50 |
| 8. 15  | 19. 3  | 30. 17 | 41. 6  |
| 9. 14  | 20. 3  | 31. 16 | 42. 19 |
| 10. 15 | 21. 3  | 32. 7  | 43. 20 |
| 11. 8  | 22. 4  | 33. 9  | 44. 60 |

**Problem Set**

- $\ell$ : 0, (0, 0); 2, (1, 2); 4, (2, 4); 6, (3, 6)  
 $m$ : 1, (0, 1); 3, (1, 3); 5, (2, 5); 7, (3, 7)

  - Accurate lines drawn
  - Answers will vary.
  - Answers will vary.
- (2,  $1\frac{2}{3}$ ) and ( $1\frac{1}{2}$ ,  $1\frac{1}{2}$ ) circled

  - Answers will vary.
  - Answers will vary.
- $\ell$ : 0, (0, 0);  $\frac{1}{2}$ , ( $1, \frac{1}{2}$ ); 1, (2, 1);  $1\frac{1}{2}$ , ( $3, 1\frac{1}{2}$ )  
 $m$ :  $1\frac{1}{2}$ , ( $0, 1\frac{1}{2}$ ); 2, (1, 2);  $2\frac{1}{2}$ , ( $2, 2\frac{1}{2}$ ); 3, (3, 3)

  - Accurate lines drawn
  - Answers will vary.
  - Answers will vary.
- (2,  $\frac{1}{3}$ ) and (3, 1) circled

  - Answers will vary.
  - Answers will vary.

**Exit Ticket**

- $\ell$ : 0, (0, 0); 3, (1, 3); 6, (2, 6); 9, (3, 9)  
 $m$ : 1, (0, 1); 4, (1, 4); 7, (2, 7); 10, (3, 10)

  - Accurate lines drawn
  - Answers will vary.
- (1,  $1\frac{1}{3}$ ) and (2,  $1\frac{2}{3}$ ) circled

**Homework**

- $\ell$ : 2, (1, 2); 4, (2, 4); 6, (3, 6)  
 $m$ : 1, (1, 1); 3, (2, 3); 5, (3, 5)

  - Accurate lines drawn
  - Answers will vary.
  - Answers will vary.
- (2, 2) circled

  - Answers will vary.
  - Answers will vary.
- $\ell$ : 1, (0, 1);  $1\frac{1}{2}$ , ( $1, 1\frac{1}{2}$ ); 2, (2, 2);  $2\frac{1}{2}$ , ( $3, 2\frac{1}{2}$ )  
 $m$ :  $1\frac{1}{4}$ , ( $0, 1\frac{1}{4}$ );  $1\frac{3}{4}$ , ( $1, 1\frac{3}{4}$ );  $2\frac{1}{4}$ , ( $2, 2\frac{1}{4}$ );  $2\frac{3}{4}$ , ( $3, 2\frac{3}{4}$ )

  - Accurate lines drawn
  - Answers will vary.
  - Answers will vary.
- (1,  $\frac{1}{4}$ ) and ( $3, 1\frac{3}{4}$ ) circled

  - Answers will vary.
  - Answers will vary.

## Lesson 12

### Sprint

#### Side A

- |           |           |           |           |
|-----------|-----------|-----------|-----------|
| 1. 4      | 12. 8.139 | 23. 7.983 | 34. 6.122 |
| 2. 4.9    | 13. 0.04  | 24. 7.981 | 35. 9.342 |
| 3. 4.93   | 14. 0.047 | 25. 2.6   | 36. 8.047 |
| 4. 4.932  | 15. 1.047 | 26. 2.685 | 37. 9.107 |
| 5. 3.932  | 16. 1.847 | 27. 2.285 | 38. 6.87  |
| 6. 1.932  | 17. 1.837 | 28. 4.513 | 39. 4.548 |
| 7. 0.4    | 18. 1.817 | 29. 3.57  | 40. 6.348 |
| 8. 0.43   | 19. 0.004 | 30. 3.576 | 41. 6.528 |
| 9. 0.439  | 20. 7.004 | 31. 3.536 | 42. 6.546 |
| 10. 8.439 | 21. 7.904 | 32. 7.942 | 43. 6.136 |
| 11. 8.339 | 22. 7.984 | 33. 6.125 | 44. 9.513 |

#### Side B

- |           |           |           |           |
|-----------|-----------|-----------|-----------|
| 1. 5      | 12. 8.239 | 23. 7.984 | 34. 7.123 |
| 2. 5.9    | 13. 0.05  | 24. 7.982 | 35. 1.453 |
| 3. 5.93   | 14. 0.057 | 25. 3.6   | 36. 8.057 |
| 4. 5.932  | 15. 1.057 | 26. 3.685 | 37. 1.207 |
| 5. 4.932  | 16. 1.857 | 27. 3.285 | 38. 7.98  |
| 6. 2.932  | 17. 1.847 | 28. 5.524 | 39. 5.548 |
| 7. 0.5    | 18. 1.827 | 29. 4.57  | 40. 7.348 |
| 8. 0.53   | 19. 0.005 | 30. 4.576 | 41. 7.528 |
| 9. 0.539  | 20. 7.005 | 31. 4.536 | 42. 7.546 |
| 10. 8.539 | 21. 7.905 | 32. 6.143 | 43. 7.137 |
| 11. 8.439 | 22. 7.985 | 33. 7.126 | 44. 1.623 |



**Problem Set**

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

**Exit Ticket**

- a. Answers will vary.
- b. Answers will vary.

**Homework**

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

## Lesson 13

### Problem Set

- 4 sets of parallel lines drawn
- Five sets of parallel segments circled
- Parallel segment drawn through point S
  - Parallel segment drawn through point T
  - Parallel segment drawn through point U
  - Parallel segment drawn through point V
  - Parallel segment drawn through point W
  - Parallel segment drawn through point Z
- Parallel lines drawn

### Exit Ticket

- Parallel segment drawn through point H
- Parallel segment drawn through point I
- Parallel segment drawn through point J

### Homework

- 4 sets of parallel lines drawn
- Five sets of parallel segments circled
- Parallel segment drawn through point S
  - Parallel segment drawn through point T
  - Parallel segment drawn through point U
  - Parallel segment drawn through point V
  - Parallel segment drawn through point W
  - Parallel segment drawn through point Z
- Parallel lines drawn

## Lesson 14

### Problem Set

1.
  - a.  $(6, 4); (11, 6)$
  - b. Accurate  $\overrightarrow{PR}$  drawn
  - c. Accurate coordinate pairs plotted
  - d. Accurate  $\overrightarrow{ST}$  drawn
  - e.  $\overrightarrow{PR} \parallel \overrightarrow{ST}$  circled
  - f. Answers will vary.
  - g. Accurate  $\overrightarrow{UV}$  drawn
2.
  - a.  $(1, 3\frac{1}{2}$  or 3.5);  $(3, 1\frac{1}{2}$  or 1.5)
  - b. Accurate  $\overrightarrow{EF}$  drawn
  - c. Answers will vary.
  - d. Accurate  $\overrightarrow{LM}$  drawn
  - e. Explanations will vary.
  - f. Answers will vary.
  - g. Explanations will vary.

### Exit Ticket

- a.  $(2, 4); (5, 3)$ .
- b. Accurate  $\overrightarrow{EF}$  drawn
- c. Answers will vary.
- d. Accurate  $\overrightarrow{LM}$  drawn

### Homework

1.
  - a.  $(6, 4); (3, 6)$
  - b. Accurate  $\overrightarrow{MN}$  drawn
  - c. Accurate coordinate pairs plotted
  - d. Accurate  $\overrightarrow{JK}$  drawn
  - e.  $\overrightarrow{MN} \parallel \overrightarrow{JK}$  circled
  - f. Answers will vary.
  - g. Accurate  $\overrightarrow{FG}$  drawn
2.
  - a.  $(4, 3\frac{1}{2}$  or 3.5);  $(2, 3)$
  - b. Accurate  $\overrightarrow{AB}$  drawn
  - c. Answers will vary.
  - d. Accurate  $\overrightarrow{CD}$  drawn
  - e. Explanations will vary.
  - f. Answers will vary.
  - g. Explanations will vary.

## Lesson 15

### Problem Set

- 4 pairs circled
- Perpendicular lines drawn
- Perpendicular segment drawn
  - Perpendicular segment drawn
  - Perpendicular segment drawn
  - Perpendicular segment drawn
- Perpendicular lines drawn.

### Exit Ticket

- Perpendicular segment drawn
- Perpendicular segment drawn
- Perpendicular segment drawn
- Perpendicular segment drawn

### Homework

- 4 pairs circled
- Perpendicular lines drawn
- Perpendicular segment drawn
  - Perpendicular segment drawn
  - Perpendicular segment drawn
  - Perpendicular segment drawn
- Perpendicular lines drawn

## Lesson 16

### Problem Set

- $\overline{AB}$  drawn
  - Point C plotted
  - $\overline{AC}$  drawn
  - Explanations will vary.
  - Explanations will vary.
- $\overline{QT}$  drawn
  - Point R plotted
  - $\overline{QR}$  drawn
  - Explanations will vary.
  - $x$ -coordinates:  $2\frac{1}{2}$ ;  $y$ -coordinates:  $1\frac{1}{2}$
  - $x$ -coordinates:  $1\frac{1}{2}$ ;  $y$ -coordinates:  $2\frac{1}{2}$
  - Explanations will vary.
- Answers will vary.

### Exit Ticket

- $\overline{UV}$  drawn
- Point W plotted
- $\overline{VW}$  drawn
- Explanations will vary.

### Homework

- $\overline{PQ}$  drawn
  - Point R plotted
  - $\overline{PR}$  drawn
  - Explanations will vary.
  - $x$ -coordinates: 4;  $y$ -coordinates: 1
  - $x$ -coordinates: 1;  $y$ -coordinates: 4
  - Explanations will vary.
- $\overline{BC}$  drawn
  - Point D plotted
  - $\overline{BD}$  drawn
  - Explanations will vary.
  - $x$ -coordinates:  $1\frac{1}{2}$ ;  $y$ -coordinates: 1
  - $x$ -coordinates: 1;  $y$ -coordinates:  $1\frac{1}{2}$
  - Explanations will vary.
- Answers will vary.

## Lesson 17

### Problem Set

1. Symmetric figure drawn
2. Symmetric figure drawn
3.
  - a. Answers will vary.
  - b.  $\overline{DE}$ ,  $\overline{EF}$ ,  $\overline{DF}$  drawn
  - c. Answers will vary.
4. Explanations will vary.

### Exit Ticket

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

### Homework

1. Symmetric figure drawn
2. Symmetric figure drawn
3.
  - a. Answers will vary.
  - b. Accurate  $\overline{DE}$ ,  $\overline{EF}$ , and  $\overline{DF}$  drawn
  - c. Answers will vary.
4. Explanations will vary.

## Lesson 18

### Problem Set

- Line drawn
  - Points plotted; line segments drawn
  - Symmetric figure drawn;  
(0.1, 0.9); (0.2, 1.1); (0.3, 0.9); (0.5, 1.3);  
(0.6, 1.2); (0.8, 1.2); (0.9, 1.3); (1.1, 0.9);  
(1.2, 1.1); (1.3, 0.9)
  - Answers will vary.
  - Answers will vary.
- Vertical line drawn;  $x$  is always 0.7
- Line drawn.
  - Figures will vary.
  - Accurate coordinates recorded.
  - Answers will vary.
  - Chart completed
  - Answers will vary.

### Exit Ticket

No; answers will vary.

### Homework

- Line drawn
  - Points plotted; figure drawn
  - Symmetric figure drawn;  
(9, 13); (9, 12); (8, 10); (6, 9); (6, 3);  
(9, 2); (5, 2)
  - Answers will vary.
  - Answers will vary.
- Line drawn
  - Points plotted; figure drawn
  - Symmetric figure drawn;  
 $(\frac{1}{2}, \frac{1}{2})$ ; (2, 1);  $(1\frac{1}{2}, 1\frac{1}{2})$ ; (4, 2);  $(3\frac{1}{2}, 3\frac{1}{2})$ ;  
 $(4\frac{1}{2}, 4)$ ; (5, 5)
  - Answers will vary.
  - Answers will vary.

## Lesson 19

**Sprint** (Note: Answers are given in unit form for ease of reading, but students may answer in standard form.)

### Side A

- |             |              |               |               |
|-------------|--------------|---------------|---------------|
| 1. 1 half   | 12. 1 fourth | 23. 1 third   | 34. 5 sixths  |
| 2. 1 third  | 13. 2 thirds | 24. 1 seventh | 35. 4 fifths  |
| 3. 1 fourth | 14. 1 half   | 25. 2 thirds  | 36. 4 fifths  |
| 4. 1 half   | 15. 1 third  | 26. 1 half    | 37. 4 fifths  |
| 5. 1 third  | 16. 1 fifth  | 27. 1 third   | 38. 2 thirds  |
| 6. 1 fourth | 17. 2 thirds | 28. 1 eighth  | 39. 3 fourths |
| 7. 1 half   | 18. 1 half   | 29. 2 thirds  | 40. 4 fifths  |
| 8. 1 third  | 19. 1 third  | 30. 3 fourths | 41. 5 sixths  |
| 9. 1 fourth | 20. 1 sixth  | 31. 3 fourths | 42. 2 thirds  |
| 10. 1 half  | 21. 2 thirds | 32. 3 fourths | 43. 5 sixths  |
| 11. 1 third | 22. 1 half   | 33. 5 sixths  | 44. 4 fifths  |

### Side B

- |             |              |               |               |
|-------------|--------------|---------------|---------------|
| 1. 1 half   | 12. 1 fourth | 23. 1 third   | 34. 4 fifths  |
| 2. 1 third  | 13. 2 thirds | 24. 1 seventh | 35. 4 fifths  |
| 3. 1 fourth | 14. 1 half   | 25. 2 thirds  | 36. 5 sixths  |
| 4. 1 half   | 15. 1 third  | 26. 1 half    | 37. 5 sixths  |
| 5. 1 third  | 16. 1 fifth  | 27. 1 third   | 38. 2 thirds  |
| 6. 1 fourth | 17. 2 thirds | 28. 1 eighth  | 39. 3 fourths |
| 7. 1 half   | 18. 1 half   | 29. 2 thirds  | 40. 4 fifths  |
| 8. 1 third  | 19. 1 third  | 30. 3 fourths | 41. 5 sixths  |
| 9. 1 fourth | 20. 1 sixth  | 31. 3 fourths | 42. 2 thirds  |
| 10. 1 half  | 21. 2 thirds | 32. 3 fourths | 43. 4 fifths  |
| 11. 1 third | 22. 1 half   | 33. 4 fifths  | 44. 5 sixths  |



**Problem Set**

1.
  - a.  $2\frac{1}{4}$  inches
  - b. 2:30–3:00; answers will vary.
  - c. 4:30–5:00; answers will vary.
  - d. Answers will vary.
  - e. 9 inches
2.
  - a. January
  - b. July; answers will vary.
  - c. May; answers will vary.
  - d. 35.5 gallons
  - e. \$188.51

**Exit Ticket**

- a. 4 feet
- b. Week 2
- c. Weeks 1 and 2; answers will vary.
- d. Answers will vary.

**Homework**

1.
  - a. \$1,250
  - b. ~\$875
  - c. Answers will vary.
  - d. May 16; answers will vary.
  - e. May 18; answers will vary.
2.
  - a. 1 hour 50 minutes
  - b. 5 km
  - c. ~1:15–1:17 and ~2:14–2:20; answers will vary.
  - d. Swimming portion; answers will vary.
  - e. Biking portion; line is steepest at bike race

## Lesson 20

**Sprint** (Note: Answers are given in unit form for ease of reading, but students may write answers in standard form.)

### Side A

- |                     |                     |                      |                      |
|---------------------|---------------------|----------------------|----------------------|
| 1. 3 and 1 half     | 12. 2 and 1 fourth  | 23. 2 and 7 eighths  | 34. 1 and 3 eighths  |
| 2. 2 and 1 half     | 13. 2 and 3 fourths | 24. 2 and 5 eighths  | 35. 2 and 7 tenths   |
| 3. 1 and 1 half     | 14. 3 and 1 fourth  | 25. 2 and 3 eighths  | 36. 3 and 3 fifths   |
| 4. 1 half           | 15. 1 and 9 tenths  | 26. 2 and 1 eighth   | 37. 3 and 4 sevenths |
| 5. 2 thirds         | 16. 2 and 1 tenth   | 27. 1 and 1 eighth   | 38. 2 and 3 tenths   |
| 6. 1 and 2 thirds   | 17. 1 and 3 tenths  | 28. 3 and 6 sevenths | 39. 2 and 1 half     |
| 7. 3 and 2 thirds   | 18. 3 and 7 tenths  | 29. 2 and 1 seventh  | 40. 3 and 3 fourths  |
| 8. 3 and 1 third    | 19. 2 and 4 fifths  | 30. 1 and 4 sevenths | 41. 1 and 1 fourth   |
| 9. 1 and 1 third    | 20. 2 and 3 fifths  | 31. 3 and 3 sevenths | 42. 3 and 5 sixths   |
| 10. 1 and 3 fourths | 21. 2 and 1 fifth   | 32. 2 and 2 sevenths | 43. 2 and 2 thirds   |
| 11. 1 and 1 fourth  | 22. 2 and 2 fifths  | 33. 3 and 1 fourth   | 44. 1 and 1 third    |

### Side B

- |                    |                    |                      |                      |
|--------------------|--------------------|----------------------|----------------------|
| 1. 1 half          | 12. 2 and 1 third  | 23. 1 and 7 eighths  | 34. 3 and 3 eighths  |
| 2. 1 and 1 half    | 13. 2 and 2 thirds | 24. 1 and 5 eighths  | 35. 1 and 7 tenths   |
| 3. 2 and 1 half    | 14. 3 and 1 third  | 25. 1 and 3 eighths  | 36. 2 and 3 fifths   |
| 4. 3 and 1 half    | 15. 2 and 9 tenths | 26. 1 and 1 eighth   | 37. 2 and 4 sevenths |
| 5. 3 fourths       | 16. 1 and 1 tenth  | 27. 3 and 1 eighth   | 38. 1 and 3 tenths   |
| 6. 1 and 3 fourths | 17. 3 and 3 tenths | 28. 2 and 6 sevenths | 39. 1 and 1 half     |
| 7. 3 and 3 fourths | 18. 2 and 7 tenths | 29. 1 and 1 seventh  | 40. 2 and 1 fourth   |
| 8. 3 and 1 fourth  | 19. 1 and 4 fifths | 30. 3 and 4 sevenths | 41. 3 and 3 fourths  |
| 9. 1 and 1 fourth  | 20. 1 and 3 fifths | 31. 2 and 3 sevenths | 42. 2 and 1 sixth    |
| 10. 1 and 2 thirds | 21. 1 and 1 fifth  | 32. 1 and 2 sevenths | 43. 1 and 1 third    |
| 11. 1 and 1 third  | 22. 2 and 2 fifths | 33. 2 and 1 fourth   | 44. 3 and 2 thirds   |

**Problem Set**

1.
  - a. 10 lb
  - b. 6 lb
  - c. Week 9; Week 11; answers will vary.
  - d. Answers will vary.
2.
  - a. 12
  - b. 2008–2009
  - c. 2019

**Exit Ticket**

- a. 8 dozen; answers will vary.
- b. Saturday and Sunday; answers will vary.
- c. Friday, Saturday, Sunday
- d. 23 doz

**Homework**

- a. 16 km; 5 hr
- b. 9 a.m.; answers will vary.
- c. Before; answers will vary.
- d. 7 a.m.–8 a.m. and 10 a.m.–11 a.m.
- e. 8 a.m.–9 a.m.; answers will vary.

## Lesson 21

### Problem Set

- 13 in;  $169 \text{ in}^2$ ;  $84.5 \text{ in}^2$
- Necklace: \$85; scarf: \$51; notebook: \$8.50;  
\$76.50
- Both rooms green: \$2,607.75;  
den green, dining room brown: \$2,636.55
- 16 miles
- Pumpkins 7.5 lb; squash 2.5 lb
- 75 trucks
- $\frac{12}{19}$
- 8 scoops
- a.  $47 \frac{61}{64} \text{ in}^2$   
b.  $143 \frac{55}{64} \text{ in}^2$   
c.  $\frac{1}{3}$

### Homework

- Sara: 148 miles; Eli: 74 miles; Ashley: 222 miles; Hazel: 444 miles
- Answers will vary.

## Lesson 22

### Problem Set

See Lesson 21 Answer Key.

### Homework

1. Answer provided.  
9 ft<sup>2</sup>  
4 ft<sup>2</sup>  
Answer provided.  
1 ft<sup>2</sup>  
Answer provided.  
25 ft<sup>2</sup>  
16 ft<sup>2</sup>  
4 ft<sup>2</sup>  
9 ft<sup>2</sup>  
16 ft<sup>2</sup>
2. Answers will vary.

## Lesson 23

**Sprint** (Note: Answers are shown here in unit form for ease of reading, but students may answer in standard form.)

### Side A

- |               |                |                |                 |
|---------------|----------------|----------------|-----------------|
| 1. 6 fifths   | 12. 9 fourths  | 23. 27 tenths  | 34. 33 eighths  |
| 2. 11 fifths  | 13. 11 fourths | 24. 49 tenths  | 35. 35 eighths  |
| 3. 16 fifths  | 14. 13 fourths | 25. 9 eighths  | 36. 39 eighths  |
| 4. 21 fifths  | 15. 15 fourths | 26. 11 sixths  | 37. 17 twelfths |
| 5. 5 fourths  | 16. 13 thirds  | 27. 29 sixths  | 38. 19 twelfths |
| 6. 7 fourths  | 17. 14 thirds  | 28. 37 eighths | 39. 25 twelfths |
| 7. 7 fifths   | 18. 13 fifths  | 29. 13 eighths | 40. 37 twelfths |
| 8. 8 fifths   | 19. 18 fifths  | 30. 19 eighths | 41. 31 twelfths |
| 9. 9 fifths   | 20. 23 fifths  | 31. 33 tenths  | 42. 41 twelfths |
| 10. 14 fifths | 21. 13 sixths  | 32. 47 tenths  | 43. 47 twelfths |
| 11. 19 fifths | 22. 25 eighths | 33. 24 fifths  | 44. 55 twelfths |

### Side B

- |               |                |                |                 |
|---------------|----------------|----------------|-----------------|
| 1. 3 halves   | 12. 7 thirds   | 23. 23 tenths  | 34. 23 eighths  |
| 2. 5 halves   | 13. 8 thirds   | 24. 31 tenths  | 35. 31 eighths  |
| 3. 7 halves   | 14. 10 thirds  | 25. 7 sixths   | 36. 25 sixths   |
| 4. 9 halves   | 15. 11 thirds  | 26. 11 eighths | 37. 13 twelfths |
| 5. 4 thirds   | 16. 17 fourths | 27. 23 sixths  | 38. 23 twelfths |
| 6. 5 thirds   | 17. 19 fourths | 28. 29 eighths | 39. 49 twelfths |
| 7. 13 tenths  | 18. 12 fifths  | 29. 21 eighths | 40. 29 twelfths |
| 8. 17 tenths  | 19. 17 fifths  | 30. 15 eighths | 41. 35 twelfths |
| 9. 19 tenths  | 20. 22 fifths  | 31. 43 tenths  | 42. 43 twelfths |
| 10. 29 tenths | 21. 19 sixths  | 32. 37 tenths  | 43. 53 twelfths |
| 11. 39 tenths | 22. 17 eighths | 33. 17 sixths  | 44. 59 twelfths |

**Problem Set**

See Lesson 21 Answer Key.

**Homework**

1.  $P = 147$  cm
2. Answers will vary.
3. Answers will vary.

## Lesson 24

### Problem Set

See Lesson 21 Answer Key.

### Homework

1. 14 bags
2. Answers will vary. (*Hint: Think three-dimensionally.*)
3. Answers will vary.



## Lesson 25

### Problem Set

See Lesson 21 Answer Key.

### Homework

1. Fred: 48 flowers; Ethyl: 84 flowers
2. Answers will vary.
3. Answers will vary

## Lesson 26

### Problem Set

- Expressions will vary;  $11\frac{2}{5}$
  - Expressions will vary;  $7\frac{2}{3}$
  - Expressions will vary;  $28\frac{4}{5}$
  - Expressions will vary; 9
- Expressions will vary;  $5\frac{1}{3}$
  - Expressions will vary; 6
- $>$ ; explanations will vary.
  - $>$ ; explanations will vary.
  - $<$ ; explanations will vary.

### Reflection

Answers will vary.

### Homework

- Expressions will vary; 4,000
  - Expressions will vary;  $87\frac{1}{2}$
  - Expressions will vary; 5
  - Expressions will vary;  $\frac{5}{48}$
- Expressions will vary;  $4\frac{1}{5}$
  - Expressions will vary;  $5\frac{1}{3}$
- $<$ ; explanations will vary.
  - $=$ ; explanations will vary.
  - $<$ ; explanations will vary.

## Lesson 27

### Problem Set

- Model drawn; 15 minutes
  - Model drawn; 24 marbles
- Word problems will vary; 12  
Word problems will vary; 50  
Word problems will vary;  $6\frac{1}{12}$

### Reflection

- Answers will vary.

### Homework

- Model drawn; 9 students
  - Model drawn; 8 apples
- Word problems will vary; 84  
Word problems will vary;  $8\frac{2}{9}$   
Word problems will vary; 36

## Lesson 28

### Problem Set

Answers will vary.

### Reflection

Answers will vary.

### Homework

Answers will vary.

## Lesson 29

**Sprint** (Note: Answers are given here in unit form for ease of reading, but students may answer in standard form.)

### Side A

- |                    |                    |                    |                    |
|--------------------|--------------------|--------------------|--------------------|
| 1. 6               | 12. 15 hundredths  | 23. 1 and 2 tenths | 34. 21             |
| 2. 6 tenths        | 13. 14             | 24. 12 hundredths  | 35. 24 hundredths  |
| 3. 6 hundredths    | 14. 1 and 4 tenths | 25. 12 thousandths | 36. 24             |
| 4. 9               | 15. 14 hundredths  | 26. 12 thousandths | 37. 4 and 2 tenths |
| 5. 9 tenths        | 16. 12             | 27. 35             | 38. 49 hundredths  |
| 6. 9 hundredths    | 17. 1 and 2 tenths | 28. 3 and 5 tenths | 39. 48 thousandths |
| 7. 8               | 18. 12 hundredths  | 29. 35 hundredths  | 40. 54 thousandths |
| 8. 8 tenths        | 19. 12 hundredths  | 30. 35 thousandths | 41. 4 and 8 tenths |
| 9. 8 hundredths    | 20. 12 thousandths | 31. 35 thousandths | 42. 63 hundredths  |
| 10. 15             | 21. 12 thousandths | 32. 16             | 43. 64 thousandths |
| 11. 1 and 5 tenths | 22. 12             | 33. 1 and 8 tenths | 44. 72 thousandths |

### Side B

- |                    |                    |                    |                    |
|--------------------|--------------------|--------------------|--------------------|
| 1. 8               | 12. 12 hundredths  | 23. 1 and 6 tenths | 34. 24             |
| 2. 8 tenths        | 13. 18             | 24. 16 hundredths  | 35. 27 hundredths  |
| 3. 8 hundredths    | 14. 1 and 8 tenths | 25. 16 thousandths | 36. 32             |
| 4. 6               | 15. 18 hundredths  | 26. 16 thousandths | 37. 4 and 2 tenths |
| 5. 6 tenths        | 16. 15             | 27. 45             | 38. 36 hundredths  |
| 6. 6 hundredths    | 17. 1 and 5 tenths | 28. 4 and 5 tenths | 39. 48 thousandths |
| 7. 9               | 18. 15 tenths      | 29. 45 hundredths  | 40. 54 thousandths |
| 8. 9 tenths        | 19. 15 hundredths  | 30. 45 thousandths | 41. 4 and 8 tenths |
| 9. 9 hundredths    | 20. 15 thousandths | 31. 45 thousandths | 42. 63 hundredths  |
| 10. 12             | 21. 15 thousandths | 32. 12             | 43. 49 thousandths |
| 11. 1 and 2 tenths | 22. 16             | 33. 1 and 4 tenths | 44. 72 thousandths |

## Problem Set

Vocabulary definitions and terms are used to play Math Pictionary.

## Reflection

Answers will vary.

## Homework

1.
  - a. Quadrilateral, trapezoid; answers will vary.
  - b. Quadrilateral; answers will vary.
  - c. Quadrilateral, trapezoid, parallelogram; answers will vary.
  - d. Quadrilateral, trapezoid, parallelogram, rhombus, kite; answers will vary.
2.
  - a. Figure drawn
  - b. Quadrilateral, trapezoid, parallelogram, rhombus, kite; answers will vary.
  - c. Quadrilateral, trapezoid, parallelogram, rhombus, kite; answers will vary.

## Lesson 30

### Problem Set

Game direction cards

### Reflection

Answers will vary.

### Homework

Answers will vary.

## Lesson 31

### Problem Set

Spiral drawn

### Reflection

Answers will vary.

### Homework

1. Spiral drawn
2. Answers will vary.
3. 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377



## Lesson 32

### Problem Set

1.	Week	Add	Total	Week	Add	Total
	1	Answer provided	Answer provided	27	\$27	\$378
	2	Answer provided	Answer provided	28	\$28	\$406
	3	Answer provided	Answer provided	29	\$29	\$435
	4	Answer provided	Answer provided	30	\$30	\$465
	5	\$5	\$15	31	\$31	\$496
	6	\$6	\$21	32	\$32	\$528
	7	\$7	\$28	33	\$33	\$561
	8	\$8	\$36	34	\$34	\$595
	9	\$9	\$45	35	\$35	\$630
	10	\$10	\$55	36	\$36	\$666
	11	\$11	\$66	37	\$37	\$703
	12	\$12	\$78	38	\$38	\$741
	13	\$13	\$91	39	\$39	\$780
	14	\$14	\$105	40	\$40	\$820
	15	\$15	\$120	41	\$41	\$861
	16	\$16	\$136	42	\$42	\$903
	17	\$17	\$153	43	\$43	\$946
	18	\$18	\$171	44	\$44	\$990
	19	\$19	\$190	45	\$45	\$1,035
	20	\$20	\$210	46	\$46	\$1,081
	21	\$21	\$231	47	\$47	\$1,128
	22	\$22	\$253	48	\$48	\$1,176
	23	\$23	\$276	49	\$49	\$1,225
	24	\$24	\$300	50	\$50	\$1,275
	25	\$25	\$325	51	\$51	\$1,326
	26	\$26	\$351	52	\$52	\$1,378

2.	Week	Add	Total	Week	Add	Total
	1	Answer provided	Answer provided	27	\$6.75	\$94.50
	2	Answer provided	Answer provided	28	\$7.00	\$101.50
	3	Answer provided	Answer provided	29	\$7.25	\$108.75
	4	Answer provided	Answer provided	30	\$7.50	\$116.25
	5	\$1.25	\$3.75	31	\$7.75	\$124.00
	6	\$1.5	\$5.25	32	\$8.00	\$132.00
	7	\$1.75	\$7.00	33	\$8.25	\$140.25
	8	\$2.00	\$9.00	34	\$8.50	\$148.75
	9	\$2.25	\$11.25	35	\$8.75	\$157.50
	10	\$2.50	\$13.75	36	\$9.00	\$166.50
	11	\$2.75	\$16.50	37	\$9.25	\$175.75
	12	\$3.00	\$19.50	38	\$9.50	\$185.25
	13	\$3.25	\$22.75	39	\$9.75	\$195.00
	14	\$3.50	\$26.25	40	\$10.00	\$205.00
	15	\$3.75	\$30.00	41	\$10.25	\$215.25
	16	\$4.00	\$34.00	42	\$10.50	\$225.75
	17	\$4.25	\$38.25	43	\$10.75	\$236.50
	18	\$4.50	\$42.75	44	\$11.00	\$247.50
	19	\$4.75	\$47.50	45	\$11.25	\$258.75
	20	\$5.00	\$52.50	46	\$11.50	\$270.25
	21	\$5.25	\$57.75	47	\$11.75	\$282.00
	22	\$5.50	\$63.25	48	\$12.00	\$294.00
	23	\$5.75	\$69.00	49	\$12.25	\$306.25
	24	\$6.00	\$75.00	50	\$12.50	\$318.75
	25	\$6.25	\$81.25	51	\$12.75	\$331.50
	26	\$6.50	\$87.75	52	\$13.00	\$344.50

3.	Week	Add	Total	Week	Add	Total
	1	Answer provided	Answer provided	27	\$196,418	\$514,228
	2	Answer provided	Answer provided	28	\$317,811	\$832,039
	3	Answer provided	Answer provided	29	\$514,229	\$1,346,268
	4	Answer provided	Answer provided	30	\$832,040	\$2,178,308
	5	\$5	\$12	31	\$1,346,269	\$3,524,577
	6	\$8	\$20	32	\$2,178,309	\$5,702,886
	7	\$13	\$33	33	\$3,524,578	\$9,227,464
	8	\$21	\$54	34	\$5,702,887	\$14,930,351
	9	\$34	\$88	35	\$9,227,465	\$24,157,816
	10	\$55	\$143	36	\$14,930,352	\$39,088,168
	11	\$89	\$232	37	\$24,157,817	\$63,245,985
	12	\$144	\$376	38	\$39,088,169	\$102,334,154
	13	\$233	\$609	39	\$63,245,986	\$165,580,140
	14	\$377	\$986	40	\$102,334,155	\$267,914,295
	15	\$610	\$1,596	41	\$165,580,141	\$433,494,436
	16	\$987	\$2,583	42	\$267,914,296	\$701,408,732
	17	\$1,597	\$4,180	43	\$433,494,437	\$1,134,903,169
	18	\$2,584	\$6,764	44	\$701,408,733	\$1,836,311,902
	19	\$4,181	\$10,945	45	\$1,134,903,170	\$2,971,215,072
	20	\$6,765	\$17,710	46	\$1,836,311,903	\$4,807,526,975
	21	\$10,946	\$28,656	47	\$2,971,215,073	\$7,778,742,048
	22	\$17,711	\$46,367	48	\$4,807,526,976	\$12,586,269,024
	23	\$28,657	\$75,024	49	\$7,778,742,049	\$20,365,011,073
	24	\$46,368	\$121,392	50	\$12,586,269,025	\$32,951,280,098
	25	\$75,025	\$196,417	51	\$20,365,011,074	\$53,316,291,172
	26	\$121,393	\$317,810	52	\$32,951,280,099	\$86,267,571,271

**Reflection**

Answers will vary.

**Homework**

1. 13; 21; 34; 55; 89; 144; 233; 377; 610; 987; 1,597; 2,584; 4,181; 6,765
2. Jonas was correct; examples will vary.
3. Answers will vary.

## Lesson 33

### Sprint

#### Side A

- |         |          |          |          |
|---------|----------|----------|----------|
| 1. 1    | 12. 1000 | 23. 50   | 34. 325  |
| 2. 10   | 13. 2000 | 24. 5    | 35. 5    |
| 3. 20   | 14. 8000 | 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. 4000 | 39. 400  |
| 7. 200  | 18. 900  | 29. 4700 | 40. 80   |
| 8. 600  | 19. 500  | 30. 5900 | 41. 70   |
| 9. 1    | 20. 5000 | 31. 30   | 42. 40   |
| 10. 10  | 21. 6000 | 32. 300  | 43. 12.1 |
| 11. 100 | 22. 2000 | 33. 320  | 44. 321  |

#### Side B

- |         |          |          |          |
|---------|----------|----------|----------|
| 1. 10   | 12. 1000 | 23. 40   | 34. 236  |
| 2. 10   | 13. 2000 | 24. 4    | 35. 3    |
| 3. 20   | 14. 9000 | 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. 5000 | 39. 400  |
| 7. 200  | 18. 700  | 29. 5300 | 40. 70   |
| 8. 700  | 19. 400  | 30. 6800 | 41. 80   |
| 9. 1    | 20. 4000 | 31. 20   | 42. 30   |
| 10. 10  | 21. 5000 | 32. 200  | 43. 12.1 |
| 11. 100 | 22. 8000 | 33. 230  | 44. 211  |

**Problem Set**

Box 1:  $19 \text{ cm} \times 13 \text{ cm} \times 4 \text{ cm}$ ;  $988 \text{ cm}^2$

Box 2: Answers will vary.

Lid: Answers will vary.

1. Answers will vary.

2. Answers will vary.

3. Answers will vary.

**Reflection**

Answers will vary.

**Homework**

1.  $110 \text{ cm}^3$ ; answers will vary.

2. Answers will vary;  $V = 616 \text{ cm}^3$

## Lesson 34

### Problem Set

Answers will vary.

### Reflection

Answers will vary.