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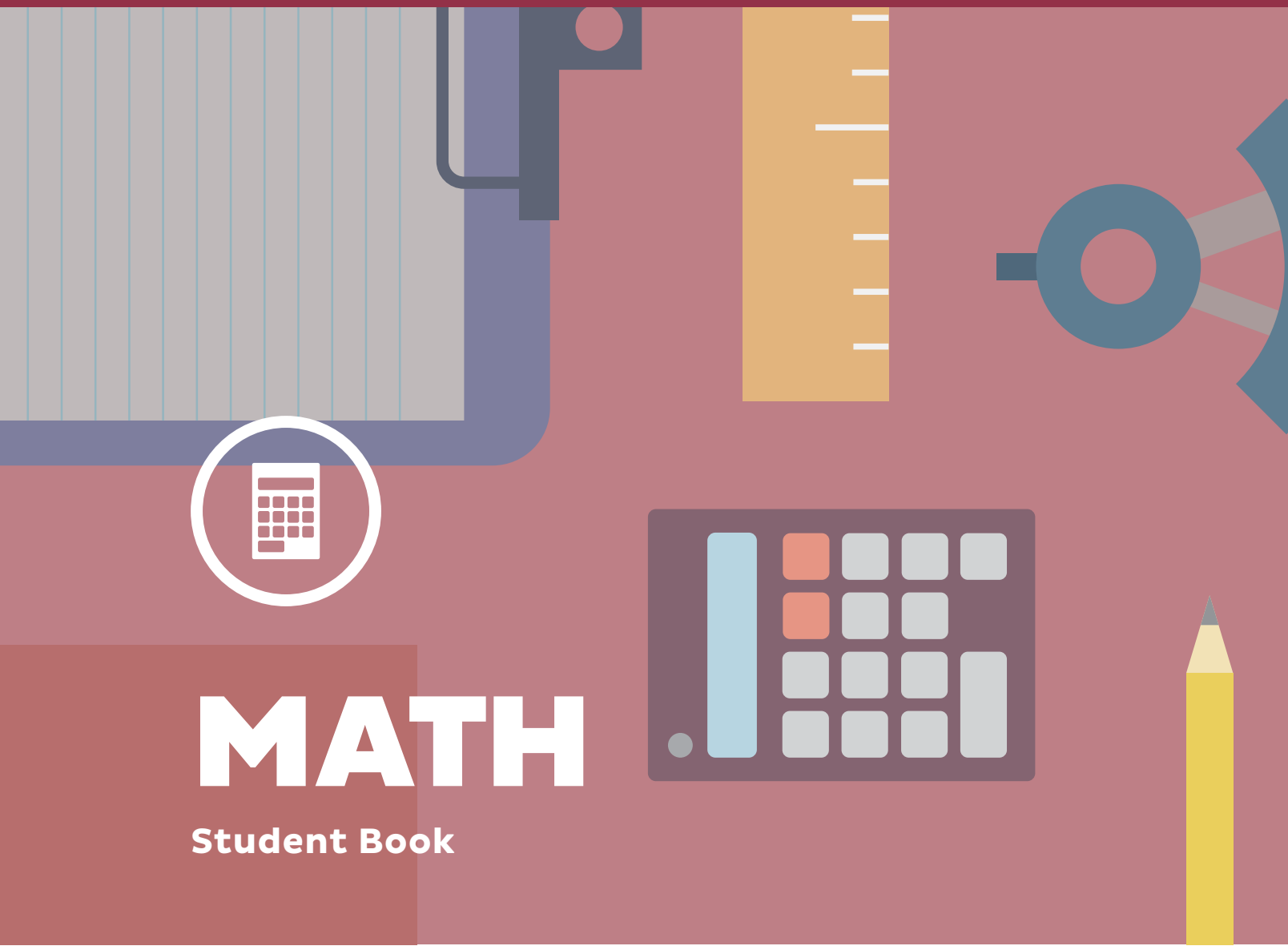

MATH

Student Book

4th Grade | Unit 6

Alpha Omega
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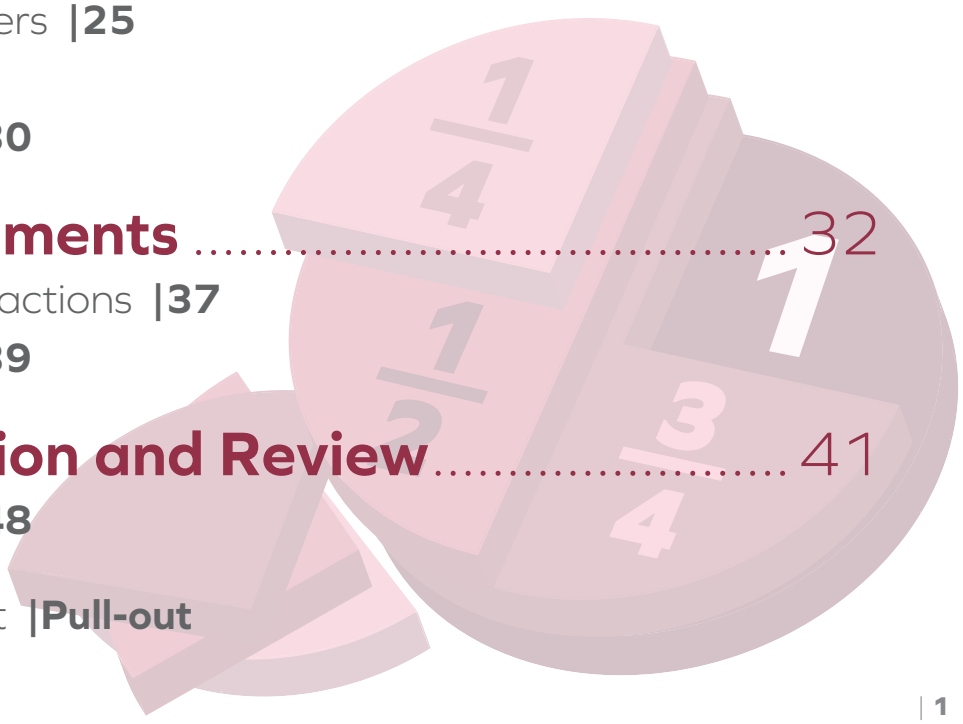
MATH 406

DIVISION, FACTORS, AND FRACTIONS



Author:
Carol Bauler, B.A.

Editor:
Alan Christopherson, M.S.

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804 N. 2nd Ave. E.
Rock Rapids, IA 51246-1759

1. PRIME AND COMPOSITE NUMBERS

Objectives

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

- Identify prime and composite numbers.
- Identify factors and multiples.
- Perform division by a 1-digit number with remainders.

A **prime number** can be divided only by 1 and itself.

2 can be divided only by 1 and 2.

3 can be divided only by 1 and 3.

5 can be divided only by 1 and 5.

0 and 1 are not considered prime numbers.

A **composite number** can be divided by 1, itself, and other numbers.

4 can be divided by 1, 2, and 4.

6 can be divided by 1, 2, 3, and 6.

8 can be divided by 1, 2, 4, and 8.

Complete these activities.

1.1 What numbers can these composite numbers be divided by? List all numbers.

a. 9 _____

b. 10 _____

c. 12 _____

Factors and Multiples

Factors are all the numbers that when multiplied produce a given number.

Complete these activities.

1.2 The factors of ...

a. ... 9 are 1, 3, 9. Was this your answer to 1.1(a.)? _____

b. ... 10 are 1, 2, 5, 10. Was this your answer to 1.1(b.)? _____

c. ... 12 are 1, 2, 3, 4, 6, 12. Was this your answer to 1.1(c.)? _____

A **composite** number can be divided by all of its factors.

1.3 List the factors of the numbers. Tell the number of factors. Write *prime* or *composite*.

	Factors	Number	Prime or Composite
a. 13			
b. 14			
c. 15			
d. 16			
e. 17			
f. 18			

1.4 Write all of the digits except 0. _____

1.5 Multiply 2 by each one of the digits and write your answers.

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

The numbers you have written are called multiples of 2.

Multiples are numbers that result when factors are multiplied together.

1.6 Multiply 3 by each one of the digits.

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

The numbers you have written are called multiples of 3.

1.7 Write the factors of 6. _____

1.8 Write nine multiples of 6. _____

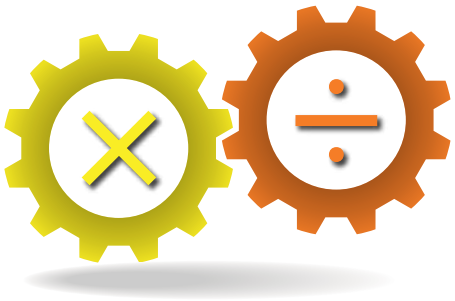
1.9 Write the factors of 8. _____

1.10 Write nine multiples of 8. _____

1.11 Are 6 and 8 prime or composite numbers? _____

Division

Multiplication and division work together. Multiplication facts and division facts belong to the same family of facts.



You will need objects for counting.

1.12 Write the family of facts for 3, 5, 15.

_____ _____ _____ _____

Let's take a closer look at how we divide 15 by 5.
In division, we start with the first digit on the left in the dividend and then move to the right.

$$5\overline{)15}\quad 3$$

We begin by trying to divide 5 into 1.
1 is too small to be a multiple of 5, so we try 15.
15 is a multiple of 5.
5 divides into 15 three times.

Complete these activities.

1.13 Divide 11 objects into sets of 4.

a. How many sets of 4 could you make? _____

b. How many objects were left over? _____

$$\begin{array}{r} 2\ \text{R}\ 3 \\ 4\overline{)11} \\ \underline{8} \\ 3 \end{array}$$

Starting from the left, we look at the first number in the dividend.

1 is too small to be a multiple of 4, so we try 11.

The largest multiple of 4 less than 11 is 8 ($2 \times 4 = 8$).
We say that 4 divides into 11 two times.

The next step is to multiply 2×4 and put the answer below the 11.

Subtracting 8 from 11, we find that we have a remainder of 3.

1.14 Divide 18 objects into sets of 5.

a. How many sets of 5 could you make? _____

b. How many objects were left over? _____

$$\begin{array}{r} 3 \text{ R } 3 \\ 5\overline{)18} \\ \underline{15} \\ 3 \end{array}$$

Starting from the left, we look at the first number in the dividend.

1 is too small to be a multiple of 5, so we try 18.

The largest multiple of 5 less than 18 is 15 ($3 \times 5 = 15$). We say that 5 divides into 18 three times.

The next step is to multiply $3 \times 5 = 15$ and put the answer below the 18.

Subtracting the 15 from 18, we have a remainder of 3.

1.15 Divide 26 objects into sets of 6.

a. How many sets of 6 could you make? _____

b. How many objects were left over? _____

$$\begin{array}{r} 4 \text{ R } 2 \\ 6\overline{)26} \\ \underline{24} \\ 2 \end{array}$$

Follow these steps for division.

1. Divide (from left to right)
2. Multiply
3. Subtract

It is very important to know the multiples of digits to solve division problems.

1.16 Follow the steps for division.

a.

$2\overline{)19}$ $6\overline{)27}$ $2\overline{)15}$

b.

$4\overline{)33}$ $5\overline{)42}$ $3\overline{)26}$

c.

$3\overline{)25}$ $4\overline{)26}$ $4\overline{)35}$

d.

$9\overline{)37}$ $6\overline{)56}$ $8\overline{)43}$

1.17 Fill in the blanks with >, <, or =.

a.	$2+5$	_____	$14\div 2$	$83+6$	_____	9×9
b.	$67-3$	_____	$62+5$	$34-4$	_____	3×10
c.	8×0	_____	7×0	$19-3$	_____	$12+2$
d.	6×2	_____	$8+5$	6×9	_____	9×4
e.	$21-3$	_____	9×2	$9-6$	_____	$24\div 8$

1.18 Write the money in digits. Solve the problem.

2 quarters	$		3 half dollars	$	
3 nickels			3 quarters		
8 pennies	+	_____	4 pennies	+	_____
	$			$	

1.19 Circle the numbers that are in the ...

a. tens' place	3,461	104,692	15,901
b. one thousands' place	2,862	76,305	168,294
c. ten thousands' place	63,297	41,346	503,247

1.20 Add 7 to each number.

8 _____ 9 _____ 14 _____ 36 _____ 58 _____

1.21 Subtract 6 from each number.

9 _____ 15 _____ 48 _____ 62 _____ 81 _____

1.22 Multiply each number by 8.

2 _____ 7 _____ 5 _____ 0 _____ 9 _____

1.23 Write the number words.

a. 5,346 _____

b. 84,040 _____

c. 307,632 _____

1.24 Arrange in number order from smallest to largest.

78,354 75,854 705,845 780,475 750,450 8,758

_____ _____ _____ _____ _____ _____

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

Each numbered problem (1.01 to 1.08) = 1 point

1.01 Write the family of facts for 4, 6, and 24.

_____ _____

_____ _____

1.02 Write the prime numbers between 0 and 10.

_____

1.03 Write the composite numbers between 11 and 21.

_____

1.04 What are the factors of 16? _____

1.05 What are the factors of 21? _____

1.06 List the first five multiples of 4. _____

1.07 List the first five multiples of 9. _____

1.08 Multiples are from the _____ (addition, subtraction, multiplication) family of facts.

1.09 Write the missing factors or multiples. Tell if the missing number is a factor or multiple (each answer, 1 point).

a. $6 \times$ _____ $= 24$ _____

b. _____ $\times 5 = 30$ _____

c. $8 \times 9 =$ _____ _____

d. $4 \times 7 =$ _____ _____

1.010 Solve these problems (each answer, 1 point).

a.

$6\overline{)56}$ $3\overline{)19}$ $7\overline{)43}$

b.

$5\overline{)47}$ $8\overline{)65}$ $3\overline{)22}$

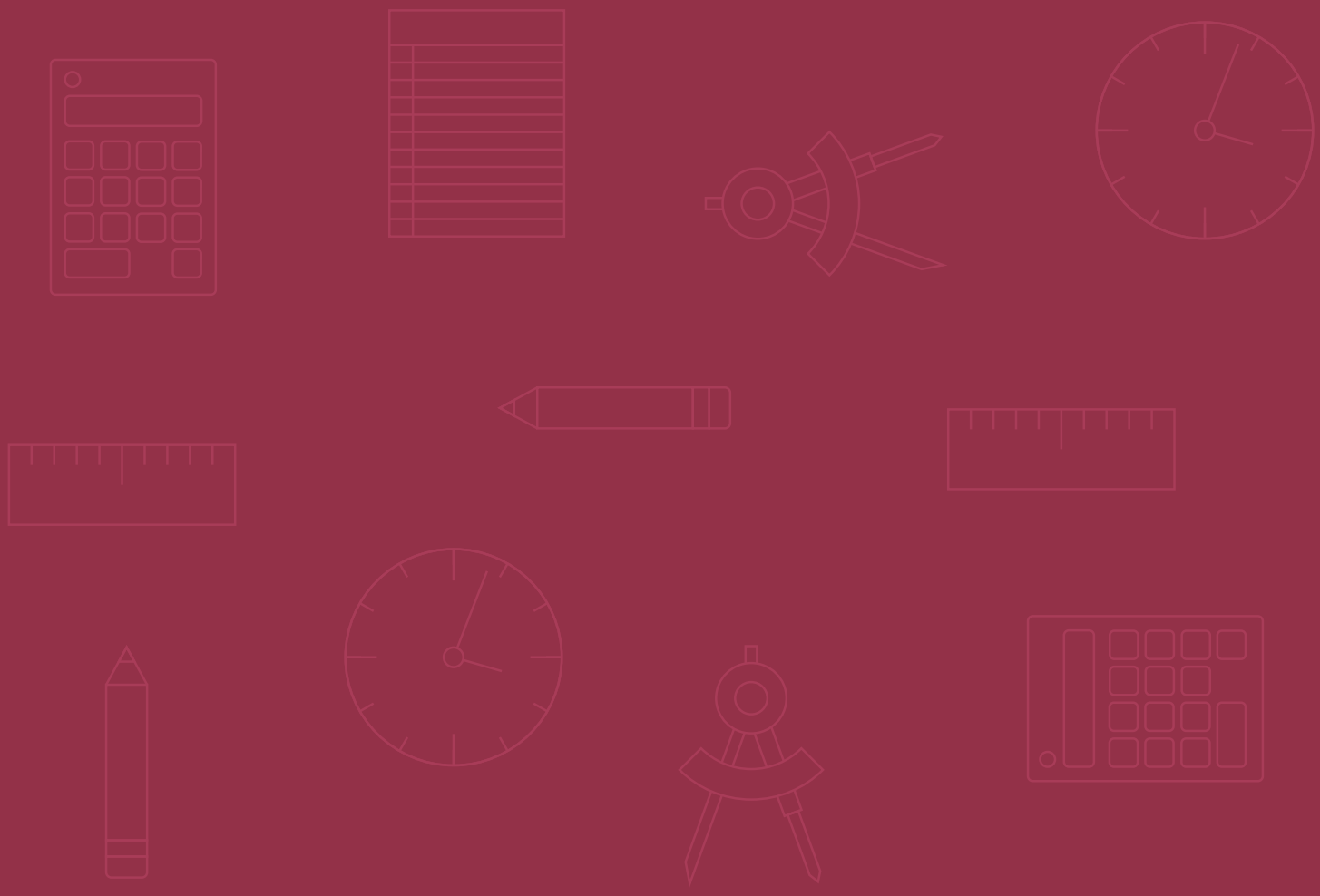
c.

$9\overline{)28}$ $2\overline{)15}$ $4\overline{)31}$

Teacher check: Initials _____

Score _____ Date _____

20/25



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