Seventh Grade Math Overview

	First Semester	Second Semester
Math	Order of operations Factors and prime numbers Simple and compound interest Equations with missing numbers Metric units of measure Signed numbers Rules of equations Probability and probability in a series Using a calculator	Circumference and area of a circle Constructing triangles and calculating area Applying and transforming formulas Applying functions to find unknown values Ratios and proportions Bisecting lines and angles Volume of geometric solids Roots and exponents of fractions and negative numbers Scientific notation Graphing a line for an equation

Grade 7

Math Workbook

Oak Meadow

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Lesson 1

Skills Check

Solve the following problems to refresh the skills you've learned in previous years. Show your work, and reduce all fractions to lowest terms. Express division remainders as decimals. Answer all word problems in complete sentences and use unit labels (inches, tons, apples, etc.).

1.
$$\begin{array}{r} \$12.95 \\ -\ \$11.08 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 23{,}125 \\ 8{,}909 \\ 11{,}578 \\ +\ \ 4{,}232 \\ \hline \end{array}$$

3. $469.743 - 32.254$

4. $2{,}859 \div 12$

5. 386×34

6. $\frac{2}{3} + \frac{2}{3}$

7. $\frac{10}{12} - \frac{8}{12}$

8. Tyler spends $35.72 per month on his phone bill. How much did he spend in the past two years?

Lesson 1

New Skills Practice

Mean, Median, Mode, and Range; Exponents; and Order of Operations

1. 16, 24, 18, 23, 19, 18, 22, 18, 20, 21

Mean:

Median:

Mode:

Range:

2. 1,162 — 1,160 — 1,166 — 1,165 — 1,166 — 1,167 — 1,169

Mean:

Median:

Mode:

Range:

3. What is the value of 6^4?

4. What is the value of 2^2?

5. What is the value of 5^4?

Lesson 1 New Skills Practice *(continued)*

6. What is the value of 9^3?

7. What is the value of 7^4?

8. What is the value of 6^2?

9. $24 + 32 - 6(4 \cdot 2)$

10. $3(8 - 3) + 4(17 + 8)$

11. $16 - (10 - 4) + 2 \cdot 8 \cdot 5$

12. $2.7(8.6 - 3) + 5.4(3) - 7.6$

Lesson 1 New Skills Practice *(continued)*

13. $52.6 - 10 \div 2 - 6^2$

14. $5 \cdot 3 + 16.9 - 2^3$

15. $8(7.2) + 5^3 - 4.4(12)$

16. $4(3 + 2) - 3^2 - 7.8$

17. $(48 \div 2) - 4^2 + 2.2$

18. $13.7 + 5(2.3) - 15 \div 3 + 2^4$

Lesson 1

Test

Calculate the value of the following exponents.

1. 5^4

2. 3^6

3. 10^3

Find a common denominator and then solve the following problems, reducing your answers to lowest terms.

4. $\frac{32}{12} + \frac{2}{6}$

5. $\frac{3}{8} - \frac{1}{6}$

6. $\frac{16}{20} + \frac{1}{5}$

Lesson 1 Test *(continued)*

Solve the following problems, using the order of operations.

7. $24 \div 4 + (7 - 3) - 2 \cdot 4 + 6^3$

8. $20 \div 2 - 3^2 + 7(5.4)$

9. $2(4) + 6 \cdot 2 - 16 \div 4 + 5^2$

10. $(17.9 - 6) - 2^2 + 4.2(3)$

11. $3 \cdot 8 - 12 \div 3 + 4^3$

12. $48.2 - 6^2 + 2(3.1 + 4.7)$

Lesson 1 Test *(continued)*

13. The Greenfield Playhouse's annual play included children of the following ages: 7, 9, 11, 8, 10, and 9. Calculate the mean age of the child actors.

14. At a used car lot, four cars were for sale at the following prices: $8,499, $7,999, $6,550, $7,275. What was the median sale price of the four used cars?

15. There were riders in a dirt bike competition with the following birth years: 2008, 2000, 1999, 2001, 2005, 2001, 2000, 2006, 2007. Calculate the mean, median, mode, and range for the birth years of the riders. (You don't have to use a complete sentence in your answer.)

Mean:

Median:

Mode:

Range:

16. Calculate the mean, median, mode, and range for the following set of numbers.

43, 23, 33, 34, 31, 44, 23

Mean:

Median:

Mode:

Range:

Lesson 1 Learning Checklist

Please fill out the learning checklist found at the end of each lesson test. This checklist will help you keep track of how your skills are progressing and what you need to work on. You can also add notes to help your parent or teacher understand how to help you (or your parent might want to add notes in this space).

Here is what the different headings mean:

Developing: You still need to work on this skill.

Consistent: You use this skill correctly most of the time.

Competent: You show mastery of this skill.

Please remember that these skills continue to develop over time so don't worry if you can't do all of them yet. The main goal is to be aware of which skills you need to focus on.

LESSON 1 SKILLS	Developing	Consistent	Competent	Notes
Calculate mean, median, mode, and range				
Calculate value of exponents				
Use order of operations to solve equations involving multiple processes				

Lesson 2

Skills Check

Use a calculator to solve decimal problems, and solve common fraction problems by hand. Round off longer answers to two decimal places.

1. $62.4 - 18.29$

2. $\begin{array}{r} 12.45 \\ \times \quad 9.2 \\ \hline \end{array}$

3. $0.63 + 3.49$

4. $2\frac{1}{3} + 5\frac{3}{4}$

5. $7.9 - 0.65$

6. 9.76×14

Lesson 2 Skills Check *(continued)*

7. $.7\overline{)32.1}$

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

9. $12.4 + 7.7$

Lesson 2

New Skills Practice

Lowest Common Denominator in Fractions and Mixed Numbers

Reduce answers to the lowest terms.

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

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

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

Find the lowest common denominator and solve.

4. $\frac{3}{8} - \frac{1}{6}$

5. $\begin{array}{r} \frac{1}{6} \\ +\frac{1}{9} \\ \hline \end{array}$

6. $\frac{3}{4} + \frac{3}{10}$

Lesson 2 New Skills Practice *(continued)*

Find the lowest common denominator and solve.

7. $14\frac{3}{5} + 16\frac{7}{10}$

8. $$\begin{array}{r} 19\frac{1}{2} \\ -\ 13\frac{1}{4} \\ \hline \end{array}$$

9. $37\frac{7}{10} - 19\frac{1}{5}$

10. $$\begin{array}{r} 21\frac{1}{3} \\ -\ 14\frac{1}{5} \\ \hline \end{array}$$

11. $47\frac{1}{6} - 18\frac{1}{2}$

12. $52\frac{1}{8} - 29\frac{1}{12}$

13. $$\begin{array}{r} 13\frac{1}{4} \\ -\ \ 7\frac{2}{8} \\ \hline \end{array}$$

14. $$\begin{array}{r} 28\frac{2}{4} \\ -\ 14\frac{1}{2} \\ \hline \end{array}$$

15. $41\frac{1}{6} - 17\frac{1}{8}$

Lesson

2

Test

Reduce answers to the lowest terms.

1. $\begin{array}{r} \frac{3}{4} \\ -\frac{2}{3} \\ \hline \end{array}$

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

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

Find the lowest common denominator and solve.

4. $\begin{array}{r} \frac{5}{6} \\ -\frac{1}{8} \\ \hline \end{array}$

5. $\frac{3}{8} + \frac{5}{12}$

6. $\frac{5}{6} - \frac{3}{4}$

Lesson 2 Test *(continued)*

Find the lowest common denominator and solve.

7. $29\frac{3}{6} + 12\frac{2}{4}$

8. $$\begin{array}{r} 23\frac{4}{5} \\ -\ 6\frac{2}{3} \\ \hline \end{array}$$

9. $$\begin{array}{r} 24\frac{2}{3} \\ +\ 17\frac{3}{5} \\ \hline \end{array}$$

Solve the following problems. Reduce answers to lowest terms.

10. $$\begin{array}{r} 14.60 \\ -\ \ 5.71 \\ \hline \end{array}$$

11. $$\begin{array}{r} 8{,}274 \\ \times\ \ \ \ 59 \\ \hline \end{array}$$

12. $1\frac{1}{2} + 9\frac{3}{4}$

13. $$\begin{array}{r} 23.92 \\ +\ 14.76 \\ \hline \end{array}$$

14. $7\overline{)3{,}626}$

Lesson 2 Test *(continued)*

Solve the following problems. Reduce answers to lowest terms.

15. Mark goes jogging on a course that is 3.75 kilometers long. If he completes the full course every morning, how many kilometers does he jog in one week?

16. Lucy bought an axe at the hardware store. The axe cost $21.45 and the tax was $1.07. If she gave the clerk $30.00, how much change should she receive?

17. Leslie is buying a car, and she wants to pay for it in 36 monthly installments. If the total cost of the car is $10,400, how much would Leslie have to pay each month? Round off your answer to two decimal places.

18. When Frank left for work one day, the odometer (mileage gauge) on his car read 42,549.7. He drove straight to his office, and when he got there the odometer read 42,565.1. How many miles is it from Frank's house to his office?

Lesson 2 Learning Checklist

LESSON 2 SKILLS	Developing	Consistent	Competent	Notes
Identify common denominators when adding and subtracting fractions				
Identify the lowest common denominator (LCD) with fractions				
Find the lowest common denominator when adding and subtracting mixed numbers				
Use regrouping (borrowing) when subtracting mixed numbers				

Lesson 6

Skills Check

Use a calculator to solve decimal problems, and solve common fraction problems by hand. Round off longer answers to two decimal places.

1. $\begin{array}{r} 16.75 \\ +\ 18.63 \\ \hline \end{array}$

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

3. $\begin{array}{r} 71.56 \\ \times\ \ 0.68 \\ \hline \end{array}$

4. $\begin{array}{r} 18.43 \\ -\ \ 7.09 \\ \hline \end{array}$

5. $3\frac{1}{3} \div 2\frac{2}{9}$

6. 9.2×3.5

7. $12.6 - 9.04$

8. $1\frac{1}{4} \times 2\frac{3}{5}$

9. $1.287 + 0.94$

Lesson 6

New Skills Practice

Dividing Decimals; Factors and Prime Numbers

1. $4.2 \div 3$

2. $7\overline{)22.47}$

3. $9\overline{)13.536}$

4. $0.795 \div 5$

5. $6\overline{)0.528}$

6. $0.204 \div 3$

7. $34.7 \div 4$

8. $11.53 \div 5$

9. $8\overline{)42.6}$

Lesson 6 New Skills Practice *(continued)*

10. $9.240 \div .3$

11. $.14\overline{).7686}$

12. $1.922 \div .2$

13. $9 \div .5$

14. $145 \div .4$

15. $1.6\overline{)15}$

Write the factors of the following numbers.

16. 8

17. 14

18. 1

19. 24

20. 10

21. 7

Lesson 6

Test

Reduce all common fractions to lowest terms.

1. $0.7 + 0.538$

2. $6\overline{)14.976}$

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

4. $8\overline{).032}$

5. $48 \div 2.4$

6. $4\overline{)15.8}$

7. $1\frac{7}{8} \times 1\frac{1}{3}$

8. $5\overline{)19.46}$

9.
$$\begin{array}{r} 74.65 \\ \times \quad 8.3 \\ \hline \end{array}$$

Lesson 6 Test *(continued)*

10. $14.32 - 0.587$

11. $\begin{array}{r} 15.68 \\ \times \quad 23 \\ \hline \end{array}$

12. $.3\overline{)45}$

13. Mrs. Johnson drives to work every day. When she left for work one day, the odometer (mileage gauge) on her car read 38,643.8. When she returned to her house at the end of the day, the odometer read 38,668.6. If she didn't drive anywhere else during the day but to work and back, how many miles is it from her house to her work?

14. Jason is buying a car, and he wants to pay for it in 48 monthly installments. If the total cost of the car is $9,300, how much would Jason have to pay each month?

Lesson 6 Test *(continued)*

15. Jennifer bought an axe at the hardware store. The axe cost $19.95 and the tax was $1.20. If she gave the clerk $25.00, how much change should she receive?

16. Rahima goes jogging on a course that is 2.75 kilometers long. If she completes the full course every morning, how many kilometers does she jog in one week?

Lesson 6 Learning Checklist

LESSON 6 SKILLS	Developing	Consistent	Competent	Notes
Divide using decimals and whole numbers				
Divide decimals by decimals				
Solve division problems involving rounding remainders in decimals				
Solve division problems involving repeating decimals				
Determine factors of a whole number				
Identify prime numbers				

Lesson

17 Skills Check

Use a calculator to solve decimal problems, and solve common fraction problems by hand. Round off longer answers to two decimal places.

1. $14 \div 2.3$

2. $8.1 - 0.42$

3. $14 - (+9)$

4. Write $2\frac{3}{5}$ as a decimal.

5. Write $\frac{2}{3}$ as a decimal rounded off to hundredths.

Lesson 17 Skills Check *(continued)*

6. What is 38% of 1,200?

7. What percent is 47 out of 50?

Lesson 17

New Skills Practice

Using a Calculator; Third and Fourth Roots

Use your calculator to solve the following problems, and write the answer below the problem. Round off longer answers to two decimal places.

1. $132 + 95.82$

2. 5.62×8.41

3. $24.36 \div 3.9$

4. $47.405 - 39.03$

Use your calculator to change the following common fractions to decimals, and write the answer below the problem. Round off longer answers to two decimal places.

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

6. $\frac{2}{9}$

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

8. $4\frac{9}{11}$

Lesson 17 New Skills Practice *(continued)*

Use a calculator to determine percentages in the following problems.

9. Jennifer went to the mall with $50. She spent $35 at the mall. What percent of her $50 did she spend at the mall?

10. Louis has been traveling a lot lately as part of his job. During the past 60 days, he's been out of town 43 days. What percent of the past 60 days has Louis been out of town? Round off the percent to whole numbers only.

11. There are 7 trees in Miranda's front yard. 3 of them are maples and 4 are oaks. What percent of the trees in Miranda's front yard are oaks? Round off the percent to whole numbers only.

12. Feliciano has 5 dogs. 3 of the dogs are male and 2 are female. What percent of Feliciano's dogs are male?

13. There were 15 girls on the basketball team. 4 of them scored over 10 points in the game. What percent of the girls on the team scored over 10 points in the game? Round off the percent to whole numbers only.

Lesson 17 New Skills Practice *(continued)*

Use your calculator to determine the value of the following terms. Do **not** round off decimal answers.

14. What is the value of 15^2?

15. What is the value of 48^3?

16. What is the value of 6.3^4?

17. What is the value of 10^5?

18. What is the value of 84^4?

19. What is the value of 2.7^3?

Lesson 17 New Skills Practice *(continued)*

20. What is the square root of 169?

21. What is the value of $\sqrt{640}$? (Round your answer to two decimal places.)

22. What is the the value of $\sqrt{1{,}024}$?

23. What is the square root of 14.44?

Lesson

17 Test

Use a calculator to solve decimal problems, and solve common fraction problems by hand. Round off longer answers to two decimal places.

1. $\begin{array}{r} 32.04 \\ \times\ \ 0.59 \\ \hline \end{array}$

2. $0.34 - 0.06$

3. $15 \div 0.94$

4. $6 + (-10)$

5. $2.6\overline{)15.04}$

6. $3\frac{3}{4} \times \frac{2}{5}$

7. 0.68×1.2

8. $6 \div 1\frac{1}{4}$

9. $-6 - (-8)$

Lesson 17 Test *(continued)*

10. $12 - (+4)$

11. $18.2 + 3.4$

12. $-6 + (-7)$

13. $(2.1)(-3.2) =$

14. $6.4 \div (-2) =$

15. $(-9.1)(3.3) =$

16. $-5\overline{)-32.6} =$

Lesson 17 Test *(continued)*

17. Jean bought a skirt for $30. If the sales tax was 5% and she gave the clerk $50, how much change should she receive?

18. John Jacobs received 1,247 votes out of 3,416 votes cast in the election. What percent of the votes did John receive? Round off the answer to the nearest one percent.

19. Pierre wants to buy a car that costs $15,847. The salesman says Pierre must make a down payment of 15% if he wants to buy the car and pay for it in monthly installments. What is the dollar amount of the down payment that Pierre must make?

20. Eli had dinner at a restaurant. The meal came to $14.63 and the tax was $1.17. If he left a $3.00 tip, what was the total cost of his meal?

Lesson 17 Learning Checklist

LESSON 17 SKILLS	Developing	Consistent	Competent	Notes
Use a calculator to solve problems with the four processes				
Use a calculator to convert fractions to decimals				
Use a calculator to solve problems involving percentages				
Use a calculator to solve problems involving signed numbers				
Use a calculator to determine square roots				
Determine third and fourth roots of numbers				

Lesson

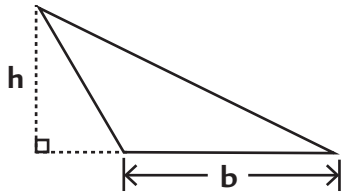
23 Skills Review: Test

1. If the radius of a circle is $3\frac{1}{2}$ inches, what is the circumference?

2. What is the area of a circle that has a radius of 3 miles?

Find the area of triangles with the following measurements:

3.

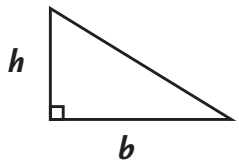


b = 32 inches

h = 22 inches

Lesson 23 Skills Review: Test *(continued)*

4.



b = 13 cm
h = 9 cm

5. Alyssa is driving to Chicago, and she is traveling at 60 miles per hour. If Chicago is 96 miles away, how long will it take her (in hours and minutes) to get there if she maintains her present rate of speed?

6. What is the width of a rectangle that has an area of 112 square inches and a length of 14 inches?

Find the next three numbers in the following sequence.

7. $1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \ldots$ _____

Lesson 23 Skills Review: Test *(continued)*

Use the following functions to find the missing numbers in the tables.

8. $y = 5x - 4$

	x	y
a.	10	
b.	15	
c.	20	

9. $y = \frac{3}{4}x + 12$

	x	y
a.	20	
b.	40	
c.	60	

Find the function for the relationship between the following sets of numbers.

10.

x	y
1	1
2	4
3	9

11.

x	y
1	3
2	6
3	11

Lesson 23 Skills Review: Test *(continued)*

12. George is making a loaf of whole wheat bread and a loaf of banana bread. He needs $4\frac{1}{2}$ cups of flour for one recipe and $3\frac{3}{4}$ cups for the other. How many cups of flour does he need altogether?

13. What is the square of 16?

14. In a track and field meet, Jan ran the 100-meter dash in 11.78 seconds. Michele's time was 12.01 seconds. How much faster was Jan than Michele?

15. Kris bought a pair of shoes for $49.95. If the sales tax was 6.5%, how much did she pay in sales tax? *(Round off to the nearest cent.)*

Lesson 23 Skills Review: Test *(continued)*

16. Lila's dog Mollie had 8 puppies. 6 of them were male and 2 were female. What percent of Mollie's puppies were female?

Simplify the following expressions.

17. $48 - 6^2 + 2(3 + 4)$

18. $3 \cdot 8 - 12 \div 3 + 4^3$

19. $(17 - 6) - 2^2 + 4(3)$

20. $2(4) + 6 \cdot 2 - 16 \div 4 + 5^2$

Lesson 23 Learning Checklist

CUMULATIVE SKILLS LESSONS 19–22	Developing	Consistent	Competent	Notes
Determine area of a circle using pi				
Determine circumference of a circle using pi				
Identify different types of angles				
Use a protractor to measure angles				
Classify triangles based on angles				
Classify triangles based on length of sides				
Calculate the sum of angles in a triangle				
Use a drawing compass with accuracy				
Use a compass to construct triangles				
Apply formula to determine the area of a triangle				
Apply formula to determine the area of a rectangle				
Solve problems involving rate, distance, and time				
Transform formulas using rules for equations				
Determine the pattern of numbers in a sequence				
Use functions to determine unknown values in a set of numbers				
Determine the function that describes a related set of numbers				

Appendix

Extra Practice Worksheets 351

Answer Key 533

Extra Practice Worksheets

Lesson 1

Addition and Subtraction in Order of Operations

1. $59 - 23 - 14 + 2$

2. $31.6 + 2.3 - 6 - 9$

3. $15.5 + 9.2 + 6.04 - 3$

4. $24.7 - 3.2 - 8 - 9.1$

5. $23.6 + 16.8 - 19 - 12$

6. $74.2 - 36.4 - 5.06 + 6.02$

Lesson 1

Parentheses in Order of Operations

1. $18.6 - (4.2 + 8.9)$

2. $(23.5 - 16.03) + 4.61$

3. $(4.8 - 2) + 12.9 - (6.05 + 3.14)$

4. $7.8 + (12.2 - 4.3)$

5. $42.7 - (6.1 - 3.9)$

6. $32.7 + (6.09 - 4.03) - (9.2 - 2.4)$

7. $(16.6 - 11.2) + 2.7$

8. $21 - (8.6 - 5.04) + 6.1 - (10.2 - 3)$

9. $16.8 - 4 + (10 - 5.2)$

10. $16.75 - (3.1 - 2.05)$

11. $(5.4 + 2.6) - 4 + (6.08 - 3.17)$

12. $(16.4 - 7.2) - 3$

Lesson 1

Multiplication in Order of Operations

Simplify the following expressions.

1. $5(5.4) + 6.2$

2. $18.9 - 3(4.6 - 2)$

3. $3 \cdot 6 + 9 - (3)2$

4. $(7 + 2)(5 - 3.06)$

5. $2 \cdot 7 + 4(8) - 16$

6. $4(6.1 + 5.02) - 17.3$

7. $3(6 \cdot 4) - 5(6)$

8. $7(2.9) + (9.4 - 6.8)$

Lesson 1

Division in Order of Operations

Write the value of the following expressions.

1. $3 \cdot 8 - 12 \div 3$

2. $(17.4 - 6) + 4(3.2)$

3. $28 - 6(2) + 2(3 + 4)$

4. $20 \div 2 + 7(5)$

5. $(18 \div 3) + 2 \cdot 2$

6. $2(4) + 6 \cdot 2 - 16 \div 4$

7. $24 \div 4 + (7 - 3) - 2 \cdot 4$

8. $4(3.2 + 2.6) - 7.9$

9. $13.6 + 5(2.1) - 15 \div 3$

10. $5 \cdot 3 + 16$

11. $12.4 - 10 \div 2$

12. $8(7.9) - 4(12.2)$

Lesson 2

Common Denominators in Addition and Subtraction Involving Fractions

Reduce answers to the lowest terms.

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

2. $\frac{2}{5} + \frac{3}{10}$

3. $\begin{array}{r} \frac{3}{8} \\ +\frac{4}{16} \\ \hline \end{array}$

4. $\begin{array}{r} \frac{3}{4} \\ -\frac{1}{3} \\ \hline \end{array}$

5. $$\begin{array}{r} \frac{3}{4} \\ +\frac{5}{8} \\ \hline \end{array}$$

6. $\frac{1}{2} + \frac{1}{4}$

Lesson 2

Finding the Lowest Common Denominator (LCD)

Find the lowest common denominator and solve.

1. $\begin{array}{r} \frac{1}{6} \\ +\frac{1}{8} \\ \hline \end{array}$

2. $\frac{5}{8} + \frac{7}{12}$

3. $\begin{array}{r} \frac{5}{6} \\ -\frac{2}{9} \\ \hline \end{array}$

4. $\begin{array}{r} \frac{3}{8} \\ -\frac{1}{12} \\ \hline \end{array}$

5. $$\begin{array}{r} \frac{1}{4} \\ -\frac{1}{10} \\ \hline \end{array}$$

6. $\frac{3}{4} + \frac{5}{6}$

Lesson

2 LCDs in Mixed Numbers

Find the lowest common denominator and solve.

1. $$\begin{array}{r} 17\frac{1}{2} \\ -\ \ 8\frac{3}{8} \\ \hline \end{array}$$

2. $$\begin{array}{r} 7\frac{3}{4} \\ +\ 23\frac{1}{2} \\ \hline \end{array}$$

3. $13\frac{5}{6} - 9\frac{1}{4}$

4. $6\frac{5}{12} + 5\frac{7}{8}$

5. $16\frac{8}{12} - 5\frac{2}{8}$

6.
$$\begin{array}{r} 13\frac{1}{2} \\ +\ \ 7\frac{3}{6} \\ \hline \end{array}$$

Lesson

2

Regrouping in Mixed Number Subtraction

Find the lowest common denominator and solve.

1. $$\begin{array}{r} 31\frac{3}{8} \\ -\ 19\frac{3}{4} \\ \hline \end{array}$$

2. $29\frac{1}{10} - 6\frac{3}{4}$

3. $$\begin{array}{r} 13\frac{4}{8} \\ -\ \ 8\frac{1}{2} \\ \hline \end{array}$$

4. $25\frac{1}{6} - 16\frac{3}{4}$

5. $$\begin{array}{r} 8\frac{1}{9} \\ -\ 3\frac{2}{3} \\ \hline \end{array}$$

6. $17\frac{1}{2} - 9\frac{4}{5}$

Lesson

6 Dividing Decimals by Whole Numbers

1. $9.582 \div 2$

2. $7\overline{)18.767}$

3. $31.190 \div 5$

4. $6.25 \div 5$

5. $6\overline{)14.430}$

6. $22.8 \div 6$

Lesson

6 Dividends of Less Than 1

1. $8\overline{)0.200}$

2. $0.038 \div 2$

3. $9\overline{)0.027}$

4. $0.48 \div 4$

5. $7\overline{)0.049}$

6. $0.18 \div 6$

7. $6\overline{)0.24}$

8. $0.012 \div 3$

9. $5\overline{)0.25}$

Lesson

6 Decimals with Remainders

1. $37.5 \div 6$

2. $5\overline{)20.4}$

3. $3.86 \div 4$

4. $2\overline{)12.05}$

5. $8\overline{)27.6}$

6. $6.82 \div 5$

7. $6\overline{)16.71}$

8. $1.27 \div 2$

9. $4\overline{)9.3}$

Lesson

6 Dividing Decimals by Decimals

1. $3.864 \div 2.3$

2. $.7\overline{)5.964}$

3. $4.064 \div .32$

4. $.8\overline{)2.760}$

5. $28.32 \div 1.2$

6. $.5\overline{)4.395}$

Lesson

6 Dividing Whole Numbers by Decimals

1. $1{,}425 \div 1.5$

2. $.4\overline{)3}$

3. $920 \div 2.3$

4. $2.1\overline{)105}$

5. $1.8\overline{)63}$

6. $12 \div .5$

7. $.6\overline{)72}$

8. $10 \div .2$

9. $1.2\overline{)48}$

Lesson

17 Using a Calculator for Decimals

Use your calculator to solve the following problems, and write the answer below the problem. Round off longer answers to two decimal places.

1. 12.6×19.184

2. $7 - 0.028$

3. $16.3\overline{)52.51}$

4. $4.06 + 1.975$

5. $14.789 - 13.952$

6. $16 \div 5.14$

7. $10.904 + 5.6$

8. 11.6×19.21

Lesson 17

Using a Calculator to Convert Fractions to Decimals

Use your calculator to change the following common fractions to decimals, and write the answer below the problem. Round off longer answers to two decimal places.

1. $\frac{3}{16}$

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

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

4. $\frac{1}{6}$

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

6. $5\frac{1}{4}$

Lesson 17

Using a Calculator to Determine the Value of Exponents

Use your calculator to determine the value of the following terms. Do **not** round off decimal answers.

1. What is the value of 16^4?

2. What is the value of 0.2^3?

3. What is the value of 75^4?

4. What is the value of 19^3?

5. What is the value of 1.7^4?

6. What is the value of 16^2?

Lesson

17

Using a Calculator to Find Square Roots

Use your calculator to determine the value of the following terms. Round off decimal fractions to two decimal places.

1. What is the square root of 34.81?

2. What is the value of $\sqrt{360}$?

3. What is the value of $\sqrt{92.16}$?

4. What is the square root of 625?

5. What is the value of $\sqrt{256}$?

6. What is the square root of 15.21?

Grade 7

Year-end Review Practice Sheet 1

Solve each problem as indicated.

1. $\frac{3}{4}x = 1\frac{5}{7}$

2. $1\frac{1}{2}\left(3\frac{1}{4} - \frac{3}{4}\right)$

3. $\frac{5}{6} = \frac{h}{180}$

4. $2\frac{1}{4} + \left(-\frac{7}{8}\right)$

5. $\frac{1}{5}g = \frac{2}{3}$

6. $w - 5\frac{1}{3} = 1\frac{2}{3}$

7. $\frac{3}{45} = \frac{2}{p}$

8. $8c = 12$

9. $\sqrt{2\left(5^2 + 5^2\right)}$

10. $F + 14 = 6$

11. $7\frac{1}{8} - \left(-3\frac{5}{8}\right)$

12. $\frac{6}{36} = \frac{18}{c}$

13. The ratio of men to women at a certain college is 3 to 2. If there are 2,500 women at the college, how many men are there?

14. If a container holds 1.25 liters, how many milliliters is that?

15. What is the circumference of a circle with a diameter of 2.5 meters?

16. How many kilograms are 327 grams?

Grade 7

Year-end Review Practice Sheet 2

1. Find the mean, median, mode, and range for the following set of numbers. Round off the mean to the nearest tenth.

   103, 106, 104, 105, 107, 104, 102

   Mean:

   Median:

   Mode:

   Range:

2. How many millimeters are 15.3 centimeters?

3. How many kilometers are 12,624 meters?

4. What is the probability of taking 1 red stone out of a box containing 5 stones that are colored red, green, blue, yellow, and brown?

5. Jim is fishing in a pond, and there are 12 fish in the pond. 3 of the fish are trout and 9 are bass. If all of the fish are equally easy to catch, and if he keeps each fish he catches, what is the probability that the first two fish Jim catches will be trout?

Solve as indicated. Show your work.

6. $7.8 - (-2.4)$

7. $3(-9)$

8. $(-5)(-4)$

9. $12 \div (-6)$

10. $\frac{-21}{-3}$

11. $y - .4 = 2.8$

12. $5 + m = 8$

13. $9z = 0.45$

14. $\frac{3}{4}p = 15$

15. What is the chance of rolling an even number the first time on a die numbered 1 through 6?

16. If a spinner is divided into equal parts numbered 1 through 8, what is the chance that the arrow will land on either a 1 or an 8 two times in a row?

17. There are 8 oak trees, 4 birch trees, and 3 maple trees behind Jim's house. What is the ratio of oak trees to birch trees?

18. The ratio of teachers to students at Pikeville College is 1:20. If there are 4,000 students at the college, how many teachers are there?

19. Frank draws comic strips. He can draw 4 frames in 15 minutes. At that rate, how many frames can he draw in 6 hours?

20. What is the area of a rectangle with a width of 3.8 meters and a length of 15 meters?

Answer Key

Skill Practice and Test Problems

Lesson 1

Skills Check

1. $1.87
2. 47,844
3. 437.489
4. 238.25
5. 13,124
6. $1\frac{1}{3}$
7. $\frac{1}{6}$
8. Tyler has spent $857.28 on his phone bill in the last 24 months.

New Skills Practice

1. Mean: 19.9 Median: 19.5 Mode: 18 Range: 8
2. Mean: 1,165 Median: 1,166 Mode: 1,166 Range: 9
3. 1,296
4. 4
5. 625
6. 729
7. 2,401
8. 36
9. 8
10. 115
11. 90
12. 23.72
13. 11.6
14. 23.9
15. 129.8
16. 3.2
17. 10.2
18. 36.2

Lesson 1 Test

1. 625
2. 729
3. 1,000
4. 3
5. $\frac{5}{24}$
6. 1
7. 218
8. 38.8
9. 41
10. 20.5
11. 84
12. 27.8
13. The mean age of the child actors is 9 years old.
14. The median price of the used cars was $7,637.
15. Mean: 2003 Median: 2001 Mode: 2000, 2001 Range: 9
16. Mean: 33 Median: 33 Mode: 23 Range: 21

Lesson 2

Skills Check

1. 44.11
2. 114.54
3. 4.12
4. $8\frac{1}{12}$
5. 7.25
6. 136.64
7. 45.86
8. $2\frac{2}{5}$
9. 20.1

New Skills Practice

1. $\frac{5}{12}$
2. $1\frac{3}{8}$
3. $\frac{1}{4}$
4. $\frac{5}{24}$
5. $\frac{5}{18}$
6. $1\frac{1}{20}$
7. $31\frac{3}{10}$
8. $6\frac{1}{4}$
9. $18\frac{1}{2}$
10. $7\frac{2}{15}$
11. $28\frac{2}{3}$
12. $23\frac{1}{24}$
13. 6
14. 14
15. $24\frac{1}{24}$

Lesson 2 Test

1. $\frac{1}{12}$
2. $1\frac{1}{10}$
3. $\frac{1}{6}$
4. $\frac{17}{24}$
5. $\frac{19}{24}$
6. $\frac{1}{12}$
7. 42
8. $17\frac{2}{15}$
9. $42\frac{4}{15}$
10. 8.89
11. 488,166
12. $11\frac{1}{4}$
13. 38.68
14. 518
15. 26.25 km
16. $7.48
17. $288.89
18. 15.4 mi

Lesson 3

Skills Check

1. $21,900
2. $1\frac{1}{4}$ gallons
3. $546
4. 87 people

Lesson 6

Skills Check

1. 35.38
2. $5\frac{7}{12}$
3. 48.66
4. 11.34
5. $1\frac{1}{2}$
6. 32.2
7. 3.56
8. $3\frac{1}{4}$
9. 2.23

New Skills Practice

1. 1.4
2. 3.21
3. 1.504
4. .159
5. .088
6. .068
7. 8.675
8. 2.306
9. 5.325
10. 30.8
11. 5.49
12. 9.61
13. 18
14. 362.5
15. 9.375
16. 1, 2, 4, 8
17. 1, 2, 7, 14
18. 1
19. 1, 2, 3, 4, 6, 8, 12, 24
20. 1, 2, 5, 10
21. 1,7

Lesson 6 Test

1. 1.238
2. 2.496
3. $\frac{7}{10}$
4. .004
5. 20
6. 3.95
7. $2\frac{1}{2}$
8. 3.892
9. 619.595
10. 13.733
11. 360.64
12. 150
13. 12.4 miles
14. $193.75
15. $3.85
16. 19.25 km

Lesson 7

Skills Check

1. 17.435
2. $1\frac{1}{2}$
3. 376.56
4. .004
5. 3.076
6. 8.292
7. 215.18
8. 5
9. 3.065
10. 1.64
11. 6.41
12. 3.432
13. 71.6 miles
14. 29.5
15. $8.25
16. $15\frac{75}{100}$ or $15\frac{3}{4}$

Lesson 16

Skills Check

1. 20.6
2. 16
3. 6,561
4. 41
5. 7
6. 30
7. 216

New Skills Practice

1. $\frac{1}{7}$
2. $\frac{1}{4,096}$
3. $\frac{1}{2}$
4. $\frac{1}{221}$
5. 25%
6. 20%
7. 6.25%
8. 50%
9. 75%

Lesson 16 Test

1. $3\frac{1}{2}$
2. –3
3. $1\frac{2}{3}$
4. 12
5. 0
6. .0108
7. $-4\frac{1}{2}$
8. 224
9. $-\frac{1}{8}$
10. 16.4
11. 18
12. $23\frac{1}{2}$
13. Mean: 6.6 Median: 6.6 Mode: 6.7 Range: .9
14. 1, 2, 4, 7, 14, 28
15. 75%
16. $27\frac{5}{12}$

Lesson 17

Skills Check

1. 6.09
2. 7.68
3. 5
4. 2.6
5. 0.67
6. 456
7. 94%

New Skills Practice

1. 227.82
2. 47.26
3. 6.25
4. 8.38
5. 1.33
6. 0.22
7. 0.88
8. 4.82
9. 70%
10. 72%
11. 57%
12. 60%
13. 27%
14. 225
15. 110,592
16. 1,575.2961
17. 100,000
18. 49,787,136
19. 19.683
20. 13
21. 25.30
22. 32
23. 3.8

Lesson 17 Test

1. 18.90
2. 0.28
3. 15.96
4. – 4
5. 5.78
6. $1\frac{1}{2}$
7. 0.82
8. $4\frac{4}{5}$
9. +2
10. +8
11. 21.6
12. –13
13. –6.72
14. –3.2
15. –30.03
16. +6.52
17. $18.50
18. 37%
19. $2,377.05
20. $18.80

Lesson 18

Lesson 18 Test

1. Mean: 104.4 Median: 104 Mode: 104 Range: 5

2. 153 mm
3. 12.624 km
4. $\frac{1}{5}$
5. $\frac{5}{51}$
6. 10.2
7. – 27
8. + 20
9. – 2
10. 7
11. $y = 3.2$
12. $m = 3$
13. $z = 0.05$
14. $p = 20$
15. 50%
16. 6.25%
17. $1\frac{1}{16}$
18. 4.06
19. +10.2
20. 19.51
21. 0.67
22. 28.54
23. –6.9
24. 16.76
25. +11.4
26. –4.4
27. $1\frac{11}{21}$
28. 3.61
29. 9
30. 70
31. 29
32. 54.08
33. +22.1
34. –2.6
35. –24.96
36. +3.38
37. 2
38. 15.3
39. 19.1
40. 31
41. 7.4
42. 14.4
43. $\frac{1}{7}$
44. $\frac{1}{45}$
45. 14
46. 100
47. –18.7
48. 4,913
49. +32.64
50. 0.29 seconds

Lesson 19

Skills Check

1. 0.625
2. 10.8
3. 1.4%
4. 61.05
5. 20,736
6. 11.92
7. 7.21%
8. $90\frac{1}{4}$

Lesson 22

Skills Check

1. $x = 6$
2. 15.66
3. $2\frac{2}{5}$
4. −0.48
5. $y = 4\frac{2}{3}$
6. $g = 3.1$
7. $\frac{1}{24}$
8. $e = 1.95$
9. 9

New Skills Practice

1. 243, 729, 2187
2. 156, 168, 180
3. 160, 320, 640
4. 75, 90, 105
5. 90, 108, 126
6. a. 11 b. 20 c. 29
7. a. 5 b. 15. c. 25
8. a. 12.2 b. 18.6 c. 25
9. a. $1\frac{1}{4}$ b. $1\frac{3}{4}$ c. $2\frac{1}{4}$
10. $y = x + 7$
11. $y = 4x$
12. $y = 2x + 1$
13. $y = \frac{1}{4}x$

Lesson 22 Test

1. $m = 3\frac{3}{7}$
2. 5.6
3. $h = 4.8$
4. 13
5. $d = 0.72$
6. 0
7. $s = 2.5$
8. $y = 3\frac{5}{9}$
9. 5.11
10. $\frac{26}{35}$
11. 7.68
12. $x = -6$
13. 706.5 sq. feet
14. 41.8, 45.6, 49.4
15. a. 0 b. 6 c. 18

Lesson 23

Lesson 23 Test

1. 21.98 inches
2. 28.26 sq. miles
3. 352 sq. inches
4. $a = 58.5$ sq. cm.
5. 1 hour 36 minutes
6. 8 inches
7. $\frac{1}{16}, \frac{1}{32}, \frac{1}{64}$
8. a. 46 b. 71 c. 96
9. a. 27 b. 42 c. 57
10. $y = x^2$
11. $y = x^2 + 2$
12. $8\frac{1}{4}$ cups
13. 256
14. .23 seconds
15. $3.25
16. 25%
17. 26
18. 84
19. 19
20. 41

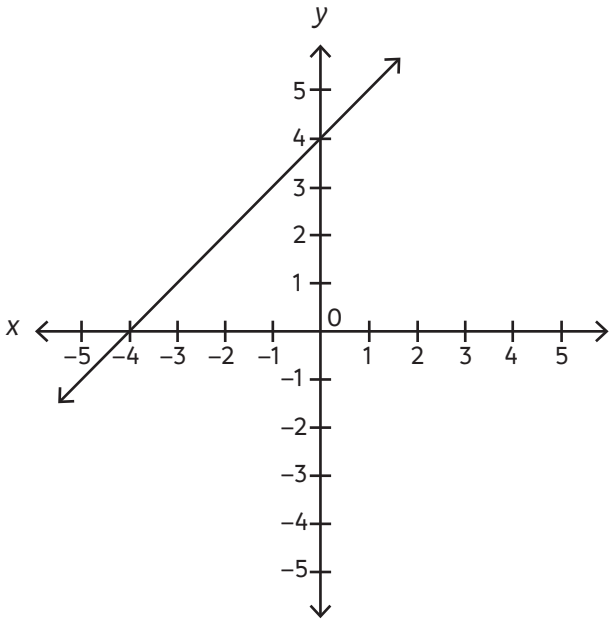
36. $y = 2x + 1$

37. 22

38. 10010110

39. a. (1, 3) b. (–3, 0) c. (–4, –3) d. (2, –2)

40. Individual points will vary and can be anywhere on the line, but the line must be in the location indicated.



Extra Practice Worksheets

Lesson 1

Addition and Subtraction in Order of Operations

1. 24
2. 18.9
3. 27.74
4. 4.4
5. 9.4
6. 38.76

Parentheses in Order of Operations

1. 5.5
2. 12.08
3. 6.51
4. 15.7
5. 40.5
6. 27.96
7. 8.1
8. 16.34
9. 17.6
10. 15.7
11. 6.91
12. 6.2

Multiplication in Order of Operations

1. 33.2
2. 11.1
3. 21
4. 17.46
5. 30
6. 27.18
7. 42
8. 22.9

Division in Order of Operations

1. 20
2. 24.2
3. 30
4. 45
5. 10
6. 16
7. 2
8. 15.3
9. 19.1
10. 31
11. 7.4
12. 14.4

Lesson 2

Common Denominators in Addition and Subtraction Involving Fractions

1. $\frac{3}{10}$
2. $\frac{7}{10}$
3. $\frac{5}{8}$
4. $\frac{5}{12}$
5. $1\frac{3}{8}$
6. $\frac{3}{4}$

Finding the Lowest Common Denominator (LCD)

1. $\frac{7}{24}$
2. $1\frac{5}{24}$
3. $\frac{11}{18}$
4. $\frac{7}{24}$
5. $\frac{3}{20}$
6. $1\frac{7}{12}$

LCDs in Mixed Numbers

1. $9\frac{1}{8}$
2. $31\frac{1}{4}$
3. $4\frac{7}{12}$
4. $12\frac{7}{24}$
5. $11\frac{5}{12}$
6. 21

Regrouping in Mixed Number Subtraction

1. $11\frac{5}{8}$
2. $22\frac{7}{20}$
3. 5
4. $8\frac{5}{12}$
5. $4\frac{4}{9}$
6. $7\frac{7}{10}$

Lesson 3

Multiplying Fractions

1. $\frac{5}{8}$
2. 6
3. $\frac{1}{18}$
4. $1\frac{3}{4}$
5. $\frac{8}{15}$
6. 3
7. $\frac{1}{6}$

Multiplying Mixed Numbers

1. $1\frac{11}{24}$
2. $7\frac{11}{12}$
3. $1\frac{3}{20}$
4. $3\frac{3}{10}$
5. $\frac{11}{12}$
6. $4\frac{1}{6}$
7. $1\frac{1}{7}$

Reducing Fractions by Canceling before Multiplying

1. 1
2. 4
3. $\frac{1}{2}$
4. $3\frac{1}{5}$
5. 11
6. $1\frac{1}{2}$
7. $\frac{1}{4}$

Dividing Fractions

1. 16
2. $\frac{4}{5}$
3. 10
4. $1\frac{2}{5}$
5. $3\frac{1}{3}$
6. $\frac{1}{20}$
7. $\frac{1}{15}$

Lesson 5

Comparing Decimals

1. <
2. >
3. =
4. >
5. <
6. <
7. >
8. >

Adding Decimals

1. 10.432
2. 9.25
3. 15.103
4. .87
5. 13.42
6. 9.05
7. 11.63
8. 8.41

Subtracting Decimals

1. .43
2. 3.437
3. .496
4. 11.68
5. 9.305
6. .311
7. .217
8. 12.204

Multiplying Decimals

1. 74.034
2. 0.27
3. 65.32
4. 23.154
5. 1.086
6. 10.75
7. 2.44
8. 44.24

Lesson 6

Dividing Decimals by Whole Numbers

1. 4.791
2. 2.681
3. 6.238
4. 1.25
5. 2.405
6. 3.8

Dividends of Less Than 1

1. .025
2. .019
3. .003
4. .12
5. .007
6. .03
7. .04
8. .004
9. .05

Decimals with Remainders

1. 6.25
2. 4.08
3. .965
4. 6.025
5. 3.45
6. 1.364
7. 2.785
8. .635
9. 2.325

Dividing Decimals by Decimals

1. 1.68
2. 8.52
3. 12.7
4. 3.45
5. 23.6
6. 8.79

Dividing Whole Numbers by Decimals

1. 950
2. 7.5
3. 400
4. 50
5. 35
6. 24
7. 120
8. 50
9. 40

Lesson 7

Multiplying Decimals by 10, 100, and 1,000

1. 20.5
2. 34.2
3. 796.5
4. 61.4
5. 6,182.4
6. 35.6
7. 25.87

Dividing Decimals by 10, 100, and 1,000

1. 29.07
2. .043
3. 7.832
4. .8693
5. .9564
6. 7.937
7. 3.917

Calculating Percentages

1. 75
2. 8.64
3. 31.6
4. 4.62
5. 45
6. 125
7. 11.76

Converting Decimals to Percentages

1. 700%
2. 25%
3. 75.2%
4. 240%
5. 90%
6. 35%

Simple and Compound Interest

1. $1,725
2. $75,000
3. $185,646.50
4. $32,768

Lesson 17

Using a Calculator for Decimals

1. 241.72
2. 6.97
3. 3.22
4. 6.04
5. 0.84
6. 3.11
7. 16.50
8. 222.84

Using a Calculator to Convert Fractions to Decimals

1. 0.19
2. 0.87
3. 3.50
4. 0.17
5. 0.67
6. 5.25

Using a Calculator to Determine the Value of Exponents

1. 65,536
2. 0.008
3. 31,640,625
4. 6,859
5. 8.3521
6. 256

Using a Calculator to Find Square Roots

1. 5.9
2. 18.97
3. 9.6
4. 25
5. 16
6. 3.9

Lesson 20

Calculating the Area of a Triangle

1. 52.5 sq. meters
2. 90 sq. inches
3. $2\frac{3}{16}$ sq. ft.
4. 43.5 sq. meters
5. 198 sq. feet
6. 300 sq. inches

Lesson 21

Applying Formulas

1. 21.88 square inches
2. 248 square centimeters
3. 400 kilometers
4. 44.16 square inches (or 44.15 if student rounded off value of radius squared before multiplying by pi)
5. 23.55 inches
6. 512 square feet

Transforming Formulas

1. 3.84 centimeters
2. 9.5 inches
3. 3 hours 12 minutes (3.2 hours)
4. 22 millimeters
5. 3.75 miles

Lesson 31

Roots of Fractions

1. $\frac{3}{4}$
2. $\frac{7}{8}$
3. $\frac{6}{7}$
4. $\frac{9}{14}$

Exponents with Negative Bases

1. –216
2. +1
3. +4
4. 158
5. +241

Roots of Negative Numbers

1. –4
2. –3
3. +4
4. +22
5. +11
6. –15

Lesson 33

Scientific Notation

1. 9.438×10^{-2}
2. 2.35×10^{5}
3. 3.487×10^{-1}
4. 1.825×10^{-6}
5. 6×10^{4}
6. 6×10^{16}

Lesson 35

Grade 7 Year–end Review Practice Sheet 1

1. $x = 2\frac{2}{7}$
2. $3\frac{3}{4}$
3. $h = 150$
4. $1\frac{3}{8}$
5. $g = 3\frac{1}{3}$
6. $w = 7$
7. $p = 30$
8. $c = 1\frac{1}{2}$
9. 10
10. $F = -8$
11. $10\frac{3}{4}$
12. $c = 108$
13. 3,750 men
14. 1,250 mL
15. 7.85 meters
16. 0.327 kg

Grade 7 Year–end Review Practice Sheet 2

1. Mean: 104.4 Median: 104 Mode: 104 Range: 5
2. 153 mm
3. 12.624 km
4. $\frac{1}{5}$
5. $\frac{1}{22}$
7. 10.2
8. – 27
9. + 20
10. – 2
11. 7
12. $y = 3.2$
13. $m = 3$
14. $z = 0.05$
15. $p = 20$
16. 50%
17. 6.25%
18. 2:1
19. 200 teachers
20. 96 frames
21. 57 sq. meters