

# Grade 7 Math

## Oak Meadow Workbook

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## Lesson



# Skills Check

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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.).

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

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

$$3. \quad 469.743 - 32.254$$

$$4. \quad 2,859 \div 12$$

$$5. \quad 386 \times 34$$

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

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

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

## Lesson



# New Skills Practice: Mean, Median, Mode, and Range; Exponents; and Order of Operations

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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



# Test

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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



# Skills Check

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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.  $12.45$   
 $\times 9.2$   

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3.  $0.63 + 3.49$

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

5.  $7.9 - 0.65$

6.  $9.76 \times 14$

**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



# New Skills Practice: Lowest Common Denominator in Fractions and Mixed Numbers

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Reduce answers to the lowest terms.

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

2.  $\frac{7}{8}$   
 $+ \frac{1}{2}$   

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

Find the lowest common denominator and solve.

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

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

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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.  $19\frac{1}{2}$   
 $- 13\frac{1}{4}$   

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

10.  $21\frac{1}{3}$   
 $- 14\frac{1}{5}$   

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

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

13.  $13\frac{1}{4}$   
 $- 7\frac{2}{8}$   

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14.  $28\frac{2}{4}$   
 $- 14\frac{1}{2}$   

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

## Lesson



# Test

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Reduce answers to the lowest terms.

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

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

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

Find the lowest common denominator and solve.

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

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

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

**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



# Skills Check

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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.  $9.2 \times 3.5$

7.  $12.6 - 9.04$

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

9.  $1.287 + 0.94$

## Lesson



# New Skills Practice: Dividing Decimals; Factors and Prime Numbers

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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



# Test

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

**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



# Skills Check

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Reduce all fractions to lowest terms.

1.  $0.06 + 17.375$

2.  $1\frac{7}{8} \div 1\frac{1}{4}$

3. 
$$\begin{array}{r} 15.69 \\ \times 24 \\ \hline \end{array}$$

4. 
$$9 \overline{)0.036}$$

5. 
$$\begin{array}{r} 7.69 \\ \times .4 \\ \hline \end{array}$$

6.  $9.6 - 1.308$

7.  $40.6 \times 5.3$

8.  $3\frac{1}{8} \times 1\frac{6}{10}$

9. 
$$2 \overline{)6.13}$$



**Lesson 7 Skills Check** *(continued)*

10.  $6 \overline{)9.84}$

11.  $5 \overline{)32.05}$

12.  $0.286 \times 12$

13. On Saturday, Naomi drove 42.9 miles. On Sunday, she drove 28.7 miles. How many total miles did she drive on Saturday and Sunday?

14. Write  $29\frac{5}{10}$  as a decimal fraction.

15. Ibrahim bought a pair of pants, and the total came to \$31.75. If he gave the clerk two \$20 bills, how much change should he receive?

16. Write 15.75 as a common fraction.

## Lesson



# New Skills Practice: Percentages, Simple and Compound Interest

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1.  $7.902 \times 10$

2.  $7.891 \times 100$

3.  $5.732 \times 1000$

4.  $290.7 \div 10$

5.  $348.7 \div 100$

6.  $169.2 \div 1000$

7. How much is 25% of 600?

8. How much is 14% of 325?

9. 2% of 96 is how much?

**Lesson 7 New Skills Practice** *(continued)*

Convert the following decimals to percents and include the percent sign.

**10.** .79

**13.** .80

**11.** .548

**14.** 5.96

**12.** .6

**15.** .3

- 16.** Samantha is interested in a stereo system that she saw at Stereo Warehouse. The system normally sells for \$849, but it's on sale for 20% off the regular price. How much will Susan save off the regular price if she buys during the sale?

- 17.** Ellen goes to an exercise class every Wednesday night. 40% of the students in the class are men. If there are 30 students in the class, how many men are in Ellen's exercise class?

- 18.** 60% of the members of the Riverview Kiwanis Club voted for Jeff Bridges for President. If there were 75 members in the club, how many members voted for Jeff?

**Lesson 7 New Skills Practice** *(continued)*

- 19.** What is the simple interest on \$30,000 at 9% for 3 years?
- 20.** Erika loaned Max \$10,000 for one year at 8%. How much will Max have to pay Erika at the end of the year?
- 21.** What is the value of \$40,000 compounded annually at 8% for 3 years?
- 22.** If you put \$20,000 in a bank account that earns 6% interest compounded annually, how much will you have in the account after 4 years, if you don't add or withdraw any money?

# Lesson



# Test

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Reduce all common fractions to lowest terms.

1.  $.6 \overline{)14.04}$

2.  $2^5$

3.  $7 \overline{)1.435}$

4.  $9(7.1 - 2.6)$

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

6. 5% of 240

7.  $1.8 \overline{)428.4}$

8.  $2\frac{3}{5} \div \frac{4}{5}$

9.  $49 \div 3$

**Lesson 7 Test** *(continued)*

10. 12.5% of 86

11. 
$$\begin{array}{r} .638 \\ \times 4.2 \\ \hline \end{array}$$

12.  $10\left(\frac{1}{2} \cdot \frac{3}{4}\right)$

13.  $18 - 6 \cdot 2 + 9 - 3(3)$

14.  $25 - (6 + 3) + 8 \div 2 - (12 - 8)$

15.  $3(4 + 2) - 6 + 5 \cdot 2 + (12 - 5)$

16.  $4(8) - 16 + (6 + 2) - 18 \div 3$

17. What is the simple interest on \$40,000 for 10 years at 12%?

18. What is the value of \$120,000 compounded annually at 12% for 3 years?

**Lesson 7 Learning Checklist**

LESSON 7 SKILLS	Developing	Consistent	Competent	Notes
Multiply decimals by 10, 100, and 1,000				
Divide decimals by 10, 100, and 1,000				
Convert between percentages and decimals				
Calculate percentages				
Determine simple interest based on a principal amount				
Calculate compound interest				