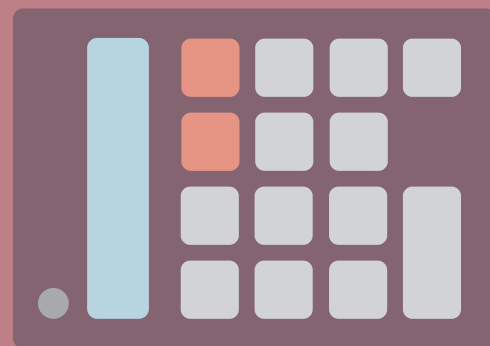




MATH

Student Book

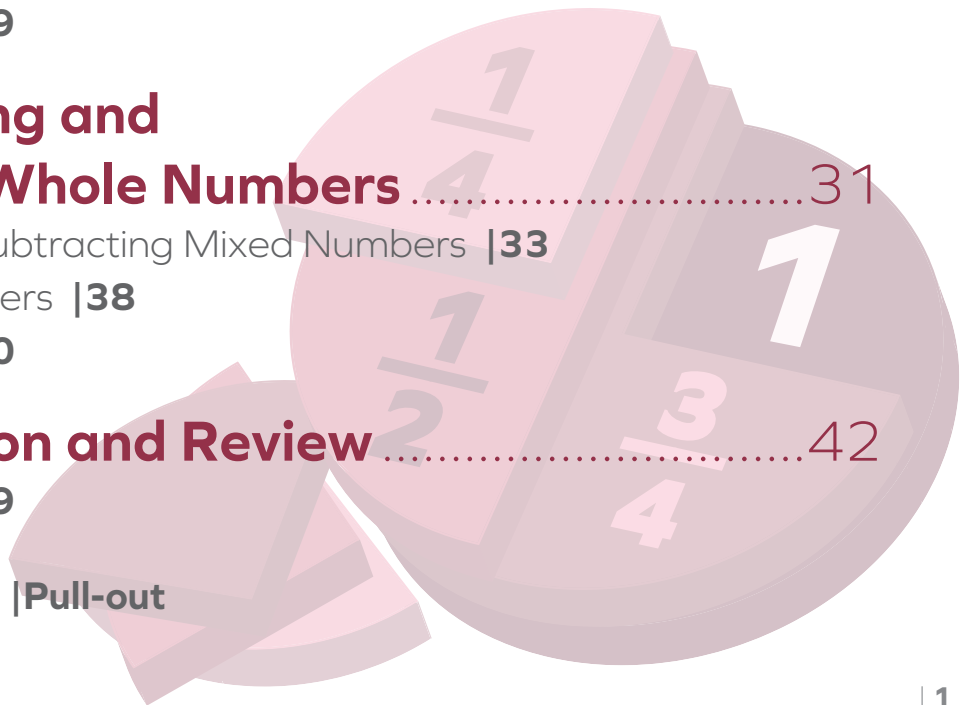


▶ **4th Grade | Unit 9**

MATH 409

DECIMALS AND FRACTIONS

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1. DECIMALS

Objectives

Read these objectives. When you have completed this section, you should be able to:

- Read and write decimals.
- Add and subtract decimals.
- Review multiplication of whole numbers.
- Locate numbers on a grid pattern.

Let's review the place value chart for whole numbers to hundred thousands.

hundreds	thousands		ones	,	hundreds	units		ones
	tens					tens		
6	3		1	,	8	4		5

631,845 is read, "six hundred thirty-one thousand, eight hundred forty-five."

We use a hyphen to join the tens' numbers and ones' numbers.

We write a comma between the thousands' place and hundreds' place.



Complete this activity.

1.1

Answer these questions about the place value chart.

- a. What are the two main parts of the place value chart?

_____ , _____

- b. What are the three places in each main part?

_____ , _____ , _____

- c. What do we write between the two main parts? _____
- d. What do we always write between the number words for tens and ones?

Decimals are special fractions.

Decimals have denominators that are multiples of 10.

Look at the place value chart for whole numbers and decimals. The whole numbers are on the left. The decimals are on the right. A decimal point separates the whole numbers from the decimals.

hundreds	units tens	ones	.	tenths	decimals hundredths	thousandths
100's	10's	1's	.	10ths	100ths	1,000ths



Complete these activities.

- 1.2** Answer the questions. Use the whole number and decimal chart.
What is the first place to the right of the decimal point? _____
the second place? _____ the third place? _____
- 1.3** Follow the instructions. Use the whole number and decimal chart.

hundreds	tens	ones	.	tenths	hundredths	thousandths
100's	10's	1's	.	10ths	100ths	1,000ths

- a. Write a 4 above the word *tenths*. We say four-tenths.
We write the fraction $\frac{4}{10}$ or the decimal **.4**.
- b. Write an 8 above the word *hundredths*. We say forty-eight hundredths.
We write the fraction $\frac{48}{100}$ or the decimal **.48**.

- c. Write a 2 above the word *thousandths*. We say four hundred eighty-two thousandths. We write the fraction $\frac{482}{1,000}$ or the decimal **.482**.

1.4 Write the missing numbers or words on the lines.

	decimal	fraction	number written in words
a.	.3	_____	three tenths
b.	.6	_____	_____
c.	_____	$\frac{5}{10}$	_____
d.	_____	_____	eight tenths
e.	.35	_____	thirty-five hundredths
f.	.75	_____	_____
g.	_____	$\frac{84}{100}$	_____
h.	_____	_____	sixty-three hundredths
i.	.409	_____	four hundred nine
j.	.234	_____	_____
k.	_____	$\frac{161}{1,000}$	_____
l.	_____	_____	nine hundred fo

In learning about decimals, it is important to remember ...

- decimals are special fractions and so we read them like fractions.
- decimals have denominators in the sequence of 10, 100, 1,000 ...
- the first place to the right of the decimal point is 10ths.
- in order to use calculators, it is necessary to understand decimals.

You have been using decimals whenever you add or subtract in money problems.

1.5 Complete these problems in addition and subtraction of money. Be sure to put the dollar sign and decimal point in the answer.

a.

$$\begin{array}{r} \$53.80 \\ + \$26.41 \\ \hline \end{array}$$

$$\begin{array}{r} \$32.08 \\ + \$52.75 \\ \hline \end{array}$$

$$\begin{array}{r} \$68.23 \\ + \$48.56 \\ \hline \end{array}$$

$$\begin{array}{r} \$68.28 \\ + \$14.85 \\ \hline \end{array}$$

b.

$$\begin{array}{r} \$2.51 \\ \$3.48 \\ \$2.82 \\ + \$2.10 \\ \hline \end{array}$$

$$\begin{array}{r} \$2.31 \\ \$7.56 \\ \$2.16 \\ + \$4.22 \\ \hline \end{array}$$

$$\begin{array}{r} \$3.38 \\ \$3.42 \\ \$3.50 \\ + \$2.81 \\ \hline \end{array}$$

$$\begin{array}{r} \$2.35 \\ \$3.10 \\ \$5.13 \\ + \$9.21 \\ \hline \end{array}$$

c.

$$\begin{array}{r} \$96.76 \\ - \$32.75 \\ \hline \end{array}$$

$$\begin{array}{r} \$85.49 \\ - \$21.61 \\ \hline \end{array}$$

$$\begin{array}{r} \$73.42 \\ - \$23.21 \\ \hline \end{array}$$

$$\begin{array}{r} \$87.85 \\ - \$32.52 \\ \hline \end{array}$$

d.

$$\begin{array}{r} \$47.80 \\ - \$13.63 \\ \hline \end{array}$$

$$\begin{array}{r} \$52.53 \\ - \$11.47 \\ \hline \end{array}$$

$$\begin{array}{r} \$83.52 \\ - \$52.88 \\ \hline \end{array}$$

$$\begin{array}{r} \$64.80 \\ - \$28.41 \\ \hline \end{array}$$

Multiply a Four-Digit Number

Follow the steps to multiply to thousands' place by two digits.

$$\begin{array}{r} 6,046 \\ \times 74 \\ \hline 24,184 \\ 423,220 \\ \hline 447,404 \end{array}$$

1. Multiply 6,046 by 4 ones.
2. Put a 0 place holder in the ones' place below the 4.
3. Multiply 6,046 by 7 tens.
4. Total the products.



Complete this activity.

1.6 Follow the steps in the previous example. Find the products.

a.

$$\begin{array}{r} 142 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 721 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 482 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 328 \\ \times 8 \\ \hline \end{array}$$

b.

$$\begin{array}{r} 672 \\ \times 25 \\ \hline \end{array}$$

$$\begin{array}{r} 486 \\ \times 38 \\ \hline \end{array}$$

$$\begin{array}{r} 759 \\ \times 76 \\ \hline \end{array}$$

$$\begin{array}{r} 437 \\ \times 69 \\ \hline \end{array}$$

c.

$$\begin{array}{r} 1,385 \\ \times 52 \\ \hline \end{array}$$

$$\begin{array}{r} 2,563 \\ \times 44 \\ \hline \end{array}$$

$$\begin{array}{r} 8,624 \\ \times 93 \\ \hline \end{array}$$

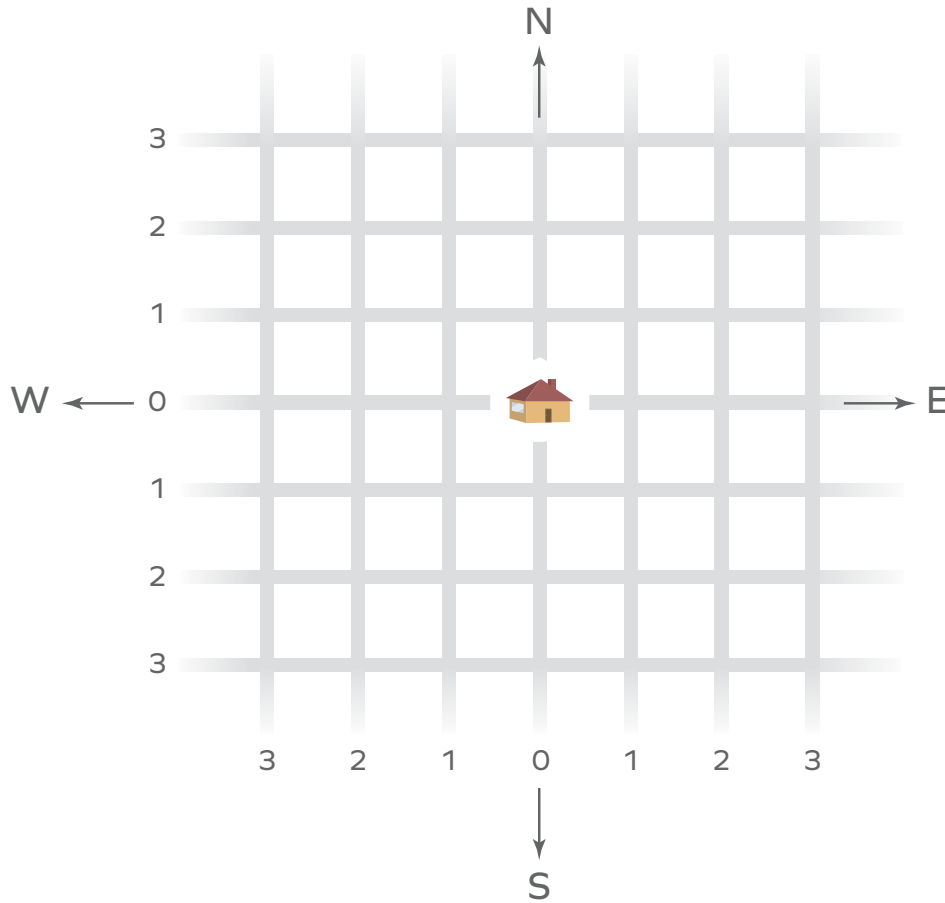
$$\begin{array}{r} 7,283 \\ \times 16 \\ \hline \end{array}$$

Numbers on a Grid Pattern

We can learn to locate points on a grid pattern.

The center of this grid pattern is  .

The numbers represent miles. The arrows show the directions. Points are always located along the horizontal line (east-west) first, and the vertical line (north-south) second.



Complete these activities.

1.7 Locate these points on the grid above. Make a dot and write the letter.

- A. one mile east and two miles north
- B. one mile east and two miles south
- C. two miles west
- D. one mile west and two miles north
- E. one mile west and two miles south
- F. two miles east

- 1.8** Connect the end points D to A to F to B to E to C to D .
How would you describe the figure you have drawn? _____
- 1.9** Complete these number boxes in multiplication and division. Look at the sign on the corner of the box and then find the missing numbers.

a.

\times	0	3	4
2			
6			
8			

b.

\div	$\div 2$	$\div 3$	$\div 6$
24			
12			
6			



Review the material in this section to prepare for the Self Test. The Self Test will check your understanding of this section. Any items you miss on this test will show you what areas you will need to restudy in order to prepare for the unit test.

SELF TEST 1

Fill in the blanks (each answer, 1 point).

1.01 Decimals are special _____.

1.02 Decimals have denominators that are multiples of _____.

1.03 What is the first place to the right of the decimal point? _____
 the second place? _____ the third place? _____

1.04 Write the missing numbers or words on the lines.

_____ $\frac{2}{10}$ _____
 .47 _____
 _____ _____ six hundred twenty-three thousandths

Solve these problems (each problem, 2 points).

1.05 Complete these problems in addition and subtraction of money. Use dollar signs and decimal points in your answers.

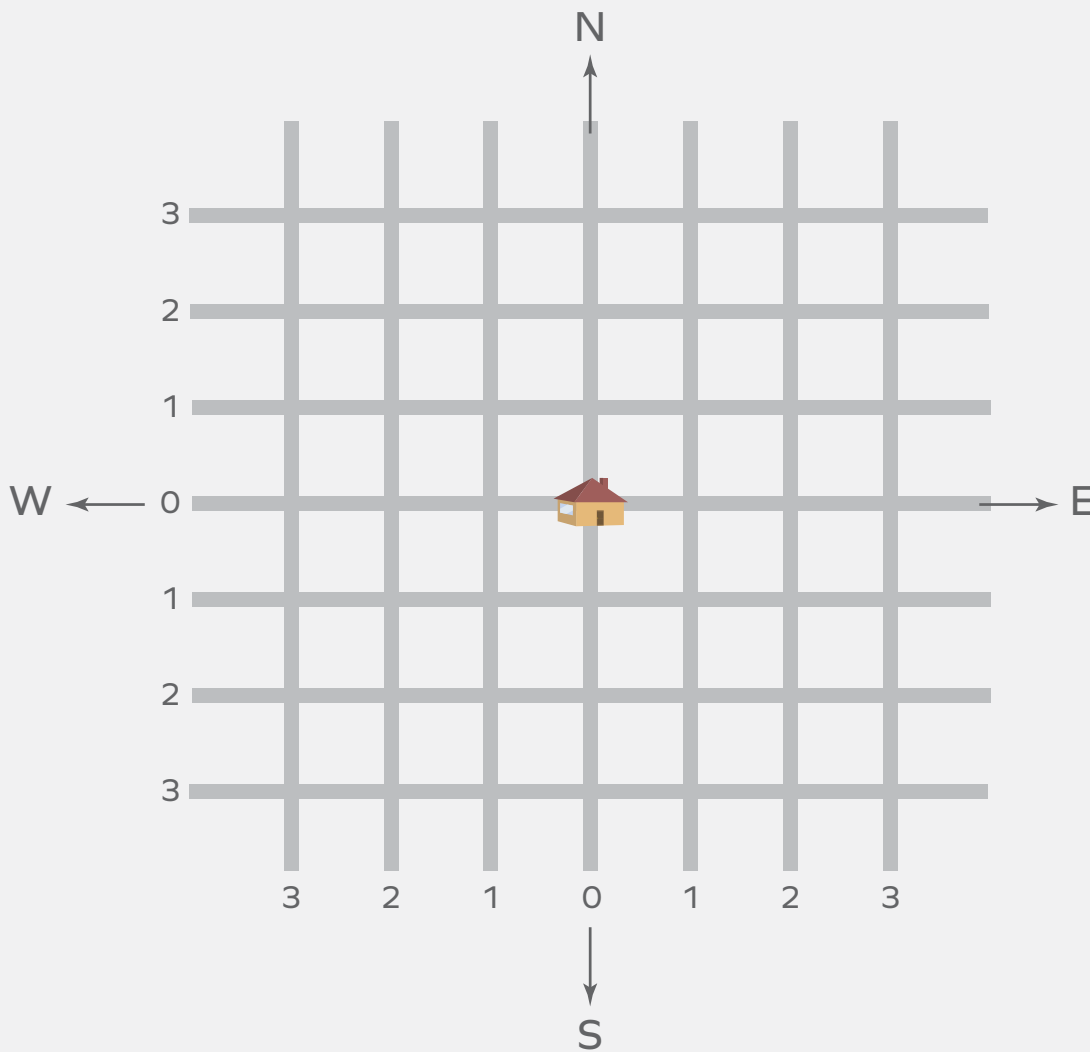
$\$47.80$	$\$5.68$		
$+ \$13.63$	$\$3.45$	$\$52.53$	$\$83.62$
$\underline{\hspace{1.5cm}}$	$\underline{\hspace{1.5cm}}$	$\underline{\hspace{1.5cm}}$	$\underline{\hspace{1.5cm}}$

1.06 Find the products.

376	$7,423$	$3,850$
$\times 28$	$\times 54$	$\times 47$
$\underline{\hspace{1.5cm}}$	$\underline{\hspace{1.5cm}}$	$\underline{\hspace{1.5cm}}$

Complete this activity (each correct letter, 1 point).

- 1.07** Locate these points on the grid pattern below. Make a dot and write the letter.
- A. one mile west and two miles south
 - B. two miles east and three miles north
 - C. one mile east and one mile south
 - D. three miles west and one mile north
 - E. two miles west and two miles north



Teacher check:

Score _____

Initials _____

Date _____

24
30



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