

To the Student

This *Skills Practice Workbook* gives you additional examples and problems for the concept exercises in each lesson. The exercises are designed to aid your study of mathematics by reinforcing important mathematical skills needed to succeed in the everyday world. The materials are organized by chapter and lesson, with one Skills Practice worksheet for every lesson in *IMPACT Mathematics, Course 1*.

Always keep your workbook handy. Along with your textbook, daily homework, and class notes, the completed Skills Practice Workbook can help you in reviewing for quizzes and tests.

To the Teacher

These worksheets are the same ones found in the Chapter Resource Masters for *IMPACT Mathematics, Course 1*. The answers to these worksheets are available at the end of each Chapter Resource Masters Booklet.



The McGraw-Hill Companies

Copyright © by The McGraw-Hill Companies, Inc. All rights reserved.
Except as permitted under the United States Copyright Act, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without prior written permission of the publisher.

Send all inquiries to:
Glencoe/McGraw-Hill
8787 Orion Place
Columbus, OH 43240

ISBN: 978-0-07-891166-8

MHID: 0-07-891166-4

Skills Practice Workbook, IMPACT Mathematics, Course 1

Printed in the United States of America.

1 2 3 4 5 6 7 8 9 10 066 14 13 12 11 10 09 08

Table of Contents

Lesson/Title	Page
1-1 Patterns in Geometry	1
1-2 Angles	2
1-3 Measure Around	3
2-1 Patterns in Fractions.	4
2-2 Patterns in Decimals.	5
2-3 Fraction and Decimal Equivalents.	6
3-1 Number Sense.	7
3-2 Patterns	8
3-3 Variables and Rules	9
3-4 Apply Properties	10
4-1 Add and Subtract Fractions	11
4-2 Multiply and Divide Fractions	12
4-3 Multiply and Divide Decimals.	13
4-4 What is Typical?	14
5-1 Ratios and Rates.	15
5-2 Proportions	16
5-3 Similarity and Congruence	17
6-1 Use Percents.	18
6-2 Percent of a Quantity	19
6-3 Percents and Wholes	20
7-1 Squares	21
7-2 Calculate Areas	22
7-3 Surface Area and Volume	23
7-4 Capacity	24

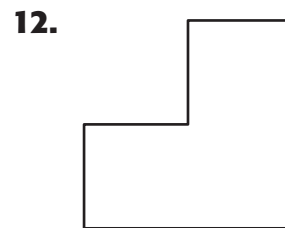
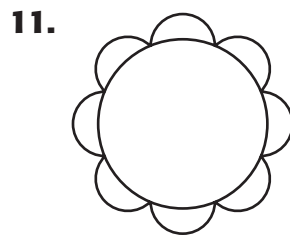
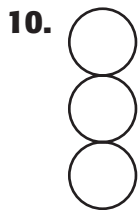
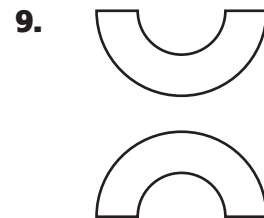
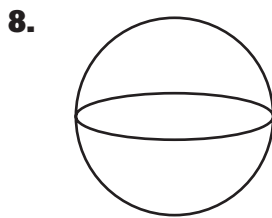
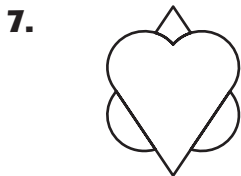
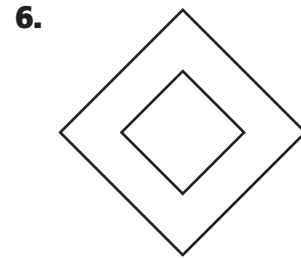
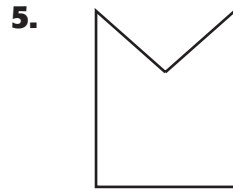
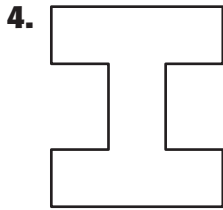
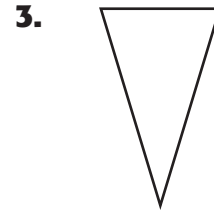
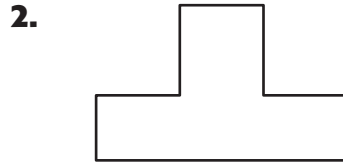
8-1	Interpret Graphs	25
8-2	Draw and Label Graphs	26
8-3	Graph in Four Quadrants	27
9-1	Understand Equations.	28
9-2	Backtracking	29
9-3	Guess-Check-and-Improve	30
10-1	Data Displays.	31
10-2	Collect and Analyze Data	32
10-3	The Language of Chance	33
10-4	Make Matches	34

Lesson 1.1 Skills Practice

Patterns in Geometry

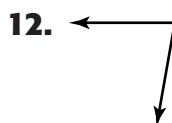
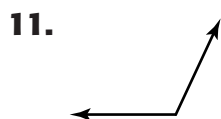
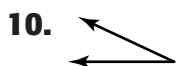
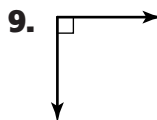
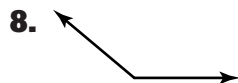
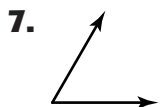
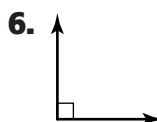
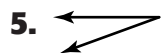
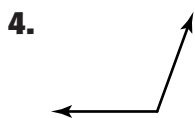
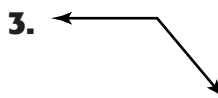
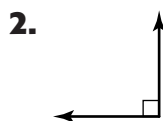
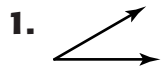
Lines of Symmetry

Draw all lines of symmetry for each figure.



Lesson 1.2 Skills Practice**Angles**

Use a protractor to find the measure of each angle. Then classify each angle as *acute*, *obtuse*, *right*, or *straight*.

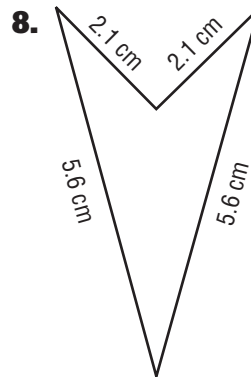
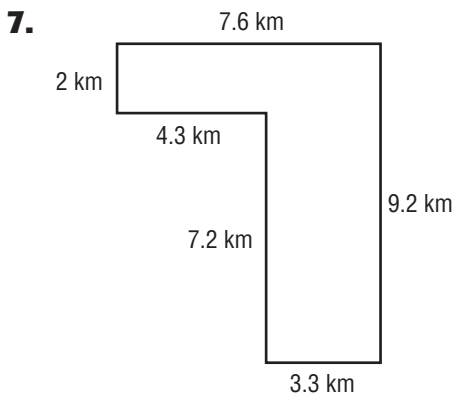
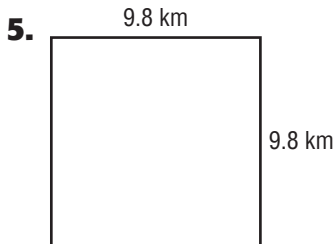
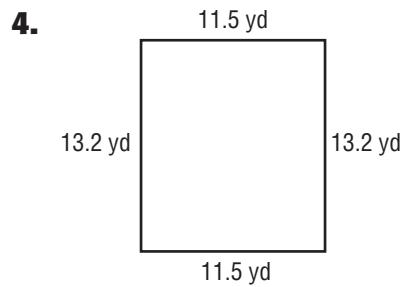
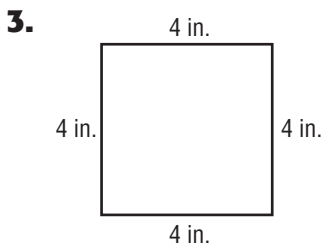
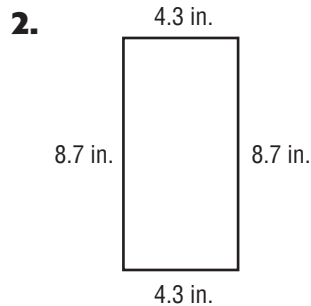
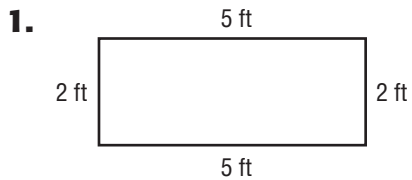


13. Draw a 50° angle. Include a curved angle mark to show which angle is 50° .

14. Draw a 110° angle. Include a curved angle mark to show which angle is 110° .

Lesson 1.3 Skills Practice**Measure Around**

Find the perimeter of each figure.



Lesson 2.1 Skills Practice**Patterns in Fractions**

Find a fraction equivalent to the given fraction in lowest terms.

1. $\frac{7}{35}$

2. $\frac{6}{15}$

3. $\frac{4}{24}$

4. $\frac{10}{15}$

5. $\frac{20}{45}$

6. $\frac{4}{16}$

7. $\frac{27}{81}$

8. $\frac{8}{28}$

9. $\frac{18}{24}$

Name the fraction family to which each of the given fractions belongs.

10. $\frac{1}{2}$

11. $\frac{8}{10}$

12. $\frac{20}{60}$

13. $\frac{6}{15}$

14. $\frac{15}{60}$

15. $\frac{7}{8}$

16. $\frac{27}{81}$

17. $\frac{7}{12}$

18. $\frac{28}{36}$

Each set of fractions are in the same fraction family. Name one other member of the family.

19. $\frac{2}{3}, \frac{4}{6}, \frac{6}{9}$

20. $\frac{2}{10}, \frac{9}{20}, \frac{6}{36}$

21. $\frac{1}{4}, \frac{2}{8}, \frac{4}{16}$

22. $\frac{2}{7}, \frac{6}{21}, \frac{10}{35}$

23. $\frac{14}{10}, \frac{21}{15}, \frac{28}{20}$

24. $\frac{21}{24}, \frac{35}{40}, \frac{42}{48}$

25. $\frac{2}{5}, \frac{8}{20}, \frac{20}{50}$

26. $1\frac{1}{4}, 1\frac{2}{8}, 1\frac{4}{16}$

27. $\frac{3}{2}, \frac{15}{10}, \frac{18}{12}$

Replace each \bigcirc with $<$, $>$, or $=$ to make a true statement.

28. $\frac{10}{25} \bigcirc \frac{1}{5}$

29. $\frac{15}{19} \bigcirc \frac{30}{38}$

30. $\frac{20}{38} \bigcirc \frac{21}{28}$

31. $1\frac{1}{2} \bigcirc 1\frac{7}{8}$

32. $\frac{37}{22} \bigcirc \frac{18}{11}$

33. $\frac{5}{2} \bigcirc \frac{30}{12}$

Lesson 2.2 Skills Practice
Patterns in DecimalsUse $>$, $<$, or $=$ to compare each pair of decimals.

1. $2.4 \bigcirc 2.04$

2. $6.23 \bigcirc 6.32$

3. $0.02 \bigcirc 0.020$

4. $12.05 \bigcirc 12.50$

5. $0.92 \bigcirc 0.095$

6. $39.21 \bigcirc 39.021$

7. $0.849 \bigcirc 0.0851$

8. $12.1 \bigcirc 12.10$

9. $21.967 \bigcirc 2.1968$

10. $0.0128 \bigcirc 0.128$

11. $1.4601 \bigcirc 1.460$

12. $19.08 \bigcirc 19.079$

Predict the value of each product without doing any calculations.

13. $8.3 \cdot 100$

14. $19.2 \cdot \frac{1}{10}$

15. $0.24 \cdot 10,000$

16. $623 \cdot \frac{1}{100}$

17. $15.07 \cdot 10$

18. $1.02 \cdot \frac{1}{10} \cdot \frac{1}{10}$

Order each set of decimals from least to greatest.

19. 1.25, 1.52, 1.02, 1.50

20. 67.39, 68.004, 67.039, 67.04

21. 15.0421, 14.52, 14.521, 15.421

22. 0.0012, 0.0211, 0.0002, 0.0022

Order each set of decimals from greatest to least.

23. 4.99, 4.001, 5.0, 4.01

24. 12.0012, 120.012, 12.012, 12.12

25. 3.5, 3.05, 3.55, 3.555

26. 45.0, 40.5, 40.09, 49.5

Lesson 2.3 Skills Practice

Fraction and Decimal Equivalents

Write each fraction or mixed number as a decimal. Use a bar to show a repeating decimal.

1. $\frac{3}{5}$

2. $\frac{1}{8}$

3. $\frac{9}{11}$

4. $\frac{3}{14}$

5. $\frac{3}{40}$

6. $\frac{8}{11}$

7. $\frac{5}{12}$

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

9. $\frac{7}{9}$

10. $\frac{11}{15}$

Write each decimal as a fraction. Simplify each fraction.

11. 0.7

12. 8.2

13. 212.5

14. 19.91

15. 17.01

16. 0.88

17. 61.3

18. 49.48

19. 0.6

20. 18.101

Use your calculator to find a decimal approximation for each fraction. Tell whether each fraction is a terminating or repeating decimal.

21. $\frac{2}{3}$

22. $\frac{5}{8}$

23. $\frac{15}{20}$

24. $4\frac{3}{8}$

25. $\frac{8}{9}$

26. $\frac{33}{100}$

27. Order $\frac{4}{9}$, $\frac{444}{1,000}$, and 0.4 from least to greatest.

28. Order $\frac{8}{9}$, $\frac{8}{10}$, and $0.\overline{80}$ from least to greatest.

29. **Opinion** In a school survey, 787 out of 1,000 students preferred hip-hop music to techno. Is this figure more or less than $\frac{7}{9}$ of those surveyed? Explain.

Lesson 3.1 Skills Practice**Number Sense**

Write as a repeated multiplication. Then write the product as a whole number.

1. 5^3

2. 12^2

3. 8^4

4. 2^2

5. 5^1

6. 1^9

7. 4^5

8. 3^7

9. 10^3

10. 5^8

Write in exponential form. Then write as a whole number.

11. $3 \cdot 3 \cdot 3 \cdot 3$

12. $5 \cdot 5 \cdot 5 \cdot 5 \cdot 5 \cdot 5$

13. $6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6$

14. $1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1 \cdot 1$

15. $7 \cdot 7 \cdot 7 \cdot 7 \cdot 7$

16. $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

17. $8 \cdot 8 \cdot 8 \cdot 8 \cdot 8 \cdot 8 \cdot 8$

18. $10 \cdot 10 \cdot 10 \cdot 10 \cdot 10 \cdot 10$

19. $23 \cdot 23$

20. 9

Write each of the following as a power of 10.

21. 100

22. 1,000

23. 1,000,000

24. 1,000,000,000

25. 1,000,000,000,000

Lesson 3.2 Skills Practice**Patterns**

Describe the pattern in each number sequence. Then find the next two numbers in the sequence.

1. 6, 10, 14, 18, ...

2. 12, 24, 48, 96, ...

3. 108, 36, 12, 4, ...

4. $\frac{1}{64}, \frac{1}{32}, \frac{1}{16}, \frac{1}{8}, \dots$

5. 63, 56, 49, 42, ...

6. 5, 20, 35, 50, ...

7. 4, 12, 36, 108, ...

8. $1, 1\frac{2}{3}, 2\frac{1}{3}, 3, \dots$

Find the missing number in each sequence.

9. 54, $\underline{\quad? \quad}$, 42, 36, ...

10. $\underline{\quad? \quad}$, 12, 48, 192, ...

11. 16, 4, $\underline{\quad? \quad}$, $\frac{1}{4}, \dots$

12. $\frac{1}{6}, \frac{1}{3}, \underline{\quad? \quad}, \frac{4}{3}, \dots$

Evaluate each expression.

13. $4 + 7 \cdot 8 - 2$

14. $(5 + 11) + 8 \div 4$

15. $6 \cdot 2^4 \div 3$

16. $(18 + 2 \cdot 3) + (12 - 4)$

17. $\frac{(4^2 + 8 \div 2)}{(8 - 3 \cdot 2)}$

18. $22 - 12 - (6 - 2)$

19. $20 + (10 - 7)^2$

20. $5^2 + 4^2 + 3^2$

Lesson 3.3 Skills Practice

Variables and Rules

Write a rule for each table using the given letters to represent the variable.

1.

u	3	5	7	9
v	21	35	49	63

2.

w	1	2	3	4
y	5	8	11	14

3.

m	2	4	6	8
n	18	16	14	12

4.

p	3	4	5	6
q	9	11	13	15

5.

x	1	2	3	4
y	2	6	10	14

6.

t	2	4	6	8
r	4	16	36	64

Evaluate each expression when $w = 2$, $x = 3$, and $y = 4$.

7. $3w + 1$

8. $5x$

9. $20 - 2y$

10. $(x + 15) \div 2$

11. $8 - 2w$

12. $y \div 4$

13. $2y - 1$

14. $1 + 2x$

15. $4(w + 3)$

16. $x + x + 5$

17. $9 + 3y$

18. $5w \div 2$

19. $3(w + 1)$

20. $18 - 2y$

21. $x + (2x - 1)$

22. $4x - x$

23. $w(w - 1)$

24. y^2

Translate each phrase into an algebraic expression.

25. three times a number minus eight

26. the product of seventy and a number

Lesson 3.4 Skills Practice**Apply Properties**

Name the property shown by each statement.

1. $55 + 6 = 6 + 55$

2. $6 \cdot 7 = 7 \cdot 6$

3. $(5 + 3) + 7 = 5 + (3 + 7)$

4. $9 \cdot (8 - 5) = 9 \cdot 8 - 9 \cdot 5$

5. $9 + (5 + 35) = (9 + 5) + 35$

6. $4 \cdot (3 \cdot 8) = (4 \cdot 3) \cdot 8$

7. $6 \cdot (11 + 13) = 6 \cdot 11 + 6 \cdot 13$

8. $(15 - 11) \cdot 2 = 15 \cdot 2 - 11 \cdot 2$

Insert parentheses if needed to make each equation true.

9. $2 \cdot 5 + 4 = 18$

10. $7 - 3 \cdot 5 = 20$

11. $8 + 11 \cdot 6 = 114$

12. $4 \cdot 7 \cdot 2 = 56$

13. $18 - 7 - 5 = 6$

14. $9 \cdot 4 - 2 = 18$

15. $11 + 4 + 20 = 35$

16. $18 - 8 \cdot 4 = 40$

Determine which of the following expressions are commutative. If the expression is commutative, use the commutative property to write an equivalent expression. If the expression is not commutative, write “not commutative.”

17. $11 \cdot 2$

18. $8 \div 4$

19. $9 - 7$

20. $14 + 3$

Find each sum or product mentally.

21. $15 + 23 + 35$

22. $13 + 8 + 7 + 2$

23. $50 \cdot 7 \cdot 2$

24. $55 \cdot 6 \cdot 0$

25. $2 \cdot 13 \cdot 5$

26. $44 + 57 + 6$

27. $25 \cdot 7 \cdot 4$

28. $76 + 33 + 24$

Lesson 4.1 Skills Practice**Add and Subtract Fractions**

Add or subtract. Write in simplest form.

1.
$$\begin{array}{r} \frac{2}{3} \\ + \frac{5}{6} \\ \hline \end{array}$$

2.
$$\begin{array}{r} \frac{5}{6} \\ + \frac{3}{4} \\ \hline \end{array}$$

3.
$$\begin{array}{r} \frac{2}{3} \\ - \frac{1}{6} \\ \hline \end{array}$$

4.
$$\begin{array}{r} \frac{1}{2} \\ + \frac{7}{8} \\ \hline \end{array}$$

5.
$$\begin{array}{r} \frac{4}{7} \\ - \frac{1}{2} \\ \hline \end{array}$$

6.
$$\begin{array}{r} \frac{1}{6} \\ - \frac{1}{12} \\ \hline \end{array}$$

7.
$$\frac{5}{8} - \frac{1}{4}$$

8.
$$\frac{1}{3} + \frac{5}{7}$$

9.
$$\frac{1}{5} + \frac{5}{6}$$

10.
$$\frac{3}{4} + \frac{11}{12}$$

11.
$$\frac{1}{2} - \frac{2}{5}$$

12.
$$\frac{11}{12} - \frac{3}{4}$$

13.
$$8\frac{3}{5} - 4\frac{2}{5}$$

14.
$$1\frac{5}{7} + \frac{2}{7}$$

15.
$$11\frac{1}{4} + 3\frac{3}{8}$$

16.
$$6\frac{5}{9} - 2\frac{1}{18}$$

17.
$$14\frac{1}{3} + 5\frac{4}{5}$$

18.
$$10\frac{3}{4} - 2\frac{2}{3}$$

19. How much more is $\frac{3}{8}$ gallon than $\frac{1}{4}$ gallon?20. How much more is $\frac{3}{4}$ ounce than $\frac{1}{3}$ ounce?21. Evaluate $x - y$ if $x = \frac{7}{10}$ and $y = \frac{3}{5}$.22. Evaluate $s + t$ if $s = \frac{2}{3}$ and $t = \frac{5}{6}$.

Lesson 4.2 Skills Practice**Multiply and Divide Fractions**

Multiply. Write in simplest form.

1. $\frac{3}{4} \times \frac{1}{2}$

2. $\frac{1}{3} \times \frac{2}{5}$

3. $\frac{1}{3} \times 6$

4. $\frac{2}{5} \times \frac{3}{7}$

5. $\frac{3}{8} \times 10$

6. $\frac{1}{6} \times \frac{3}{5}$

7. $\frac{2}{9} \times 3$

8. $\frac{9}{10} \times \frac{4}{5}$

9. $\frac{7}{8} \times \frac{2}{9}$

10. $3\frac{1}{3} \times 2\frac{1}{4}$

11. $\frac{8}{9} \times 5\frac{1}{7}$

12. $2\frac{5}{8} \times 6$

13. $3\frac{3}{4} \times 2\frac{4}{5}$

14. $\frac{5}{7} \times 4\frac{3}{8}$

15. $20 \times 1\frac{2}{5}$

Divide. Write in simplest form.

16. $\frac{5}{6} \div \frac{1}{3}$

17. $\frac{9}{10} \div \frac{1}{2}$

18. $\frac{1}{2} \div \frac{3}{5}$

19. $8 \div \frac{4}{5}$

20. $\frac{7}{12} \div \frac{5}{6}$

21. $\frac{9}{10} \div \frac{1}{4}$

For Exercises 19–24, evaluate each expression if $r = 1\frac{2}{3}$, $s = 2\frac{1}{5}$, and $t = \frac{3}{4}$.

22. $4t$

23. st

24. $\frac{1}{2}r$

25. rs

Find the value of each expression if $x = \frac{1}{4}$, $y = \frac{3}{5}$, and $z = \frac{2}{3}$.

26. $x \div y$

27. $z \div 2$

28. $y \div z$

Lesson 4.3 Skills Practice
Multiply and Divide Decimals

Multiply.

1. $2.3 \cdot 1.21$

2. $0.6 \cdot 0.91$

3. $6.5 \cdot 0.04$

4. $8.54 \cdot 3.27$

5. $5.02 \cdot 1.07$

6. $0.003 \cdot 2.9$

7. $0.93 \cdot 6.8$

8. $7.1 \cdot 0.004$

9. $3.007 \cdot 6.1$

10. $2.52 \cdot 0.15$

Divide. Round to the nearest tenth if necessary.

11. $11 \overline{)132.22}$

12. $16 \overline{)142.4}$

13. $79.2 \div 9$

14. $47.4 \div 15$

15. $217.14 \div 21$

16. $5 \overline{)34.65}$

17. $1.32 \overline{)3.96}$

18. $34.9 \overline{)628.2}$

19. $0.105 \div 0.5$

20. $1.296 \div 0.16$

Lesson 4.4 Skills Practice**What Is Typical?**

Find the mean, median, mode, and range for each set of data.

1. 6, 9, 2, 4, 3, 6, 5
 2. 13, 6, 7, 13, 6
 3. 1, 15, 9, 12, 18, 9, 5, 14, 7
 4. 13, 7, 17, 19, 7, 15, 11, 7
 5. 3, 9, 4, 3, 9, 4, 2, 3, 8
 6. 25, 18, 14, 27, 25, 14, 18, 25, 23
 7. 8, 3, 9, 4, 6, 7, 5
 8. 28, 32, 23, 43, 32, 27, 21, 34
 9. 157, 124, 157, 124, 157, 139
 10. 42, 35, 27, 42, 38, 35, 29, 24
11. Write a sentence that describes how the data items in Exercise 5 vary.
12. Why is mode not the best choice to describe the data in Exercise 5? Explain.

Museums Use the table showing the number of visitors to the art museum each month.

13. What is the mean of the data?
14. What is the median of the data?
15. What is the mode of the data?
16. Which measure of central tendency best describes the data? Explain.
17. Make a line plot showing the number of visitors to the art museum.

Visitors to the Art Museum (thousands)			
3	11	5	4
5	3	6	3
12	2	2	4

Lesson 5.1 Skills Practice**Ratios and Rates**

Write each ratio as a fraction in simplest form.

1. 3 sailboats to 6 motorboats
2. 4 tulips to 9 daffodils
3. 5 baseballs to 25 softballs
4. 2 days out of 8 days
5. 6 poodles out of 18 dogs
6. 10 yellow eggs out of 12 colored eggs
7. 12 sheets of paper out of 28
8. 18 hours out of 24 hours
9. 16 elms out of 20 trees
10. 15 trumpets to 9 trombones
11. 5 ducks to 30 geese
12. 14 lions to 10 tigers
13. 6 sodas out of 16 drinks
14. 20 blue jays out of 35 birds

Write each ratio as a unit rate.

15. 14 hours in 2 weeks
16. 36 pieces of candy for 6 children
17. 8 teaspoons for 4 cups
18. 8 tomatoes for \$2
19. \$28 for 4 hours
20. 150 miles in 3 hours
21. \$18 for 3 CDs
22. 48 logs on 6 trucks
23. Write the ratio *21 wins to 9 losses* as a fraction in simplest form.
24. Write the ratio *\$12 dollars for 3 tickets* as a unit rate.

The ratios in Exercises 25-28 are equivalent. Find the missing number.

25. 8 juice boxes out of 12 drinks
_____ juice boxes out of 24 drinks
26. 6 ants out of 9 insects
_____ ants out of 45 insects
27. 4 red markers out of 5 markers
16 red markers out of _____
markers
28. 11 daisies to 12 sunflowers
33 daisies to _____ sunflowers

Lesson 5.2 Skills Practice

Proportions

The tables below represent a proportional relationship. Complete the table to find the missing value.

1.

Miles Driven	25	50	150	
Gallons of Gas	1	2	6	10

2.

Miles Driven	50	150	250	
Hours Driving	1	3	5	8

3.

Cost in dollars	12	36	60	
Time in hours	1	3	5	7

4.

Dollars	1	2	4	10
Yen	106	212	424	

5.

Ounces Red Paint	3	9	24	
Ounces Yellow Paint	1	3	8	12

6.

Students	17	34	68	
Teacher	1	2	4	9

Create a table using the given ratio to find the missing value.

7. 5 dinners cost \$35
What is the cost of 18 dinners?

8. 6 tickets cost \$1.50
What is the cost of 15 tickets?

9. 50 minutes for \$4.00
How many minutes with \$6.00?

10. 16 girls to 24 boys
How many girls if there are 30 boys?

Calculate the unit rate to solve the proportion.

11. \$1.75 per ceramic tile
How many tiles can be purchased for \$42?

12. 240 miles driven on 8 gallons of gas
How many gallons of gas are needed to drive 720 miles?

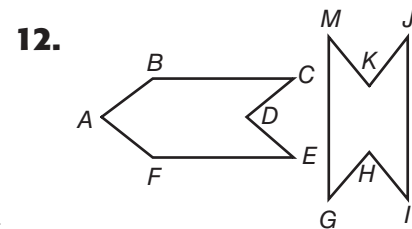
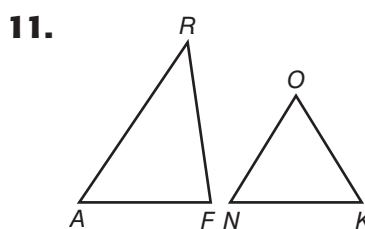
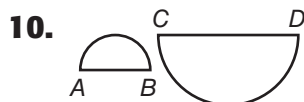
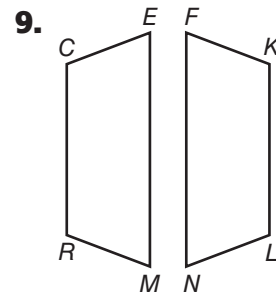
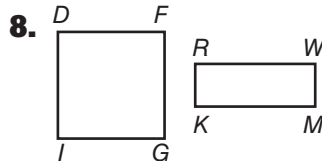
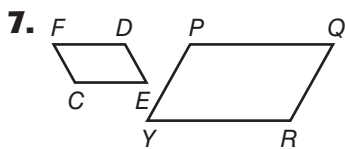
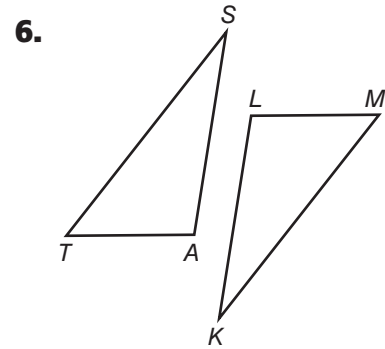
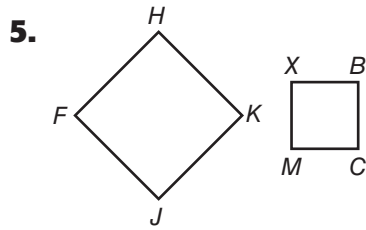
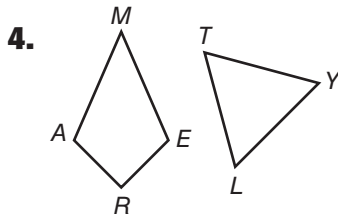
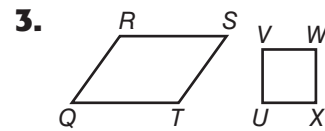
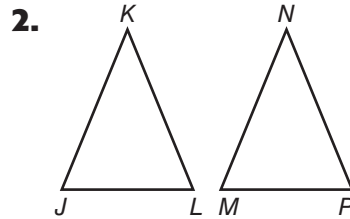
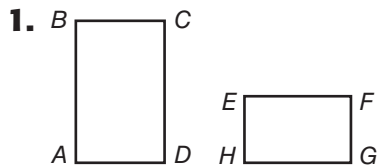
13. 20 ounces of drink for \$1.40
How much does 50 ounces of drink cost?

Lesson 5.3 Skills Practice

Similarity and Congruence

Similar and Congruent Figures

Tell whether each pair of figures is *similar*, *congruent*, or *neither*. Identify the corresponding sides and angles in the figures that are.



Lesson 6.1 Skills Practice**Use Percents**

Write each percent as a fraction in simplest form.

1. 40% 2. 30% 3. 55%

4. 75% 5. 140% 6. 175%

7. 24% 8. 68% 9. 44%

Write each fraction as a percent.

10. $\frac{4}{5}$ 11. $\frac{3}{20}$ 12. $\frac{7}{10}$

13. $\frac{3}{5}$ 14. $\frac{3}{2}$ 15. $\frac{5}{4}$

16. $\frac{6}{5}$ 17. $\frac{9}{20}$ 18. $\frac{13}{20}$

19. Which of these numbers are greater than one fourth? Which are less than one fourth?

0.249 25.2% $\frac{5}{24}$ 24.7% $\frac{11}{40}$

20. Suppose 8 out of 20 sixth graders and 9 out of 30 seventh graders like macaroni and cheese. Will comparing the numbers of students in each class who like macaroni and cheese tell you whether it is more popular in sixth or seventh grade? Explain.

Lesson 6.2 Skills Practice

A Percent of a Quantity

Find the percent of each number.

1. 25% of 16

2. 50% of 70

3. 10% of 30

4. 60% of 40

5. 75% of 20

6. 20% of 90

7. 30% of 110

8. 50% of 140

9. 25% of 80

10. 4% of 100

11. 75% of 36

12. 90% of 120

13. 125% of 40

14. 8% of 25

15. 150% of 22

16. 110% of 50

17. 125% of 60

18. 40% of 5

19. 15% of 40

20. 5% of 14

21. 20% of 29

22. 130% of 80

23. 4.5% of 60

24. 35% of 34

25. 14.5% of 60

26. 14% of 30

27. 24% of 15

28. 140% of 30

29. 6% of 55

30. 160% of 22

Lesson 6.3 Skills Practice**Percents and Wholes**

Find the percent. Fill in each blank. Show your work.

1. _____ % of 24 is 6

2. _____ % of 110 is 11

3. _____ % of 144 is 18

4. _____ % of 80 is 40

5. _____ % of 63 is 21

6. _____ % of 100 is 44

7. _____ % of 192 is 12

8. _____ % of 800 is 200

9. _____ % of 3.4 is 1.7

10. _____ % of 1 is 0.2

11. _____ % of 180 is 108

12. _____ % of 60 is 33

Find each number. Fill in each blank. Show your work.

13. 35% of _____ is 24.5

14. 18% of _____ is 7.2

15. 60% of _____ is 30

16. 22% of _____ is 19.8

17. 45% of _____ is 39.6

18. 15% of _____ is 9.3

19. 45% of _____ is 25.2

20. 30% of _____ is 16.2

21. 60% of _____ is 120

22. 150% of _____ is 45

23. 125% of _____ is 100

24. 100% of _____ is 63

Lesson 7.1 Skills Practice

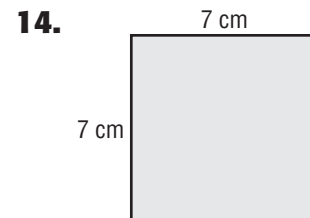
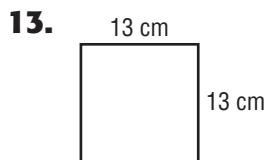
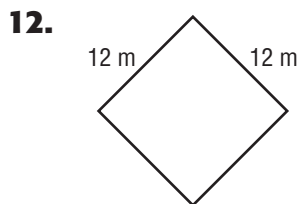
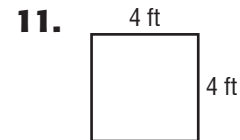
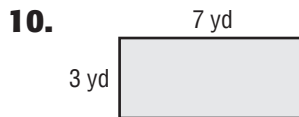
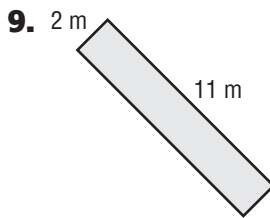
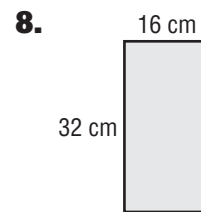
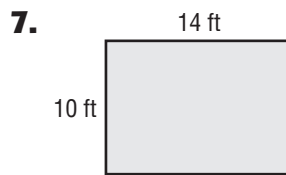
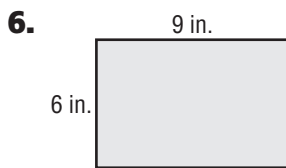
Squares

Area of Rectangles and Squares

Complete each problem.

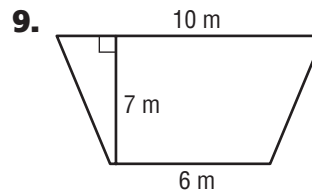
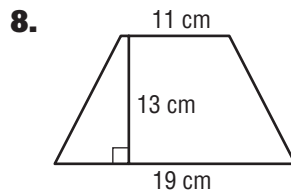
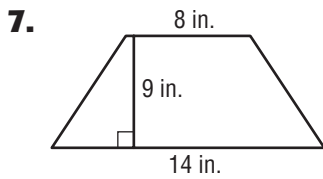
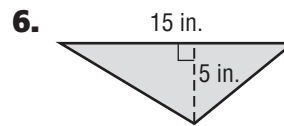
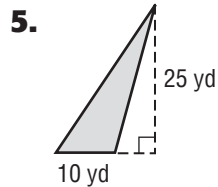
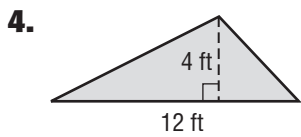
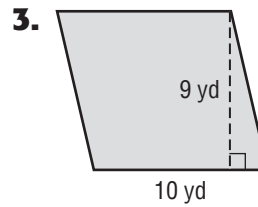
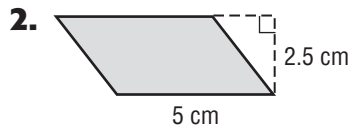
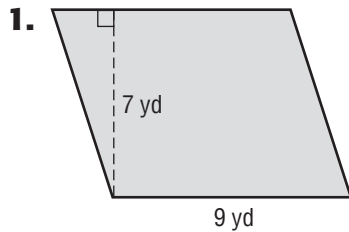
1. Give the formula for finding the area of a rectangle.
2. Draw and label a rectangle that has an area of 18 square units.
3. Give the dimensions of another rectangle that has the same area as the one in Exercise 2.
4. Find the area of a rectangle with a length of 3 miles and a width of 7 miles.
5. Find the area of a square with a side length of 15 centimeters.

Find the area of each rectangle.

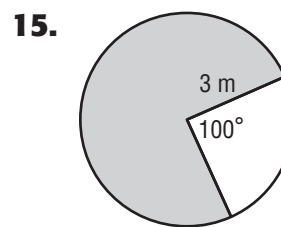
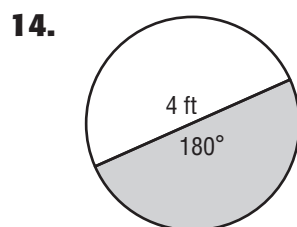
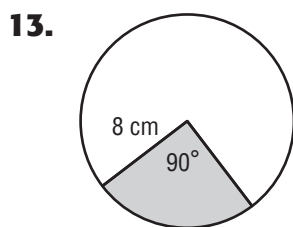
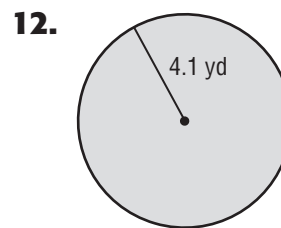
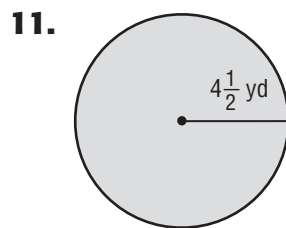
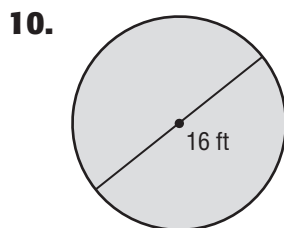


Lesson 7.2 Skills Practice**Calculate Areas**

Find the area of each shape. Round to the nearest tenth if necessary.



Find the exact and approximate area of each circle or sector. Use $\pi = 3.14$.



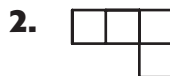
Lesson 7.3 Skills Practice

Surface Area and Volume

The view from the top of a prism is shown. Find the volume of the prism with the given height.

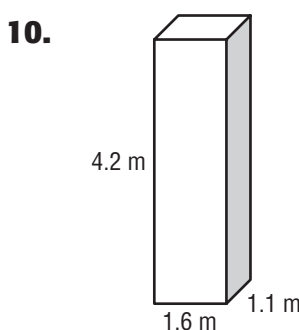
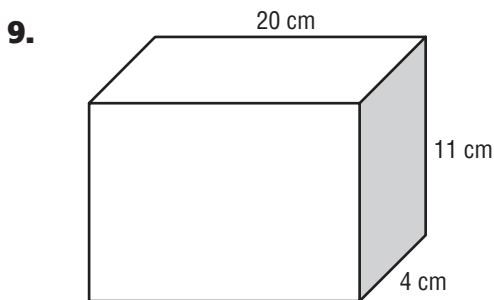
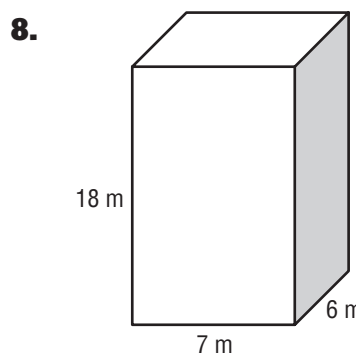
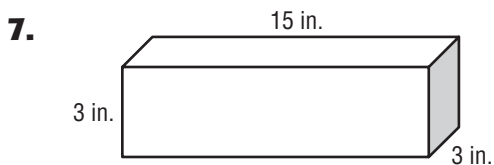
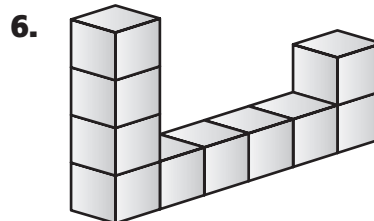
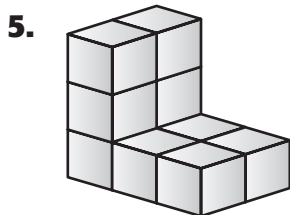
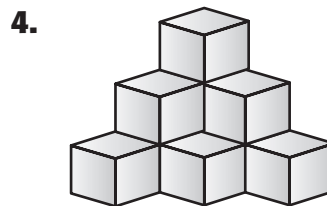
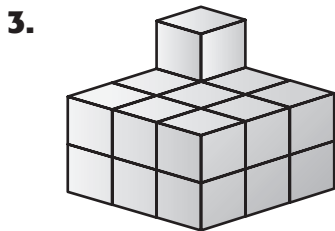


3 units high



5 units high

Find the surface area and volume of each figure. Each cube in a block structure measures one unit on a side.



Lesson 7.4 Skills Practice**Capacity**

Complete each ratio table.

1.

Milliliters	4,000			
Centiliters		199		
Liters			500	
Kiloliters				6.4

2.

Cups	24			
Pints		18		
Quarts			20	
Gallons				4

For Exercises 3–5, choose the metric unit and customary unit that is the most reasonable for measuring the capacity of the following containers.

3. A kitchen sink 4. School milk carton 5. Soda bottle

6. How many milliliters are in a 3 liter bottle of juice?

7. How many liters are in a juice bottle that holds 1,500 milliliters?

8. How many cups of juice are in 2 gallons of milk?

9. How many quarts of paint are in a 5 gallon container of paint?

Determine the capacity of the given cube.

10. Cube with 5 cm sides

11. Cube with 10 cm sides

12. Cube with 20 cm sides

13. A fish tank has a volume of $23,000 \text{ cm}^3$. What is the capacity of the tank in liters?

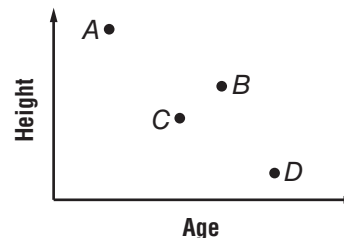
14. A punch bowl holds 3 gallons of punch. How many cups can be served?

Lesson 8.1 Skills Practice

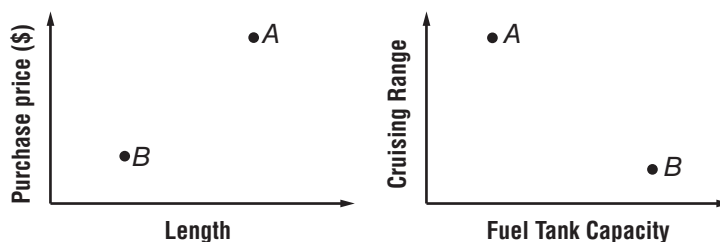
Interpret Graphs

Coordinate Plane

1. Each point on the graph below represents one of the following 6th grade students: Pasqual, Pierce, Mulan, and Sarina. Tell which point represents each student based on the following information. Mulan is the tallest. Pierce is the oldest. Pasqual is younger and shorter than Sarina.



2. The two graphs below compare speed boat A and speed boat B. The left graph shows the relationship between length and purchase price. The right graph shows the relationship between fuel tank capacity and cruising range. Use the graphs to determine whether each statement is true or false. Explain how you know.



- The purchase price of the longer speed boat is greater than the purchase price of the shorter speed boat.
 - The speed boat with greater fuel tank capacity has the greatest cruising range.
 - The speed boat with the smaller fuel tank capacity is the longer speed boat.
 - The speed boat with the largest purchase price has the greatest cruising range.
3. The table shows the number of seconds it took for Lamar to the run the 400 meter dash in four of his last six races.

400 meter Dash	1	2	4	6
Time (seconds)	64	62	58	54

- Make a graph of the data. Be sure to choose appropriate scales and to label the axes with the variable names.
- If Lamar continues to improve at a similar rate to his first six races, what would you expect his time to be in his eighth race?
- Based on your graph, what was Lamar's time in his fifth race?

Lesson 8.2 Skills Practice

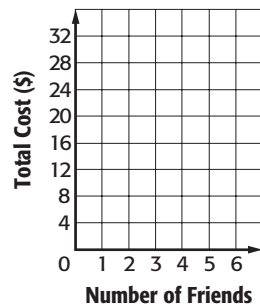
Draw and Label Graphs

Coordinate Plane

1. Manuel wants to go to the movies with some of his friends. He has \$30 to spend and is willing to pay the \$4 admission fee for each friend who goes with him.
 - a. Complete the table to show what the cost of admission is based on the number of friends who go to the movies with him.

Number of Friends	1	2	3	4	5	6
Total Cost (\$)	8			20		

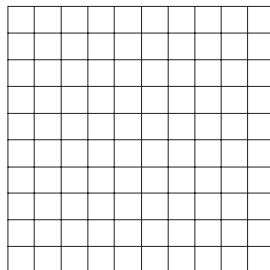
- b. Plot and label the points for the values from your table.



- c. Would it make sense to connect the points on this graph? Explain.
2. Home Cell Phone Company charges \$0.05 per minute for minutes used beyond an individual's basic cell phone plan.
 - a. Complete the table to show the cost of various amounts of minutes beyond the basic cell phone plan.

Time (hours)	1	2	3	4	5	6	7	8
Cost (\$)								

- b. Graph the data from the table on the 10-by-10 grid. Your horizontal axis should represent time. Label each axis and use appropriate scales.

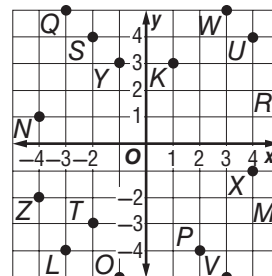


- c. Do the points on your graph make a pattern? If so, describe it.
 - d. Use your graph to predict the cost for 10 hours of cell phone minutes beyond the basic plan.

Lesson 8.3 Skills Practice

Graph in Four Quadrants

For Exercises 1–8, use the coordinate plane at the right. Identify the point for each ordered pair.



- | | |
|--------------|---------------|
| 1. $(-2, 4)$ | 2. $(-2, -3)$ |
| 3. $(4, 4)$ | 4. $(3, -5)$ |
| 5. $(3, 5)$ | 6. $(4, -1)$ |
| 7. $(-1, 3)$ | 8. $(-4, -2)$ |

For Exercises 9–16, use the coordinate plane above. Write the ordered pair that names each point. Then identify the quadrant where each point is located.

- | | |
|---------|---------|
| 9. K | 10. L |
| 11. M | 12. N |
| 13. O | 14. P |
| 15. Q | 16. R |

Tell which number is greater.

- | | |
|----------------------|--|
| 17. -8 or -9 | 18. $-4\frac{1}{2}$ or $-5\frac{3}{4}$ |
| 19. 10 or -12 | 20. $ -5 $ or 4 |
| 21. $ -6 $ or $ -2 $ | 22. -10 or $ -1 $ |

Evaluate each expression.

- | | |
|------------------------------|-----------------------|
| 23. $ 8 + 3$ | 24. $ -8 \div -2$ |
| 25. $\frac{1}{2} \cdot -6 $ | 26. $ -2 \cdot 10 $ |
| 27. $ -9 - 2$ | 28. $ -5 + 5 $ |

Lesson 9.1 Skills Practice**Understand Equations****Solving Two-Step Equations**

Solve each equation. Use tables if necessary.

1. $2a + 4 = 6$

2. $3b + 4 = 10$

3. $7 = 4c - 5$

4. $4x + 6 = 14$

5. $8 = 2g + 3$

6. $x + 4 = 5x$

7. $1 = 2f - 7$

8. $6 + m = 2m$

9. $5z + 1 = 16$

10. $7m - 5 = 9$

11. $1 = 8n - 7$

12. $16 = 4s + 14$

13. $12 = k + 5$

14. $4r = 3r + 2$

15. $6 = 2x - 10$

16. $5x = 3x + 10$

17. $2r - 5 = 3$

18. $5 = 2z - 9$

Tell whether each equation below is always true, sometimes true or never true. Explain how you know.

19. $\frac{f}{2} = f$

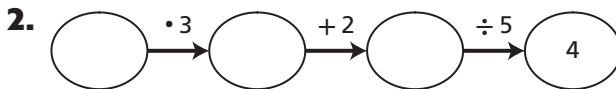
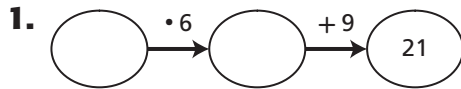
20. $g + 4 = g + 6$

21. $2 \cdot v = v + 6$

Lesson 9.2 Skills Practice

Backtracking

For each flowchart, write the equation that is being solved. Backtrack to find the solution. Be sure to check your solution.



Use a flowchart and backtracking to find the solution to each equation. Be sure to check your solution.

3. $13 = 3 + 2d$

4. $4m - 6 = 34$

5. $\frac{n + 1}{7} = 3$

6. $\frac{5c + 10}{20} = 2$

7. $6 \cdot (m + 2) = 54$

8. $\frac{3h + 10}{2} + 9 = 20$

Lesson 9.3 Skills Practice**Guess-Check-and-Improve**

Use guess-check-and-improve to solve the equations.

1. $m + 2 = 3m$

2. $n + 10 = 2n + 7$

3. $7 + 3b = 1 + 5b$

4. $4 \cdot (n + 1) = 32$

5. $w \cdot (w + 4) = 60$

6. $9x - 7 = 3x + 35$

7. $x^2 + 3x = 40$

8. $k \cdot (k + 2) = 5k$

9. $8n = 3n + 45$

10. $\frac{n + 56}{2} = 4n$

Lesson 10.1 Skills Practice

Data Displays

Make a histogram for each set of data and then use it for the exercises below.

1. The table below shows the distribution of math test scores in Mr. Alvarez's sixth grade class.

Student Test Scores in Mr. Alvarez's Sixth Grade Math Class	
Test Score Interval	Number of Students
91 – 100	5
81 – 90	8
71 – 80	10
61 – 70	6
51 – 60	1

- a. Compare the number of students whose math scores is in the range from 91 – 100 to the number of students whose math score is in the range from 71 – 80.
- b. If your histogram contains each of the test scores for Mr. Alvarez's students, how many students does he have in his class?

2. The table below shows the distribution of heights of the students in Mr. Alvarez's sixth grade class.

Student Heights (inches) in Mr. Alvarez's Sixth Grade Math Class	
Height Intervals	Number of Students
68 – 71	1
64 – 67	6
60 – 63	12
56 – 59	7
52 – 55	3
48 – 51	1

- a. How many students have a height between 56 inches and 67 inches, inclusive?
- b. What is greatest possible height of the tallest student in Mr. Alvarez's class?
- c. Can you tell the exact height of the smallest student in class?

Lesson 10.2 Skills Practice

Collect and Analyze Data

Just as important as knowing how to make a bar graph or a line graph or a histogram is deciding what type of graph to use. Here are some guidelines to help you make that decision.

- A bar graph compares data that fall into distinct categories.

Example Use a bar graph to show how the populations of several cities compare in one year.

- A line graph shows changes in data over time.

Example Use a line graph to show how a population of one city changed over several years.

- A histogram displays data from a frequency table.

Example Use a histogram to show how many cities fall within a set of population ranges.

Exercises

Choose and then make an appropriate graph for each data set.

Explain your choice.

1.

Cars in Use	
Year	Number (millions)
1970	80
1980	105
1990	126
2000	136

2.

Seating Capacity of Aircraft	
Model	Number of Seats
B747	405
DC-10	288
L-1011	296
MD-80	147

3.

Student Internet Use (minutes per day)	
Minutes	Number of Students
0 – 10	5
11 – 20	9
21 – 30	7
31 – 40	3

Lesson 10.3 Skills Practice***The Language of Chance***

Find the probability for each. Write each answer as a fraction and as a percent.

1. A whole number is chosen at random from the numbers 1–10.
 - a. What is the probability that the number is odd?
 - b. What is the probability that the number is less than 8?
 - c. What is the probability that the number is 1, 4, or 9?
 - d. What is the probability that the number is greater than 10?

2. Maggie is going shopping with her mother. Mom tells Maggie she can bring only one of the following friends: Tekeysia, Chica, Memdi, or Eliza. Suppose she chooses one friend at random.
 - a. What is the probability that she chooses Chica?
 - b. What is the probability that she doesn't choose Chica?
 - c. What is the probability that she chooses Tekeysia or Eliza.

3. Jordon is playing Rice Drop using the game board shown below. He earns one point if he lands on square labeled with an even number and two points if he lands on a square with an odd number. Note: All squares are of equal size.

2	4	6	8
10	1	12	3
5	14	7	16
18	20	22	24

- a. Assuming the piece of rice lands in a random place on the board, what is the probability that he earns only one point?
 - b. Assuming the piece of rice lands in a random place on the board, what is the probability that he earns two points?

4. Suppose Silvia tossed a penny ten times and got 4 heads and 6 tails. What is the experimental probability of getting a head? What is the theoretical probability of getting a head? If they are different, explain why.

Lesson 10.4 Skills Practice

Make Matches

For Exercises 1 and 2, draw a tree diagram to help find the probability.

- Suppose you have two sets of five cards. The cards in each set are numbered 1 to 5. You pick a card at random from each set and find the sum of the numbers.
 - How many possible outcomes are there?
 - What is the probability that the sum of the two numbers is 2?
 - What is the probability that the sum of the two numbers is 5?
 - What is the probability that the sum of the two numbers is 11?
- Ricardo has a number cube numbered from 1 to 6 and a spinner divided into eight identical sections numbered from 1 to 8. Suppose he rolls the number cube and then spins the spinner.
 - How many possible outcomes are there?
 - What is the probability that he rolls the number 4 and spinner stops on a number greater than 6?
 - What is the probability that he rolls a number less than or equal to 2 and the spinner stops on the number 2 or 5?
- Imeda and Renee are playing a version of the Rice Drop game using the game board shown.
 - If Renee drops a piece of rice and it lands randomly on the board, what is the probability that it lands in one of the smaller squares? Express your answer as a percent.
 - If Imelda drops a piece of rice and it lands randomly on the board, what is the probability that it does not land in one of the smaller squares? Express your answer as a percent.

