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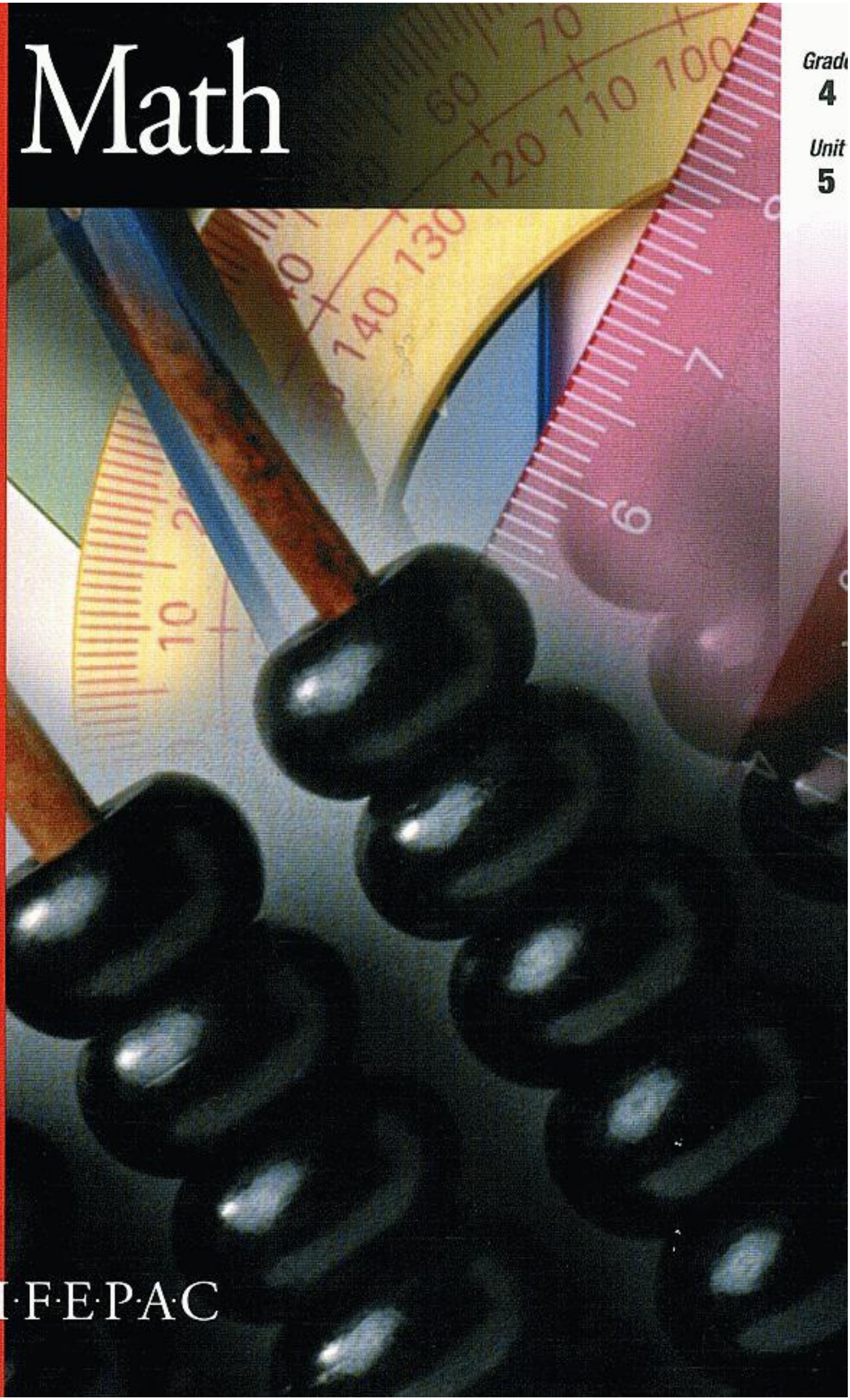
Math

Grade
4

Unit
5



L·I·F·E·P·A·C

MATHEMATICS 405

CONTENTS

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I. PART ONE

Learn Box

I can learn about division.
I can review addition, subtraction, and multiplication.

You will need objects for counting.

Division means to separate into equal parts.
Addition, subtraction, and multiplication have facts that you have learned.
Division also has facts to learn.

1.1 Use 12 objects to make 3 equal groups.

a. How many objects are there in each group? _____

b. We can say that 12 divided by 3 is equal to _____

Use 12 objects to make 4 equal groups.

c. How many objects are there in each group? _____

d. We can say that 12 divided by 4 is equal to _____

Division problems have names.

$12 \div 3 = 4$	12 is the dividend. 3 is the divisor. ÷ is the division sign. 4 is the quotient.	$12 \div 4 = 3$	12 is the dividend. 4 is the divisor. ÷ is the division sign. 3 is the quotient.

1.2 Use 15 objects to make 5 equal groups.

a. How many objects are there in each group? _____

b. We can say that $15 \div 5 =$ _____

Use 15 objects to make 3 equal groups.

c. How many objects are there in each group? _____

d. We can say that $15 \div 3 =$ _____

Addition and subtraction make a **family of facts**.
Multiplication and division make a **family of facts**.

You have learned two families of facts already.

3, 4, 12	3 x 4 = 12	4 x 3 = 12	12 ÷ 3 = 4	12 ÷ 4 = 3
3, 5, 15	3 x 5 = 15	5 x 3 = 15	15 ÷ 3 = 5	15 ÷ 5 = 3

If you know your multiplication facts, you also know your division facts.

1.3 Write the missing numbers to complete the family of facts.

a.	2, 4, 8	2 x 4 = _____	4 x 2 = _____	8 ÷ 4 = _____	8 ÷ 2 = _____
b.	3, 7, 21	3 x 7 = _____	7 x 3 = _____	21 ÷ 3 = _____	21 ÷ 7 = _____
c.	5, 8, 40	5 x 8 = _____	8 x 5 = _____	40 ÷ 5 = _____	40 ÷ 8 = _____
d.	6, 9, 54	6 x 9 = _____	9 x 6 = _____	54 ÷ 6 = _____	54 ÷ 9 = _____
e.	7, 8, 56	7 x 8 = _____	8 x 7 = _____	56 ÷ 7 = _____	56 ÷ 8 = _____
f.	4, 5, 20	4 x 5 = _____	5 x 4 = _____	20 ÷ 4 = _____	20 ÷ 5 = _____

1.4 Write the number in digits. Circle it in the puzzle.

a. seventy-eight thousand, three hundred eighteen _____

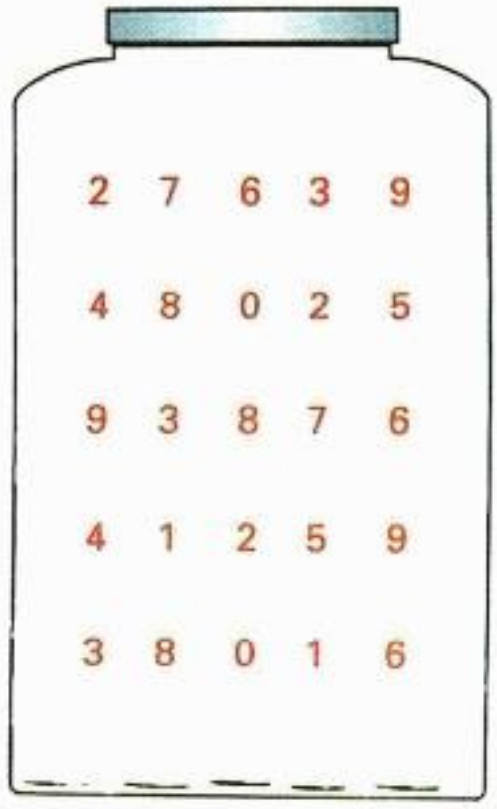
b. thirty-one thousand, eight hundred twenty-nine _____

c. seven thousand, seventy-nine _____

d. four thousand, three hundred twenty-one _____

e. seven hundred fifty-one _____

f. eight thousand, twenty-five _____



Remember to follow the rules for multiplication.

1. Multiply from right to left.
2. If the answer has two digits, write one digit and carry the other.

```
  2 2
  3 6 7
    x 4
1, 4 6 8
```

Multiply. 4 x 7 ones = 28 ones. Write the 8 ones in the ones' place and carry 2 tens.
Multiply. 4 x 6 tens = 24 tens.
Add the 2 tens = 26 tens.
Write the 6 tens in the tens' place and carry 2 hundreds.
Multiply. 4 x 3 hundreds = 12 hundreds.
Add the 2 hundreds = 14 hundreds.

1.5 Find the product. Carry when necessary.

a.	342 x 2	436 x 3	218 x 4	723 x 2
b.	525 x 3	483 x 6	242 x 5	528 x 4
c.	235 x 8	736 x 4	624 x 9	416 x 5
d.	334 x 9	117 x 7	236 x 3	582 x 6

To check problems in ...

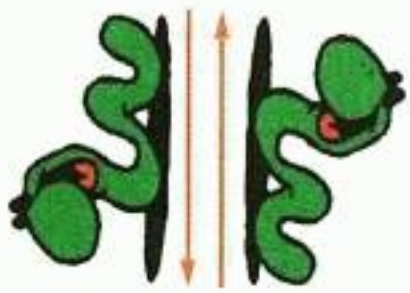
addition ...

subtraction ...

	982		
Add down.	236	Subtract.	835
Add up.	+ 746	Add the difference	− 476
	982	to the subtrahend.	+ 359
		The answer is the minuend.	835

1.6 Complete the problems. Check your answers.

a.	632 + 324	847 + 332	526 + 537
b.	1,763 + 2,275	6,892 + 2,163	9,420 + 8,632
c.	963 − 241	850 − 325	695 − 249
d.	4,968 − 2,382	5,398 − 2,629	7,685 − 4,896



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

a.	18	_____	12	24	_____	8 x 4
b.	15	_____	20	7 – 5	_____	2 x 0
c.	6 + 8	_____	7 + 7	3 x 4	_____	20 – 9
d.	7 x 5	_____	8 x 4	3 + 6	_____	17 – 8
e.	6 ÷ 3	_____	2 x 1	37 + 8	_____	42 – 6

1.8 Write the money in digits. Solve the problem.

3 quarters	$	4 half dollars	$
2 dimes		1 quarter	
3 pennies	+_____	2 nickels	+_____
	$		$
2 quarters	$	7 dimes	$
4 dimes		3 nickels	
5 nickels	+_____	8 pennies	+_____
	$		$

1.9 Circle the numbers that are in the

a.	tens' place	2 5 6	5, 3 4 9	7, 5 5 4
b.	one thousands' place	9 9 0, 6 7 5	6 8, 2 5 5	4, 6 2 1
c.	ten thousands' place	7 6, 3 0 5	8 0 3, 2 6 1	2 1, 3 0 6

1.10 Write the next three number words in each sequence.

a. thirty-five, thirty-six, thirty-seven, ...

_____, _____, _____, ...

b. thirty-fifth, thirty-sixth, thirty-seventh, ...

_____, _____, _____, ...

1.11 Add 8 to each number.

3 _____ 9 _____ 7 _____ 12 _____ 26 _____

1.12 Subtract 7 from each number.

16 _____ 14 _____ 17 _____ 25 _____ 9 _____

1.13 Multiply each number by 6.

4 _____ 0 _____ 8 _____ 10 _____ 7 _____

1.14 Write the time on the clocks.

_____ _____ _____ _____

1.15 Kenneth finished his volleyball game at 4:30.
Was this AM or PM?

_____

1.16 Write the number words.

a. 7,853 _____

b. 43,085 _____

c. 206,830 _____

1.17 Arrange in number order from smallest to largest.

305,670 350,760 670,760 607,760 376,760 377,670

_____ _____ _____ _____ _____ _____

1.18 Write the largest number possible using the digits 3, 7, 8, 0, 5, 6 . _____

SELF TEST 1

1.01 $42 \div 7 = 6$ In this problem, 42 is the _____,
(each answer, 1 point)

7 is the _____, 6 is the _____.

1.02 Write the multiplication and division family of facts for ... (each answer, 1 point)

7, 5, 35 _____ _____ _____ _____

1.03 Write the numbers in digits. (each answer, 1 point)

a. fifty-four thousand, seven hundred eight _____

b. one hundred twenty thousand, forty-nine _____

1.04 Find the product. (each answer, 1 point)

322	526	483	283
x 3	x 4	x 6	x 9
_____	_____	_____	_____

1.05 Write the money in digits. Solve. (each problem, 1 point)

2 quarters	$	4 dimes	$
3 dimes		5 nickels	
1 nickel	+_____	8 pennies	+_____
	$		$

1.06 Write the next three number words in each sequence. (2 points)

a. forty-two, forty-three, forty-four, ...

_____, _____, _____, ...

b. forty-second, forty-third, forty-fourth, . . .

_____, _____, _____, ...

SELF TEST 1 (cont.)

1.07 Write the time on the clock. (each answer, 1 point)

_____

_____

_____

_____

1.08 Jim finished his math assignment at 2:00.
Was this AM or PM? (1 point)

_____

1.09 Arrange in order from smallest to largest. (3 points)

293,467	923,467	423,967	342,776	324,776	293,647
_____	_____	_____	_____	_____	_____

20/25

My score _____
Teacher check _____

II. PART TWO

Learn Box

I can learn about measurements.
I can learn division facts.

Linear measurements measure units of length.
In the United States, linear measurements are made in units of inches, feet, yards, and miles.

12 inches	=	1 foot
3 feet	=	1 yard
5,280 feet	=	1 mile

You will need

a ruler measuring 12 inches and a yardstick available to complete these exercises. Begin by marking off 12 inches or one foot on the yardstick. Also, discuss with your teacher how far you would have to go from where you are now to walk a mile.

2.1 Circle the longer unit of measurement.

a.	1 inch	1 mile	b.	2 feet	25 inches
c.	1 yard	1 foot	d.	8 feet	2 yards
e.	14 inches	1 foot	f.	1 mile	5,380 feet
g.	5 feet	1 yard	h.	38 inches	1 yard

2.2 What unit of measurement would you use for...

a. a book? _____

b. the land around your house? _____

c. the distance from one city to another? _____

d. a fork? _____

e. a length of cloth? _____

f. your height? _____

g. a board to build a tree house? _____

Capacity is a measurement of the amount an object or container can hold.

Measurements of liquid capacity are made in pints, quarts, and gallons. Measurements of dry capacity are made in ounces and pounds or pints, quarts, pecks, and bushels.

Liquid

1 pint = 16 ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

Dry

16 ounces = 1 pound

or

2 pints = 1 quart
8 quarts = 1 peck
4 pecks = 1 bushel

You will need

an empty cup, quart and gallon containers for liquids available for this exercise. Bleach bottles, milk containers, cans from canned foods are good examples. Also, an empty box that contained a dry measurement, such as laundry detergent should be available. Examples for pecks and bushels may be more difficult to obtain.

2.3 Circle the greater unit of measurement. Use the containers for illustration.

a.	1 pound	45 ounces	b.	2 gallons	5 quarts
c.	2 pecks	8 quarts	d.	17 cups	1 gallon
e.	3 cups	1 pint	f.	5 quarts	12 pints
g.	35 ounces	2 pounds	h.	1 gallon	5 pints

2.4 What unit of measurement would you use for...

a. flour to add to a cake recipe? _____

b. peaches your family is buying for canning? _____

c. the amount of milk your family will drink in a week? _____

d. the amount of water a swimming pool will hold? _____

e. fertilizer to put on the lawn? _____

f. a candy bar? _____

g. a serving of milk? _____

Weight is the measurement of how heavy something is.
Weight is measured in units of ounces, pounds, and tons.

16 ounces	=	1 pound
2,000 pounds	=	1 ton

2.5 Circle the greater measurement.

a. 24 ounces 2 pounds
b. 5,000 pounds 2 tons

2.6 What unit of measurement would you use for...

a. your weight? _____

b. a car? _____

c. a bag of apples _____

d. an airplane _____

We can multiply with numbers to the thousands' place.

3 4 1	Multiply as learned to the hundreds and continue.
2, 5 8 3	Multiply. 6 x 5 hundreds = 30 hundreds.
x 6	Add the 4 hundreds = 34 hundreds.
1 5, 4 9 8	Write the 4 hundreds in the hundreds' place and carry 3 thousands.
	Multiply 6 x 2 thousands = 12 thousands.
	Add 3 thousands = 15 thousands.

2.7 Find the product. Carry when necessary.

2,721
x 4

4,281
x 5

7,250
x 6

3,672
x 8

2.8 Write the correct answer.

a. $4 \div 2 =$ _____ because $2 \times$ _____ $= 4$

b. $6 \div 3 =$ _____ because $3 \times$ _____ $= 6$

c. $8 \div 4 =$ _____ because $4 \times$ _____ $= 8$

d. $10 \div 2 =$ _____ because $2 \times$ _____ $= 10$

e. $9 \div 3 =$ _____ because $3 \times$ _____ $= 9$

f. $12 \div 4 =$ _____ because $4 \times$ _____ $= 12$

g. $12 \div 6 =$ _____ because $6 \times$ _____ $= 12$

h. $15 \div 3 =$ _____ because $3 \times$ _____ $= 15$

i. $18 \div 9 =$ _____ because $9 \times$ _____ $= 18$

j. $16 \div 4 =$ _____ because $4 \times$ _____ $= 16$

k. $20 \div 5 =$ _____ because $5 \times$ _____ $= 20$

l. $21 \div 3 =$ _____ because $3 \times$ _____ $= 21$

m. $24 \div 3 =$ _____ because $3 \times$ _____ $= 24$

n. $24 \div 6 =$ _____ because $6 \times$ _____ $= 24$

o. $25 \div 5 =$ _____ because $5 \times$ _____ $= 25$

p. $27 \div 3 =$ _____ because $3 \times$ _____ $= 27$

q. $28 \div 4 =$ _____ because $4 \times$ _____ $= 28$

r. $36 \div 9 =$ _____ because $9 \times$ _____ $= 36$

s. $42 \div 7 =$ _____ because $7 \times$ _____ $= 42$

t. $48 \div 6 =$ _____ because $6 \times$ _____ $= 48$

u. $54 \div 9 =$ _____ because $9 \times$ _____ $= 54$

v. $56 \div 8 =$ _____ because $8 \times$ _____ $= 56$

w. $63 \div 7 =$ _____ because $7 \times$ _____ $= 63$

x. $64 \div 8 =$ _____ because $8 \times$ _____ $= 64$

y. $72 \div 9 =$ _____ because $9 \times$ _____ $= 72$

2.9 Write 'how many' and then show the value.

	thousands			units		
	hundreds	tens	ones	hundreds	tens	ones
a. 302,705 =	_____ +	_____ +	_____ +	_____ +	_____ +	_____
=	_____ +	_____ +	_____ +	_____ +	_____ +	_____
b. 2,648 =	_____ +	_____ +	_____ +	_____ +	_____ +	_____
=	_____ +	_____ +	_____ +	_____ +	_____ +	_____
c. 32,850 =	_____ +	_____ +	_____ +	_____ +	_____ +	_____
=	_____ +	_____ +	_____ +	_____ +	_____ +	_____

2.10 Place the commas where they belong.

2 3 5 6 9 4 5 7 8 2 3 9 0 4 6 7 0 4 3 1 8

2.11 Write the number sentences in words.

a. $\frac{5}{6} + \frac{3}{6} = \frac{8}{6}$ _____

b. $\frac{6}{7} - \frac{4}{7} = \frac{2}{7}$ _____

c. $\frac{2}{9} + \frac{6}{9} = \frac{8}{9}$ _____

d. $\frac{11}{12} - \frac{1}{12} = \frac{10}{12}$ _____

2.12 Draw an illustration showing that $\frac{3}{5} + \frac{4}{5} = \frac{7}{5}$.

SELF TEST 2

2.01 Write the equivalent. (each answer, 1 point)

a. 1 foot = _____ inches

b. 1 gallon = _____ quarts

c. 1 yard = _____ feet

d. 1 pint = _____ ounces

e. 1 mile = _____ feet

f. 1 pound = _____ ounces

g. 1 pint = _____ cups

h. 1 peck = _____ quarts

i. 1 quart = _____ pints

j. 1 bushel = _____ pecks

2.02 What unit of measurement would you use for . . . (each answer, 1 point)

a. the height of a table? _____

b. how far to the nearest store? _____

c. the length of your foot? _____

d. flour to be added to a cake recipe? _____

e. juice in a container from the store? _____

2.03 Find the product. (each answer, 1 point)

2,346	5,174	3,081	4,672
x 3	x 6	x 7	x 8

2.04 Write the answer to the facts. (each answer, 1 point)

18 ÷ 6 = _____ because 6 x _____ = 18

36 ÷ 9 = _____ because 9 x _____ = 36

2.05 Write 'how many' and then show the value. (2 points)

	thousands			units		
	hundreds	tens	ones	hundreds	tens	ones
536,294 =	_____	+ _____	+ _____	+ _____	+ _____	+ _____
=	_____	+ _____	+ _____	+ _____	+ _____	+ _____

2.06 Place the commas where they belong. (each answer, 1 point)

2 0 4 6 3 2 8 5 4 1 3

2.07 Write the number sentences in words. (each answer, 1 point)

a. $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$ _____

b. $\frac{7}{9} - \frac{5}{9} = \frac{2}{9}$ _____

2.08 Draw an illustration showing that $\frac{3}{4} + \frac{2}{4} = \frac{5}{4}$. (1 point)

My score _____
Teacher check _____

III. PART THREE

Learn Box

I can read a calendar.
I can learn about perimeter and area.
I can add and subtract fractions.

You will need
a current calendar.

July						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

3.1 Use a current calendar and calendar on this page to answer the questions.

a. How many months in a year? _____

b. How many weeks in a year? _____

c. How many days in one week? _____

d. How many days in this month? _____

e. How many Mondays in this month? _____

f. What day is the 18th? _____

g. Does this month have a special day? _____

h. Are there more Tuesdays or Fridays? _____

Use a reference book. Look for the meaning of *Leap Year.*

3.2 Match.

____ a.	answer in multiplication	1.	quotient
____ b.	line that divides a fraction	2.	multiply
____ c.	number sentence with an equal sign	3.	product
____ d.	answer in division	4.	denominator
____ e.	number below line in a fraction	5.	difference
____ f.	to change from small to large	6.	equation
____ g.	answer in subtraction	7.	fraction bar
____ h.	to change from large to small	8.	divide

3.3 Draw lines to equal . . .

a. $2\frac{1}{2}$ inches.

b. $3\frac{1}{4}$ inches.

c. $4\frac{3}{4}$ inches.

3.4 Multiply.

a.

36	57	402	315	740
x 2	x 6	x 8	x 5	x 3

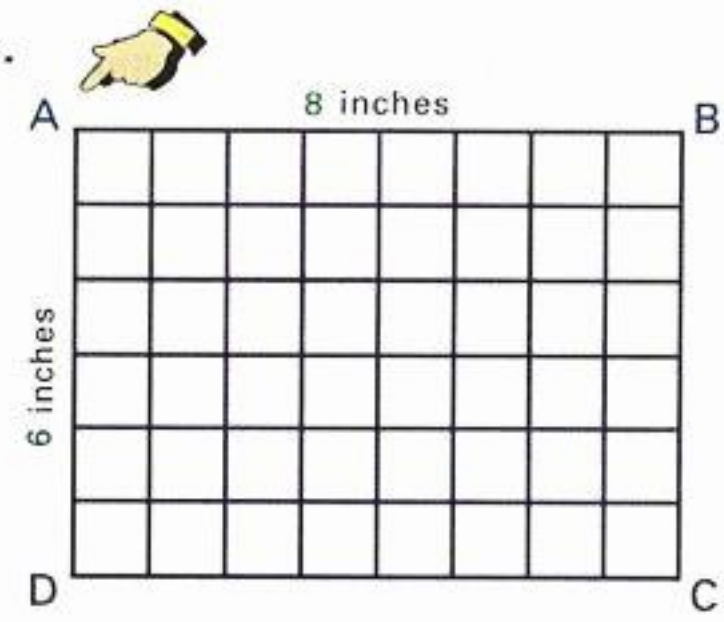
b.

4,032	5,164	3,827	2,635
x 3	x 5	x 4	x 7

You will need
unlined paper and a ruler.

Perimeter is the distance around the outside of a plane shape.
It is expressed in **linear units**.

Area is the measurement of a plane surface.
It is expressed in **square units.**



Put your finger at A on the rectangle.
Move your finger from A to B, B to C,
C to D, and D to A. You have moved your
finger around the perimeter of the rectangle.

Now cover the rectangle with your hand.
You have covered the surface or area of
the rectangle.

We measure perimeter in linear units. This is a linear inch. → ⊢——⊣
Use your ruler to measure the linear inch.

We measure surface in square units. This is a square inch. →
Shade the square inch.

In the rectangular polygon in the example, each small square
represents a square inch.

The dimensions of rectangles and squares are length and width.

3.5 Starting at A, count the number of *linear* inches to go completely around the outside of the rectangle. Be sure you are counting *linear* inches. (Always label your answer correctly.) _____

What is the perimeter of this rectangle? _____

3.6 Starting at A, count the number of *square* inches in the rectangle. (Always label your answer correctly.) _____

What is the area of this rectangle? _____

Turn back to page 9 and review linear units.
Each linear unit has a corresponding square unit.

144 square inches = 1 square foot
9 square feet = 1 square yard

3.7 Use your paper and ruler. Have your teacher help you draw an illustration that represents a square foot and a square yard. Do *linear* units and *square* units look the same? _____

When we measure perimeter and area, we do not want to count each unit. There are special rules that make measuring perimeter and area easy.

The rule for perimeter is . . .

Perimeter = 2 x length + 2 x width or P = 2L + 2W

Look at the figure on page 18.
Substitute the measurement for length and width.
Multiply.
Add.

P = 2L + 2W
P = (2 x 8) + (2 x 6)
P = 16 + 12
P = 28 linear inches

3.8 Is this answer the same as your answer to 3.5? _____

The rule for area is . . .

Area = length x width or A = L x W

Look at the figure on page 18.
Substitute the measurement for length and width.
Multiply.

A = L x W
A = 8 x 6
A = 48 square inches

3.9 Is this answer the same as your answer to 3.6? _____

3.10 Find the perimeter and area of a rectangle with dimensions of 7 feet by 5 feet. Use the rules. *Answers must be labeled correctly.*

perimeter area

a. _____ b. _____

3.11 Find the perimeter and area of a rectangle with dimensions of 9 feet by 4 feet. Use the rules. *Answers must be labeled correctly.*

perimeter area

a. _____ b. _____

3.12 Find the perimeter and area of a rectangle with dimensions of 12 feet by 3 feet. Use the rules. *Answers must be labeled correctly.*

perimeter area

a. _____ b. _____

3.13 Arrange in number order from smallest to largest.

464,346	64,363	6,363	46,463	604,640	4,663
_____	_____	_____	_____	_____	_____

3.14 Round each number. Add or subtract. Then find the real answer.

a.

785	_____	4,872	_____	35,673	_____
+ 396	_____	+ 6,249	_____	+ 41,839	_____

b.

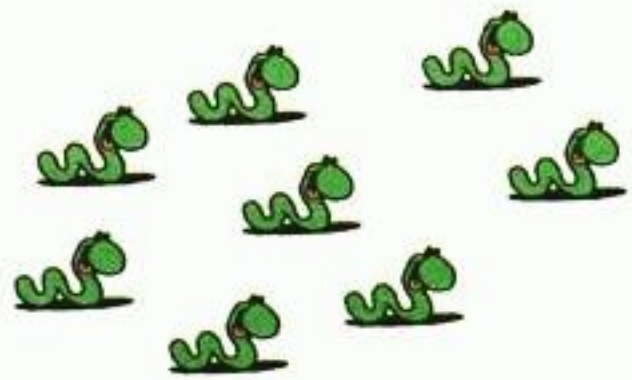
642	_____	8,671	_____	76,428	_____
− 379	_____	− 5,482	_____	− 40,937	_____

3.15 Label the parts of the fraction.

b._____ $\frac{7}{8}$ a. _____ c. _____

3.16 When we add or subtract a fraction, we add or subtract the ... _____.

3.17 Circle the part of the object or set that represents $\frac{3}{8}$.



3.18 Add.

$\frac{3}{8}$	$\frac{2}{3}$	$\frac{5}{7}$	$\frac{4}{16}$	$\frac{3}{5}$	$\frac{9}{15}$
$+\ \frac{5}{8}$	$+\ \frac{2}{3}$	$+\ \frac{1}{7}$	$+\ \frac{5}{16}$	$+\ \frac{4}{5}$	$+\ \frac{4}{15}$

3.19 Subtract.

$\frac{8}{12}$	$\frac{9}{10}$	$\frac{3}{5}$	$\frac{11}{16}$	$\frac{5}{6}$	$\frac{3}{4}$
$-\ \frac{3}{12}$	$-\ \frac{4}{10}$	$-\ \frac{2}{5}$	$-\ \frac{5}{16}$	$-\ \frac{2}{6}$	$-\ \frac{2}{4}$

SELF TEST 3

(each answer, 1 point)

3.01 Answer the questions.

a. How many months in a year? _____

b. How many weeks in a year? _____

c. How many days in one week? _____

3.02 Draw lines to equal ...

a. $2\frac{3}{4}$ inches.

b. $4\frac{1}{4}$ inches.

3.03 Multiply.

83	254	3,063	5,694
x 7	x 6	x 8	x 5
_____	_____	_____	_____

3.04 Match.

____	a. distance around outside of plane shape	1.	quotient
____	b. line that divides a fraction	2.	product
____	c. number sentence with an equal sign	3.	perimeter
____	d. answer in division	4.	numerator
____	e. number above line in a fraction	5.	equation
____	f. measurement of surface of plane shape	6.	fraction bar
____	g. answer in multiplication	7.	area

3.05 Use your ruler. Draw ...

a linear inch

a square inch

3.06 Write the rule to find the perimeter. _____

3.07 Write the rule to find the area. _____

3.08 Find the perimeter and area of a rectangle with dimensions of 8 feet by 5 feet. Use the rules. *Answers must be labeled correctly.*

perimeter

area

a. _____

b. _____

3.09 Solve.

$$\begin{array}{r} 8 \\ 14 \\ -\ 3 \\ 14 \\ \hline \end{array} \qquad \begin{array}{r} 3 \\ 5 \\ +\ 4 \\ 5 \\ \hline \end{array} \qquad \begin{array}{r} 9 \\ 12 \\ -\ 3 \\ 12 \\ \hline \end{array}$$

My score _____

Teacher check _____

IV. PART FOUR

Learn Box

I can solve missing number problems.
I can read Roman numerals.
I can learn a new way to divide.

An **equation** is a number sentence that contains an equal sign. The equal sign tells us that the numbers on both sides of the equation are equal to each other.

We can add, subtract, or multiply numbers on both sides of the equation. If we complete the operations with the same number, both sides will remain equal.

This pattern helps us solve missing number problems. Review these examples.

Example	a.	b.	c.
	$N + 6 = 10$ $N + 6 (- 6) = 10 (- 6)$ $N = 4$	$5 + 7 + 3 + N = 23$ $15 + N = 23$ $15 + N (- 15) = 23 (- 15)$ $N = 8$	$N - 45 = 93$ $N - 45 (+ 45) = 93 (+ 45)$ $N = 138$
Check:	$4 + 6 = 10$	$5 + 7 + 3 + 8 = 23$	$138 - 45 = 93$

4.1 In Example (a.), to find the answer we must...

_____ the number _____ from both sides of the equation.

4.2 In Example (b.), to find the answer we must first add _____, _____, and _____.

Then, _____ the number _____ from both sides of the equation.

4.3 In Example (c.), to find the answer, we must...

_____ the number _____ to both sides of the equation.

4.4 Follow the steps to solve these missing number problems. Check.

a. $N + 134 = 379$

b. $N - 409 = 732$

c. $32 + 46 + 79 + N = 185$ d. $N - 636 = 852$

Review Example (b.). Some problems may require more than one step to find an answer. In this example, 5, 7, and 3 were grouped and added together. Then, 15 was subtracted from both sides of the equation.

This method is called **grouping**.
Parentheses are used to group the numbers. $(5 + 7 + 3) + N = 23$
We always begin by solving the part of the problem that is in parentheses.

4.5 George had 25 rocks in his rock collection. He found 6 more while he was on vacation. When he returned home, he decided to share 8 of his collection with his friend Jim. How many rocks did he have left?

Using the method called grouping,
we would write ... $(25 + 6) - 8 = N$
Add the numbers in the parentheses first ... $31 - 8 = N$
Write the answer. _____ = N

4.6 Solve these problems using the method called grouping. Always begin by finding the answer to the part of the problem that is in parentheses.

a. $46 + (8 - 3) = N$ N = _____

b. $(2 + 4) \times (3 + 5) = N$ N = _____

c. $(6 + 3) \times (12 - 6) = N$ N = _____

d. $(16 - 12) \div 2 = N$ N = _____

4.7 Write this problem in grouping and solve.
Jane bought 6 apples at 18¢ and 5 oranges at 12¢. How much did she spend altogether?

Division problems may be written . . .

$12 \div 3 = 4$ 12 is the dividend.
3 is the divisor.
$\div$ is the division sign.
4 is the quotient.

$3\overline{)12}^{\,4}$ 12 is the dividend.
3 is the divisor.
$\overline{)}$ is the division sign.
4 is the quotient.

Remember that multiplication and division make a family of facts.
Use the multiplication facts you have learned to answer the division facts.

4.8 Find the quotient.

a.

$2\overline{)4}$ $2\overline{)6}$ $2\overline{)8}$ $4\overline{)8}$ $3\overline{)9}$ $2\overline{)10}$

b.

$5\overline{)10}$ $2\overline{)12}$ $3\overline{)12}$ $2\overline{)14}$ $7\overline{)14}$ $3\overline{)15}$

c.

$5\overline{)15}$ $2\overline{)16}$ $4\overline{)16}$ $8\overline{)16}$ $2\overline{)18}$ $8\overline{)64}$

d.

$6\overline{)18}$ $9\overline{)18}$ $2\overline{)20}$ $4\overline{)20}$ $5\overline{)20}$ $3\overline{)21}$

e.

$7\overline{)21}$ $3\overline{)24}$ $4\overline{)24}$ $6\overline{)24}$ $5\overline{)25}$ $3\overline{)27}$

f.

$9\overline{)27}$ $4\overline{)28}$ $7\overline{)28}$ $5\overline{)30}$ $6\overline{)30}$ $4\overline{)32}$

g.

$8\overline{)32}$ $5\overline{)35}$ $7\overline{)35}$ $4\overline{)36}$ $6\overline{)36}$ $9\overline{)36}$

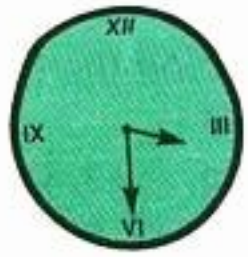
h.

$5\overline{)40}$ $8\overline{)40}$ $6\overline{)42}$ $5\overline{)45}$ $9\overline{)45}$ $6\overline{)48}$

i.

$8\overline{)48}$ $7\overline{)49}$ $6\overline{)54}$ $9\overline{)54}$ $7\overline{)56}$ $8\overline{)56}$

The digits that you have learned about in the LIFEPACs are called **Arabic** numerals. **Roman** numerals are also used. They may be on public buildings, clock faces, number chapters in books, or to tell the year something was made.



The Roman numerals correspond to Arabic numerals in this way.

I = 1 V = 5 X = 10 L = 50 C = 100 D = 500 M = 1000

Roman numerals are placed next to each other and then added.

VI (V + I = 5 + 1 = 6) XVII (X + V + I + I = 10 + 5 + 1 + 1 = 17)

Fours and nines are the only Roman numerals formed by subtraction. The Roman numeral is placed before the numeral it is to be subtracted from.

IV (V - I = 5 - 1 = 4) XIX (X + X - I = 10 + 10 - 1 = 19)
XL (L - X = 50 - 10 = 40) CM (M - C = 1000 - 100 = 900)

4.9 Write these Roman numerals as Arabic numerals.
Use the method shown above.

a. VII _____ = _____ LXVI _____ = _____

b. IX _____ = _____ DX _____ = _____

c. XXIX _____ = _____ MDXX _____ = _____

Arabic numerals can be changed to Roman numerals.

15 (10 + 5 = X + V = XV) 24 (10 + 10 + 5 - 1 = X + X + V - I = XXIV)

4.10 Write these Arabic numerals as Roman numerals.
Use the method shown above.

a. 23 _____ = _____ 84 _____ = _____

b. 48 _____ = _____ 117 _____ = _____

4.11 Find the difference.

a. $\begin{array}{r} 9,483 \\ -\ 4,191 \\ \hline \end{array}$ $\begin{array}{r} 4,968 \\ -\ 2,382 \\ \hline \end{array}$ $\begin{array}{r} 5,495 \\ -\ 3,723 \\ \hline \end{array}$

b. $\begin{array}{r} 8,355 \\ -\ 3,724 \\ \hline \end{array}$ $\begin{array}{r} 7,488 \\ -\ 4,863 \\ \hline \end{array}$ $\begin{array}{r} 9,593 \\ -\ 6,642 \\ \hline \end{array}$

c. $\begin{array}{r} 4,398 \\ -\ 2,629 \\ \hline \end{array}$ $\begin{array}{r} 6,350 \\ -\ 2,173 \\ \hline \end{array}$ $\begin{array}{r} 8,675 \\ -\ 4,898 \\ \hline \end{array}$

4.12 Find the product.

a. $\begin{array}{r} 64 \\ \times\ 4 \\ \hline \end{array}$ $\begin{array}{r} 28 \\ \times\ 3 \\ \hline \end{array}$ $\begin{array}{r} 36 \\ \times\ 3 \\ \hline \end{array}$ $\begin{array}{r} 45 \\ \times\ 5 \\ \hline \end{array}$

b. $\begin{array}{r} 363 \\ \times\ 7 \\ \hline \end{array}$ $\begin{array}{r} 772 \\ \times\ 5 \\ \hline \end{array}$ $\begin{array}{r} 644 \\ \times\ 8 \\ \hline \end{array}$ $\begin{array}{r} 532 \\ \times\ 9 \\ \hline \end{array}$

c. $\begin{array}{r} 4,168 \\ \times\ 4 \\ \hline \end{array}$ $\begin{array}{r} 3,972 \\ \times\ 5 \\ \hline \end{array}$ $\begin{array}{r} 6,423 \\ \times\ 8 \\ \hline \end{array}$

4.13 Patterns help us solve problems in mathematics.
We find a pattern. We find the rule that applies. We solve the problem.
Write or draw what comes next. Explain the pattern.

a. $7 \times 4 = 28$, $4 \times 7 = 28$, $28 \div 4 = 7$, ... _____

_____

b. $3 < 6$, $4 < 8$, $5 < 10$, ... _____

_____

c. $\frac{1}{4}$  , $\frac{2}{4}$  , $\frac{3}{4}$  , ... _____

_____

d. 200,002 , 200,001 , 200,000 , ... _____

_____

e. 4 , 12 , 6 , 18 , 9 , ... _____

_____

4.14 Patterns also help us predict the probability of an event.
Tell the probability (good, maybe, poor) of these things happening.
Explain the pattern that you used for your answer.

a. The sun will rise tomorrow. Probability _____

Why? _____

b. You will take a trip in a plane. Probability _____

Why? _____

c. You will eat lunch at 9:00 PM. Probability _____

Why? _____

SELF TEST 4

4.01 We can add, subtract, or multiply numbers on both sides of the equation. If we complete the operations with the same number, both sides will remain equal. Follow the steps to solve these missing number problems. Check. (each problem, 2 points).

a. $N + 632 = 921$

b. $N - 306 = 562$

4.02 Some problems may require more than one step to find an answer. This method is called grouping. Parentheses are used to group the numbers. We always begin by solving the part of the problem that is in parentheses. (each answer, 1 point)

a. $87 + (33 - 21) = N$ N = _____

b. $(8 + 1) \times (3 + 2) = N$ N = _____

4.03 Find the quotient (each fact = $\frac{1}{2}$ point). (each answer, 1 point)

$7\overline{)21}$ $6\overline{)24}$ $3\overline{)27}$ $8\overline{)72}$ $5\overline{)35}$ $8\overline{)64}$

4.04 Write the equivalent Arabic numerals. (each answer, 1 point)

XXII _____ LXIV _____

4.05 Write the equivalent Roman numerals. (each answer, 1 point)

16 _____ 48 _____

4.06 Find the difference. (each answer, 1 point)

$$\begin{array}{r} 7{,}352 \\ -\ 2{,}761 \\ \hline \end{array} \qquad \begin{array}{r} 9{,}403 \\ -\ 3{,}651 \\ \hline \end{array} \qquad \begin{array}{r} 800 \\ -\ 276 \\ \hline \end{array} \qquad \begin{array}{r} 802 \\ -\ 539 \\ \hline \end{array}$$

4.07 Find the product. (each answer, 1 point)

532	308	635	1,905
x 8	x 9	x 6	x 5

4.08 Patterns help us solve problems in mathematics.
We find a pattern. We find the rule that applies. We solve the problem.
Write or draw what comes next. Explain the pattern. (each answer, 1 point)

a. $3 \times 6 = 18$, $6 \times 3 = 18$, $18 \div 6 = 3$, ... _____

_____

b. $2 < 6$, $3 < 9$, $4 < 12$, ... _____

_____

20/25

My score _____
Teacher check _____

V. PART FIVE

Learn Box

I can read and write
about the things I have learned.
I can learn about picture graphs.

5.1 Perimeter is the distance around the outside of a plane shape.

What rule do we use to find perimeter? _____

5.2 Area is the measurement of a plane surface.

What rule do we use to find area? _____

5.3 Draw a rectangle in the space below. Show dimensions of 5 feet by 3 feet.

a. What is the perimeter of the rectangle? _____

b. What is the area of the rectangle? _____

c. Review the rectangle shown on page 18. Draw line segments on the rectangle you have just made illustrating the square feet. Count the number of squares you have made.
Is it the same number as your answer to 5.3(b.) ? _____

5.4 Write an ordinal number. What grade are you in? _____

5.5 Write in words. 846,092 _____

_____

5.6 7 x N = 42 N = _____ 6 x N = 30 N = _____ 9 x N = 63 N = _____

5.7 Round to the nearest thousands. 7,543 = _____

5.8 235 is the multiplicand. 4 is the multiplier. What is the product? _____

5.9 Draw an example of a(n) a. line b. line segment c. ray, and d. angle. Use the symbols learned in LIFEPAC 404 to label the drawings.

a.

b.

c.

d.

5.10 The following problems are most easily solved by using grouping. *Include parentheses to write the problem.* Find the solution.

a. The temperature at noon was 78°. By 2:00 PM, it rose 6°, but at 5:00 PM, it had fallen by 4°. What was the temperature at 5:00 PM?

N = _____

b. Laura worked 4 hours babysitting at $2.25 per hour. When she was done, she gave her sister 75¢ that she had borrowed from her. How much money did she have left?

N = _____

c. Mr. Meyers paid two students $5.60 each for working after school. If he started with $15.00, how much did he have left?

N = _____

d. Jeff was building a doll house for his sister. He needed 6 pieces of wood one foot long and 8 pieces of wood fourteen inches long. How much wood did he need altogether? (Hint: Your answer should be in inches.)

N = _____

5.11 Jim's new aquarium was a gallon size, but Jim only had a quart measurement. How many quarts does he need to fill his aquarium?

_____

5.12 How many digits in the number 425,786?

_____

5.13 John and his father were on a fishing trip. They drove 45 miles to a town near the lake to buy bait. They needed to drive another 7 miles to reach the fishing spot. How many miles did they drive altogether?

_____

5.14 Mark ran to the end of the block and back 3 times. It is 34 yards to the end of the block.

a. Using line segments and end points, make a drawing of the path that Mark followed. Write the measurements on the line segments.

b. How far did Mark run altogether?

_____

c. Express your answer to (b.) in feet.

_____

5.15 Is a piece of paper a plane shape or solid shape?

_____

5.16 Is a nickel in the shape of an oval, square, or circle?

_____

5.17 Fill in the missing numerators. $\frac{1}{7}$, $\frac{2}{7}$, $\frac{\quad}{7}$, $\frac{4}{7}$, $\frac{\quad}{7}$, $\frac{6}{7}$, $\frac{\quad}{7}$

5.18 Write the missing number. 56, 49, 42, 35, _____, 21, 14, 7

5.19 Round 87 to the nearest tens.

_____

5.20 Whenever a number is multiplied by zero, the answer is always _____.

5.21 Circle the correct symbol. 2,345 (>, <) 2,347 86,442 (>, <) 86,042

5.22 Write a number with 5 in the ones' place, 6 in the tens' place and 9 in the hundreds' place.

_____

5.23 Write 44 in Roman numerals. _____

5.24 Write XXXV in Arabic numerals. _____

5.25 If you measure the surface of a floor, would your measurement be in linear feet or square feet? _____

5.26 Using cross multiplication, tell whether these fractions are equal. $\frac{5}{6}$ and $\frac{10}{12}$ _____

5.27 Mother cut a pie into six pieces. She gave two pieces to Joe and one piece to Mary.

a. What would be the denominator of a fraction describing the pieces of pie? _____

b. Write as a fraction the amount that mother gave to Joe. _____

c. Write as a fraction the amount that mother gave to Mary. _____

d. Write as a fraction the total amount that mother gave to both Joe and Mary. _____

5.28 Write the number 385,205 in expanded form.

_____

5.29 Given the numbers 4,849 and 3,642, what would you *estimate* the difference to be? _____

5.30 If the addends are 34 and 26, would the answer be called the product, difference, or sum? _____

5.31 Write the whole number 1 as a fraction with a denominator of 6. _____

5.32 What is the product of 9 and 6? _____

5.33 467 + 3,280 + 59 + 364 = _____

5.34 16 ÷ 4 = _____ 24 ÷ 3 = _____ 14 ÷ 2 = _____

20 ÷ 5 = _____ 42 ÷ 7 = _____ 36 ÷ 9 = _____

5.35 Write this fraction in words. $\frac{5}{8}$ _____

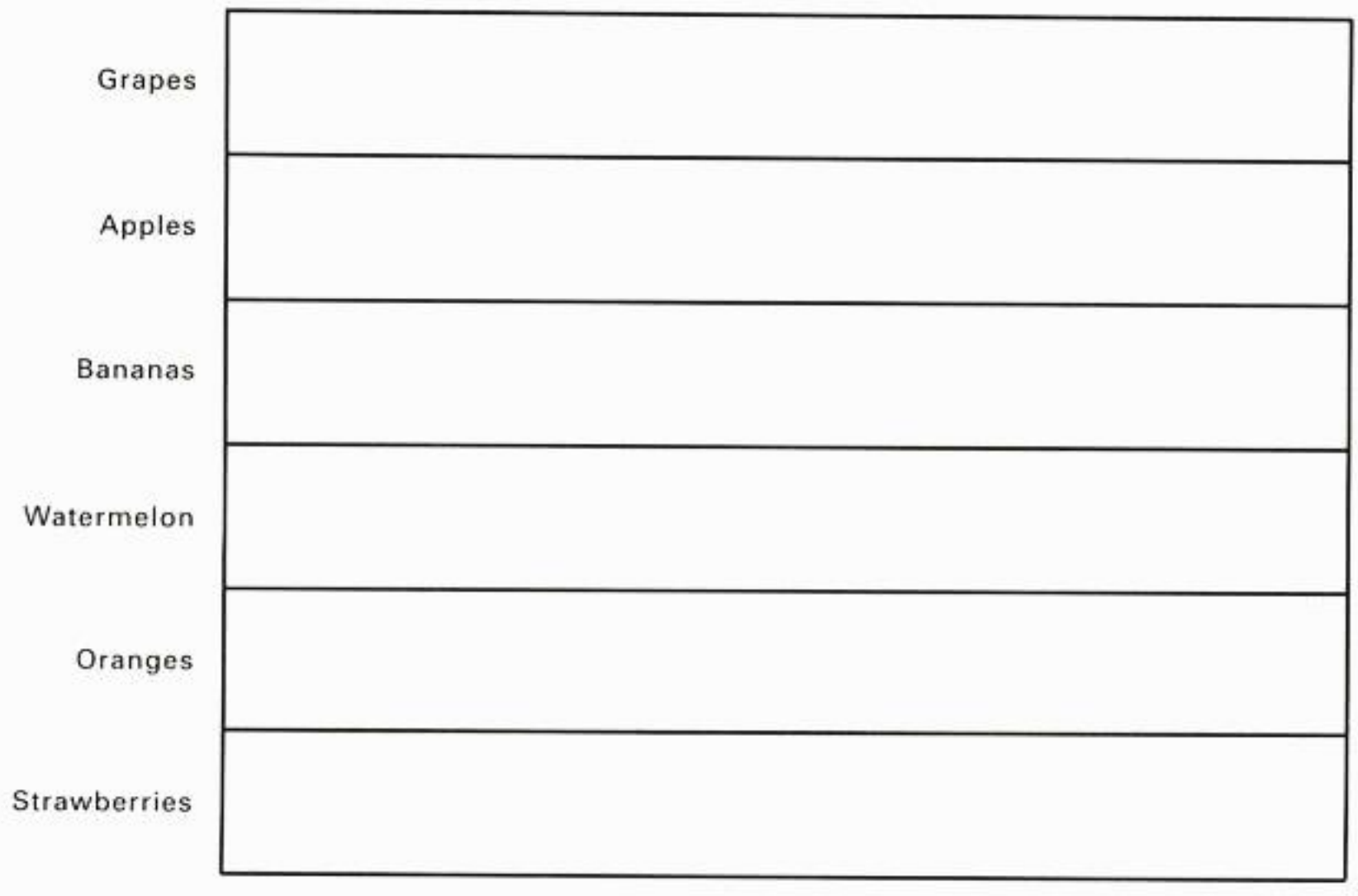
5.36 How many nickels in a quarter? _____ a dollar? _____

5.37 Mary and her mother were buying material for a new dress.
The pattern called for 3 yards of material.
How many inches would that be? _____

5.38 Dan and Eve have an assignment to make a picture graph. They have kept a record of their friends' favorite fruits. Read the data that Ted and Lisa have collected. Draw pictures of each type of fruit on the graph to show the data. Each drawing (picture of fruit) represents one student.

3 students liked grapes
8 students liked bananas
6 students liked oranges
3 students liked apples
5 students liked watermelons
7 students like strawberries

Favorite Fruit



SELF TEST 5

(each answer, 1 point)

5.01 What rule do we use to find

a. perimeter? _____ b. area? _____

5.02 Draw a rectangle in the space below. Show dimensions of 6 feet by 4 feet.

a. What is the perimeter of the rectangle? _____

b. What is the area of the rectangle? _____

5.03 Round to the nearest thousands. 7,054 = _____ 6,437 = _____

5.04 Marcia and Jackie decided to walk for exercise. Marcia walked 2 miles five days a week and Jackie walked 1 mile seven days a week. How many miles did they walk altogether?

a. Write the problem using the grouping method.

b. Write the answer the problem. N = _____

5.05 Write 84 in Roman numerals. _____

5.06 What unit of measurement would you use, to describe the distance an airplane flies? _____

5.07 Write the answer. $(6 + 3) \times 0 = N$ N = _____

5.08 Is a mirror hanging on a wall a plane shape or a solid shape? _____

SELF TEST 5 (cont.)

5.09 Write a number with 7 in the tens' place, 8 in the hundreds' place, 5 in the ones place, and 6 in the thousands' place. _____

5.010 Dad had a bag of 16 peppermint sticks. He gave 6 pieces to Rebecca and 6 pieces to Jennifer.

a. What would be the denominator of a fraction describing all of the candy? _____

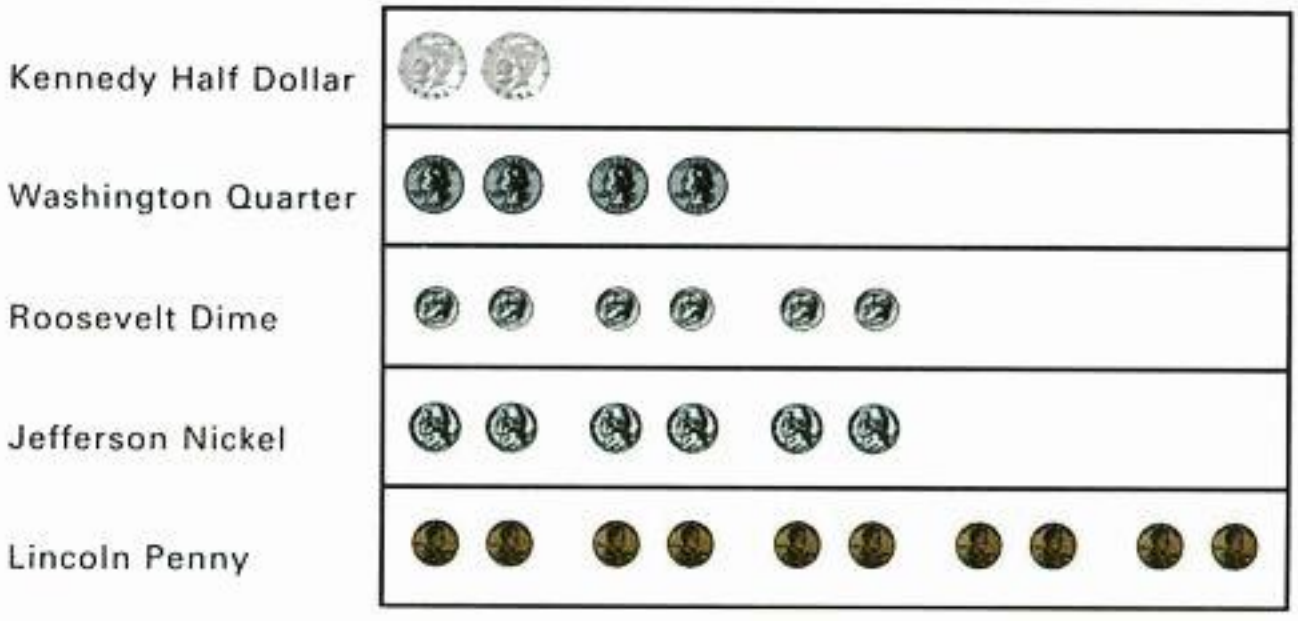
b. Write as a fraction the amount that dad gave to Rebecca. _____

c. Write as a fraction the amount that dad gave to Jennifer. _____

d. Write the total amount that dad had left after he gave the candy to Rebecca and Jennifer. _____

5.011 Read the graph and answer the questions.

Tom's Coin Collection



a. The graph about Tom's coin collection is an example of a _____ graph.

b. List the number of coins in the collection.

Roosevelt Dime _____ Jefferson Nickel _____ Lincoln Penny _____

My score _____
Teacher check _____

MATHEMATICS

405

LIFEPAC TEST

80/100

Name _____

Date _____

Score _____

MATHEMATICS 405: LIFEPAC TEST

Each numbered answer equals 4 points.

1. Complete the families of addition and subtraction facts.

   a. 3 + 4 = _____ b. 4 + 3 = _____ c. _____ – 3 = 4 d. _____ – 4 = 3

2. Complete the families of multiplication and division facts.

   a. 3 x 4 = _____ b. 4 x 3 = _____ c. _____ ÷ 4 = 3 d. _____ ÷ 3 = 4

Write the family of facts for:

3. a. 6 x 9 = _____ b. _____ c. _____ d. _____

4. a. 5 x 7 = _____ b. _____ c. _____ d. _____

5. a. 8 x 3 = _____ b. _____ c. _____ d. _____

6. Write the equivalent.

   1 foot = _____ inches 1 pint = _____ cups 1 gallon = _____ quarts

7. What unit of measurement would you use to measure ...

   the top of a desk? _____

   water in a glass? _____

A rectangle has dimensions of 7 feet by 4 feet.

8. What is the rectangle's perimeter measurement? _____

9. What is the rectangle's area measurement? _____

10. Write the equivalent number in Arabic or Roman numeral.

XXIV _____ 68 _____

11. Solve the missing numbers problems.

(7 x 2) – 3 = N N = _____ 3 + (6 x 2) = N N = _____

Mary baked 4 dozen cookies on Thursday and Jean baked 3 dozen on Friday. They sold 76 cookies on Saturday. How many cookies did they have after the sale.

12. a. Write the missing number problem.

b. What is the answer to the problem? N = _____

13. Jim needed a board three yards long for a table he was building. If he only had a 12 inch ruler, how many inches would he need to measure for the three yards? _____

14. What unit would you use to measure distance from New York to California? _____

15. What is the product of 42 and 7? _____

Solve the problems.

16.
$$\begin{array}{r} 857 \\ +\ 736 \\ \hline \end{array}$$

17. 7,326 + 45 = _____

18.
$$\begin{array}{r} 5{,}267 \\ +\ 6{,}795 \\ \hline \end{array}$$

Solve the problems.

19. $\begin{array}{r} 6,438 \\ -\ 2,159 \\ \hline \end{array}$

20. $4,405 - 268 =$ _____

21. $\begin{array}{r} 253 \\ \times\ \ 7 \\ \hline \end{array}$

22. $\begin{array}{r} 368 \\ \times\ \ 7 \\ \hline \end{array}$

23. $3\overline{)12}$ $8\overline{)40}$ $9\overline{)81}$ $6\overline{)42}$

24. $8\overline{)56}$ $9\overline{)45}$ $6\overline{)54}$ $5\overline{)35}$

25. $72 \div 9 =$ _____. $25 \div 5 =$ _____.

$36 \div 4 =$ _____. $6 \div 3 =$ _____.