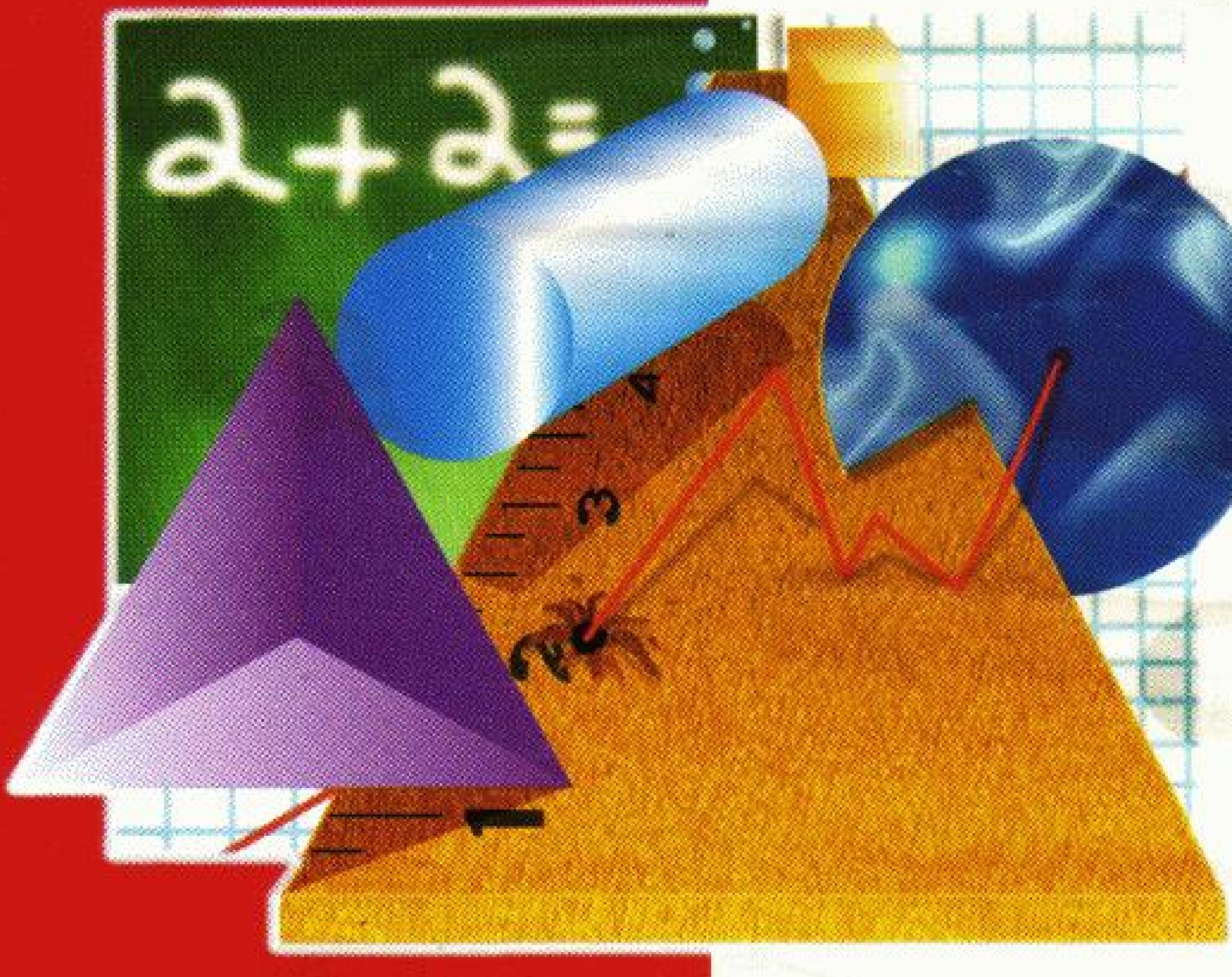
TEACHER'S GUIDE

400

LIFEPAC GOLD



MATH

Mathematics 400
Teacher's Guide

CONTENTS

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CURRICULUM

OVERVIEW

MATHEMATICS

Curriculum Overview
Grades K-12

Kindergarten

Lessons

1-40	41-80	81-120	121-160
Directions-right, left, high,low,etc. **Comparisons**-big, little,alike,different **Matching** **Cardinal Numbers**-to 9 **Colors**-red,blue,green, yellow, brown,purple **Shapes**-circle,square, rectangle,triangle **Number Order** **Before and After** **Ordinal Numbers**-to 9th **Problem Solving**	**Directions**-right,left, high,low,etc. **Comparisons**-big, little,alike,different **Matching** **Cardinal Numbers**-to 12 **Colors**-orange **Shapes**-circle,square, rectangle,triangle **Number Order** **Before and After** **Ordinal Numbers**-to 9th **Problem Solving** **Number Words**-to nine **Addition**-to 9	**Directions**-right,left, high,low,etc. **Comparisons**-big, little,alike,different **Matching** **Cardinal Numbers**-to 19 **Colors**-black,white **Shapes**-circle square, rectangle,triangle **Number Order** **Before and After** **Ordinal Numbers**-to 9th **Problem Solving** **Number Words**-to nine **Addition**-to 10 and multiples of 10 **Subtraction**-to 9 **Place Value** **Time/Calendar**	**Directions**-right,left, high,low,etc. **Comparisons**-big, little,alike,different **Matching** **Cardinal Numbers**-to 100 **Colors**-pink **Shapes**-circle,square, rectangle,triangle **Number Order** **Before and After** **Ordinal Numbers**-to 9th **Problem Solving** **Number Words**-to nine **Addition**-to 10 and multiples of 10 **Subtraction**-to 10 **Place Value** **Time/Calendar** **Money** **Skip Counting**-2's, 5's, 10's **Greater/ Less than**

	Grade 1	Grade 2	Grade 3
LIFEPAC 1	NUMBERS TO 99 • Number order, skip-count • Add, subtract to 9 • Story problems • Measurements, shapes	NUMBERS TO 100 • Numbers and words to 100 • Operation symbols +, −, =, >, < • Add, subtract, story problems • Place value, fact families	NUMBERS TO 999 • Digits, place value to 999 • Add, subtract, time • Linear measurements, dozen • Operation symbols +, −, =, ≠, >, <
LIFEPAC 2	NUMBERS TO 99 • Add, subtract to 10 • Number words • Place value, shapes • Patterns, sequencing, estimation	NUMBERS TO 200 • Numbers and words to 200 • Add, subtract, even and odd • Skip-count 2's, 5's, 10's, shapes • Ordinal numbers, fractions, money	NUMBERS TO 999 • Fact families, patterns, fractions • Add, subtract - carry, borrow • Skip count 2's, 5's, 10's • Money, shapes, lines, even, odd
LIFEPAC 3	NUMBERS TO 100 • Number sentences, • Fractions, oral directions • Story problems • Time, symbols =, ≠	NUMBERS TO 200 • Add w/ carry to 10's place • Subtract, standard measurements • Flat shapes, money, AM/PM • Rounding to 10's place	NUMBERS TO 999 • Add 3 numbers w/ carry • Coins, weight, volume, AM/PM • Fractions, oral instructions • Skip count 3's, subtract w/ borrow
LIFEPAC 4	NUMBERS TO 100 • Add to 18, place value • Skip-count, even and odd • Money • Shapes, measurement	NUMBERS TO 999 • Numbers and words to 999 • Add, subtract, place value • Calendar, making change • Measurements, solid shapes	NUMBERS TO 9,999 • Place value to 9,999 • Rounding to 10's, estimation • Add and subtract fractions • Roman numerals, 1/4 inch
LIFEPAC 5	NUMBERS TO 100 • Add 3 numbers - 1 digit • Ordinal numbers, fractions • Time, number line • Estimation, charts	NUMBERS TO 999 • Data and bar graphs, shapes • Add, subtract to 100's • Skip-count 3's, place value to 100's • Add fractions, temperature	NUMBERS TO 9,999 • Number sentences, temperature • Rounding to 100's, estimation • Perimeter, square inch • Bar graph, symmetry, even/odd rules
LIFEPAC 6	NUMBERS TO 100 • Number words to 99 • Add 2 numbers - 2 digit • Symbols >, < • Fractions, shapes	NUMBERS TO 999 • Measurements, perimeter • Time, money • Subtract w/ borrow from 10's place • Add, subtract fractions	NUMBERS TO 9,999 • Add, subtract to 9,999 • Multiples, times facts for 2 • Area, equivalent fractions, money • Line graph, segments, angles
LIFEPAC 7	NUMBERS TO 200 • Number order, place value • Subtract to 12 • Operation signs • Estimation, graphs, time	NUMBERS TO 999 • Add w/ carry to 100's place • Fractions as words • Number order in books • Rounding and estimation	NUMBERS TO 9,999 • Times facts for 5, missing numbers • Mixed numbers - add, subtract • Subtract with 0's in minuend • Circle graph, probability
LIFEPAC 8	NUMBERS TO 200 • Addition, subtract to 18 • Group counting • Fractions, shapes • Time, measurements	NUMBERS TO 999 • Add, subtract, measurements • Group count, 'think' answers • Convert coins, length, width • Directions-N, S, E, W	NUMBERS TO 9,999 • Times facts for 3, 10 - multiples of 4 • Convert units of measurement • Decimals, directions, length, width • Picture graph, missing addend
LIFEPAC 9	NUMBERS TO 200 • Add 3 numbers - 2 digit • Fact families • Sensible answers • Subtract 2 numbers - 2 digit	NUMBERS TO 999 • Area and square measurement • Add 3 numbers - 20 digit w/ carry • Add coins and convert to cents • Fractions, quarter-inch	NUMBERS TO 9,999 • Add, subtract whole numbers, fractions, mixed numbers • Standard measurements, metrics • Operation symbols, times facts for 4
LIFEPAC 10	NUMBERS TO 200 • Add, subtract, place value • Directions - N, S, E, W • Fractions • Patterns	NUMBERS TO 999 • Rules for even and odd • Round numbers to 100's place • Time - digital, sensible answers • Add 3 numbers - 3 digit	NUMBERS TO 9,999 • Add, subtract, times facts 2,3,4,5,10 • Rounding to 1,000's, estimation • Probability, equations, parentheses • Perimeter, area

	Grade 4	Grade 5	Grade 6
LIFEPAC 1	WHOLE NUMBERS & FRACTIONS • Naming whole numbers • Naming Fractions • Sequencing patterns • Numbers to 1,000	WHOLE NUMBERS & FRACTIONS • Operations & symbols • Fraction language • Grouping, patterns, sequencing • Rounding & estimation	FRACTIONS & DECIMALS • Number to billions' place • Add & subtract fractions • Add & subtract decimals • Read and write Fractions
LIFEPAC 2	WHOLE NUMBERS & FRACTIONS • Operation symbols • Multiplication - 1 digit multiplier • Fractions - addition & subtraction • Numbers to 10,000	WHOLE NUMBERS & FRACTIONS • Multiplication & division • Fractions - +, –, simplify • Plane & solid shapes • Symbol language	FINDING COMMON DENOMINATORS • Prime factors • Fractions with unlike denominators • Exponential notation • Add & subtract mixed numbers
LIFEPAC 3	WHOLE NUMBERS & FRACTIONS • Multiplication with carrying • Rounding & estimation • Sequencing fractions • Numbers to 100,000	WHOLE NUMBERS & FRACTIONS • Short division • Lowest common multiple • Perimeter & area • Properties of addition	MULTIPLYING MIXED NUMBERS • Multiply mixed numbers • Divide decimals • Bar and line graphs • Converting fractions & decimals
LIFEPAC 4	LINES & SHAPES • Plane & solid shapes • Lines & line segments • Addition & subtraction • Multiplication with carrying	WHOLE NUMBERS • Lines - shapes - circles • Symmetric - congruent - similar • Decimal place value • Properties of multiplication	DIVIDING MIXED NUMBERS • Divide mixed numbers • Area and perimeter • Standard measurements
LIFEPAC 5	WHOLE NUMBERS • Division - 1 digit divisor • Families of facts • Standard measurements • Number grouping	WHOLE NUMBERS & FRACTIONS • Multiply & divide by 10, 100, 1,000 • Standard measurements • Rate problems • Whole number & fraction operations	METRIC MEASURE • Metric measures • Plane & solid shapes • Multi-operation problems • Roman Numerals
LIFEPAC 6	WHOLE NUMBERS & FRACTIONS • Division - 1 digit with remainder • Factors & multiples • Fractions - improper & mixed • Equivalent fractions	FRACTIONS & DECIMALS • Multiplication of fractions • Reading decimal numbers • Adding & subtracting decimals • Multiplication - decimals	LCM & GCF • LCM, GCF • Fraction and decimal equivalents • Percent • Variables, functions & formulas
LIFEPAC 7	WHOLE NUMBERS & FRACTIONS • Multiplication - 2 digit multiplier • Simplifying fractions • Averages • Decimals in money problems	WHOLE NUMBERS & FRACTIONS • Division - 2-digit divisor • Metric units • Multiplication - mixed numbers • Multiplication - decimals	INTEGERS, RATIO & PROPORTION • Positive and negative integers • Ratio & proportion • Fractions, decimals & percents • Statistics
LIFEPAC 8	WHOLE NUMBERS & FRACTIONS • Division 1 digit divisor • Fractions - unlike denominators • Metric units • Whole numbers - +, –, x, ÷	WHOLE NUMBERS • Calculators & whole numbers • Calculators & decimals • Estimation • Prime factors	PROBABILITY & GRAPHING • Probability • Graphs • Metric and standard units • Square root
LIFEPAC 9	DECIMALS & FRACTIONS • Reading and writing decimals • Mixed numbers - +, – • Cross multiplication • Estimation	FRACTIONS & DECIMALS • Division - fractions • Division - decimals • Ratios & ordered pairs • Converting fractions to decimals	CALCULATORS & ESTIMATION • Calculators • Estimation • Geometric symbols & shapes • Missing number problems
LIFEPAC 10	PROBLEM SOLVING • Estimation & data gathering • Charts & Graphs • Review numbers to 100,000 • Whole numbers - +, –, x, ÷	PROBLEM SOLVING • Probability & data gathering • Charts & graphs • Review numbers to 100 million • Fractions & decimals - +, –, x, ÷	INTEGERS & OPERATIONS • Mental arithmetic • Fraction operations • Variables & properties • Number lines

	Grade 7	Grade 8	Grade 9
LIFEPAC 1	WHOLE NUMBERS • Number concepts • Addition • Subtraction • Applications	WHOLE NUMBERS • The set of whole numbers • Graphs • Operations with whole numbers • Applications with whole numbers	VARIABLES AND NUMBERS • Variables • Distributive Property • Definition of signed numbers • Signed number operations
LIFEPAC 2	MULTIPLICATION AND DIVISION • Basic facts • Procedures • Practice • Applications	NUMBERS AND FACTORS • Numbers and bases • Sets • Factors and multiples • Least common multiples	SOLVING EQUATIONS • Sentences and formulas • Properties • Solving equations • Solving inequalities
LIFEPAC 3	GEOMETRY • Segments, lines, and angles • Triangles • Quadrilaterals • Circles and hexagons	RATIONAL NUMBERS • Proper and improper fractions • Mixed numbers • Decimal fractions • Per cent	PROBLEM ANALYSIS AND SOLUTION • Words and symbols • Simple verbal problems • Medium verbal problems • Challenging verbal problems
LIFEPAC 4	RATIONAL NUMBERS • Common fractions • Improper fractions • Mixed numbers • Decimal fractions	FRACTIONS AND ROUNDING • Common fraction addition • Common fraction subtraction • Decimal fractions • Rounding numbers	POLYNOMIALS • Addition of polynomials • Subtraction of polynomials • Multiplication of polynomials • Division of polynomials
LIFEPAC 5	SETS AND NUMBERS • Set concepts and operations • Early number systems • Decimal number system • Factors and multiples	FRACTIONS AND PER CENT • Multiplication of fractions • Division of fractions • Fractions as per cents • Per cent exercises	ALGEBRAIC FACTORS • Greatest common factor • Binomial factors • Complete factorization • Word problems
LIFEPAC 6	FRACTIONS • Like denominators • Unlike denominators • Decimal fractions • Equivalents	STATISTICS, GRAPHS, & PROBABILITY • Statistical measures • Types of graphs • Simple probability • And–Or statements	ALGEBRAIC FRACTIONS • Operations with fractions • Solving equations • Solving inequalities • Solving word problems
LIFEPAC 7	FRACTIONS • Common fractions • Decimal fractions • Per cent • Word problems	INTEGERS • Basic concepts • Addition and subtraction • Multiplication and division • Expressions and sentences	RADICAL EXPRESSIONS • Rational and irrational numbers • Operations with radicals • Irrational roots • Radical equations
LIFEPAC 8	FORMULAS AND RATIOS • Writing formulas • A function machine • Equations • Ratios and proportions	FORMULAS AND GEOMETRY • Square root • Perimeter, circumference, and area • Rectangular solid • Cylinder, cone, and sphere	GRAPHING • Equations of two variables • Graphing lines • Graphing inequalities • Equations of lines
LIFEPAC 9	DATA, STATISTICS AND GRAPHS • Gathering and organizing data • Central tendency and dispersion • Graphs of statistics • Graphs of points	ALGEBRAIC EQUATIONS • Variables in formulas • Addition and subtraction • Multiplication and division • Problem solving	SYSTEMS • Graphical solution • Algebraic solutions • Determinants • Word problems
LIFEPAC 10	MATHEMATICS IN SPORTS • Whole numbers • Geometry, sets, and systems • Fractions • Formulas, ratios, and statistics	NUMBERS, FRACTIONS, ALGEBRA • Whole numbers and fractions • Fractions and per cent • Statistics, graphs and probability • Integers and algebra	QUADRATIC EQUATIONS AND REVIEW • Solving quadratic equations • Equations and inequalities • Polynomials and factors • Radicals and graphing

	Grade 10	Grade 11	Grade 12
LIFEPAC 1	A MATHEMATICAL SYSTEM • Points, lines, and planes • Definition of definitions • Geometric terms • Postulates and theorems	SETS, STRUCTURE, AND FUNCTION • Properties and operations of sets • Axioms and applications • Relations and functions • Algebraic expressions	RELATIONS AND FUNCTIONS • Relations and functions • Rules of correspondence • Notation of functions • Types of functions
LIFEPAC 2	PROOFS • Logic • Reasoning • Two-column proof • Paragraph proof	NUMBERS, SENTENCES, & PROBLEMS • Order and absolute value • Sums and products • Algebraic sentences • Number and motion problems	SPECIAL FUNCTIONS • Linear functions • Second-degree functions • Polynomial functions • Other functions
LIFEPAC 3	ANGLES AND PARALLELS • Definitions and measurement • Relationships and theorems • Properties of parallels • Parallels and polygons	LINEAR EQUATIONS & INEQUALITIES • Graphs • Equations • Systems of equations • Inequalities	TRIGONOMETRIC FUNCTIONS • Definition • Evaluation of functions • Trigonometric tables • Special angles
LIFEPAC 4	CONGRUENCY • Congruent triangles • Corresponding parts • Inequalities • Quadrilaterals	POLYNOMIALS • Multiplying polynomials • Factoring • Operations with polynomials • Variations	CIRCULAR FUNCTIONS & GRAPHS • Circular functions & special angles • Graphs of sin and cos • Amplitude and period • Phase shifts
LIFEPAC 5	SIMILAR POLYGONS • Ratios and proportions • Definition of similarity • Similar polygons and triangles • Right triangle geometry	RADICAL EXPRESSIONS • Multiplying and dividing fractions • Adding and subtracting fractions • Equations with fractions • Applications of fractions	IDENTITIES AND FUNCTIONS • Reciprocal relations • Pythagorean relations • Trigonometric identities • Sum and difference formulas
LIFEPAC 6	CIRCLES • Circles and spheres • Tangents, arcs, and chords • Special angles in circles • Special segments in circles	REAL NUMBERS • Rational and irrational numbers • Laws of Radicals • Quadratic equations • Quadratic formula	TRIGONOMETRIC FUNCTIONS • Trigonometric functions • Law of cosines • Law of sines • Applied problems
LIFEPAC 7	CONSTRUCTION AND LOCUS • Basic constructions • Triangles and circles • Polygons • Locus meaning and use	QUADRATIC RELATIONS & SYSTEMS • Distance formulas • Conic sections • Systems of equations • Application of conic sections	TRIGONOMETRIC FUNCTIONS • Inverse functions • Graphing polar coordinates • Converting polar coordinates • Graphing polar equations
LIFEPAC 8	AREA AND VOLUME • Area of polygons • Area of circles • Surface area of solids • Volume of solids	EXPONENTIAL FUNCTIONS • Exponents • Exponential equations • Logarithmic functions • Matrices	QUADRATIC EQUATIONS • Conic sections • Circle and ellipse • Parabola and hyperbola • Transformations
LIFEPAC 9	COORDINATE GEOMETRY • Ordered pairs • Distance • Lines • Coordinate proofs	COUNTING PRINCIPLES • Progressions • Permutations • Combinations • Probability	PROBABILITY • Random experiments & probability • Permutations • Combinations • Applied problems
LIFEPAC 10	REVIEW • Proof and angles • Polygons and circles • Construction and measurement • Coordinate geometry	REVIEW • Integers and open sentences • Graphs and polynomials • Fractions and quadratics • Exponential functions	CALCULUS • Mathematical induction • Functions and limits • Slopes of functions • Review of 1200 mathematics

LIFEPAC

MANAGEMENT

STRUCTURE OF THE LIFEPAC CURRICULUM

The LIFEPAC curriculum is conveniently structured to provide one teacher handbook containing teacher support material with answer keys and ten student worktexts for each subject at grade levels two through twelve. The worktext format of the LIFEPACs allows the student to read the textual information and complete workbook activities all in the same booklet. The easy to follow LIFEPAC numbering system lists the grade as the first number(s) and the last two digits as the number of the series. For example, the Language Arts LIFEPAC at the 6th grade level, 5th book in the series would be LA 605.

Each LIFEPAC is divided into 3 to 5 sections and begins with an introduction or overview of the booklet as well as a series of specific learning objectives to give a purpose to the study of the LIFEPAC. The introduction and objectives are followed by a vocabulary section which may be found at the beginning of each section at the lower levels, at the beginning of the LIFEPAC in the middle grades, or in the glossary at the high school level. Vocabulary words are used to develop word recognition and should not be confused with the spelling words introduced later in the LIFEPAC. The student should learn all vocabulary words before working the LIFEPAC sections to improve comprehension, retention, and reading skills.

Each activity or written assignment has a number for easy identification, such as 1.1. The first number corresponds to the LIFEPAC section and the number to the right of the decimal is the number of the activity.

Teacher checkpoints, which are essential to maintain quality learning, are found at various locations throughout the LIFEPAC. The teacher should check 1) neatness of work and penmanship, 2) quality of understanding (tested with a short oral quiz), 3) thoroughness of answers (complete sentences and paragraphs, correct spelling, etc.), 4) completion of activities (no blank spaces), and 5) accuracy of answers as compared to the answer key (all answers correct).

The self test questions are also number coded for easy reference. For example, 2.015 means that this is the 15th question in the self test of Section II. The first number corresponds to the LIFEPAC section, the zero indicates that it is a self test question, and the number to the right of the zero the question number.

The LIFEPAC test is packaged at the centerfold of each LIFEPAC. It should be removed and put aside before giving the booklet to the student for study.

Answer and test keys have the same numbering system as the LIFEPACs and appear at the back of this handbook. The student may be given access to the answer keys (not the test keys) under teacher supervision so that he can score his own work.

A thorough study of the Curriculum Overview by the teacher before instruction begins is essential to the success of the student. The teacher should become familiar with expected skill mastery and understand how these grade level skills fit into the overall skill development of the curriculum. The teacher should also preview the objectives that appear at the beginning of each LIFEPAC for additional preparation and planning.

TEST SCORING and GRADING

Answer keys and test keys give examples of correct answers. They convey the idea, but the student may use many ways to express a correct answer. The teacher should check for the essence of the answer, not for the exact wording. Many questions are high level and require thinking and creativity on the part of the student. Each answer should be scored based on whether or not the main idea written by the student matches the model example. "Any Order" or "Either Order" in a key indicates that no particular order is necessary to be correct.

Most self tests and LIFEPAC tests at the lower elementary levels are scored at 1 point per answer; however, the upper levels may have a point system awarding 2 to 5 points for various answers or questions. Further, the total test points will vary; they may not always equal 100 points. They may be 78, 85, 100, 105, etc.

ex. 1 58 / 72

ex. 2 84 / 105

A score box similar to ex.1 above is located at the end of each self test and on the front of the LIFEPAC test. The bottom score, 72, represents the total number of points possible on the test. The upper score, 58, represents the number of points your student will need to receive an 80% or passing grade. If you wish to establish the exact percentage that your student has achieved, find the total points of his correct answers and divide it by the bottom number (in this case 72.) For example, if your student has a point total of 65, divide 65 by 72 for a grade of 90%. Referring to ex. 2, on a test with a total of 105 possible points, the student would have to receive a minimum of 84 correct points for an 80% or passing grade. If your student has received 93 points, simply divide the 93 by 105 for a percentage grade of 86%. Students who receive a score below 80% should review the LIFEPAC and retest using the appropriate Alternate Test found in the Teacher's Guide.

The following is a guideline to assign letter grades for completed LIFEPACs based on a maximum total score of 100 points.

LIFEPAC Test	=	60% of the Total Score (or percent grade)
Self Test	=	25% of the Total Score (average percent of self tests)
Reports	=	10% or 10* points per LIFEPAC
Oral Work	=	5% or 5* points per LIFEPAC

*Determined by the teacher's subjective evaluation of the student's daily work.

Example:

LIFEPAC Test Score	= 92%	92 x .60	=	55 points
Self Test Average	= 90%	90 x .25	=	23 points
Reports			=	8 points
Oral Work			=	4 points
TOTAL POINTS			=	90 points

Grade Scale based on point system:

100	–	94	=	A
93	–	86	=	B
85	–	77	=	C
76	–	70	=	D
Below		70	=	F

SELF TEST FOUR

4.01 a.
$$N + 632 = 921$$
$$N + 632(-632) = 921(-632)$$
$$N = 289$$
$$289 + 632 = 921$$

b.
$$N - 306 = 562$$
$$N - 306(+306) = 562(+306)$$
$$N = 868$$
$$868 - 306 = 562$$

4.02 a. $N = 99$
b. $N = 45$

4.03 3 4 9 9 7 8

4.04 22 64

4.05 XVI XLVIII

4.06 4,591 5,752 524 263

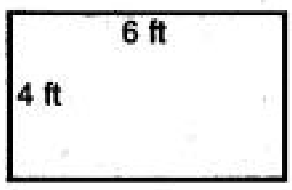
4.07 4,256 2,772 3,810 9,525

4.08 a. $18 \div 3 = 6$
family of facts for 18, 6, 3
b. $5 < 15$
1st number +1, 2nd number +3

SELF TEST FIVE

5.01 a. $P = 2L + 2W$ b. $A = L \times W$

5.02



$P = 2L + 2W$ $A = L \times W$
$P = (2 \times 6) + (2 \times 4)$ $A = 6 \times 4$
$P = 12 + 8$ $A = 24$
$P = 20$
a. 20 feet
b. 24 square feet

5.03 7,000 6,000

5.04 a. $N = (2 \times 5) + (1 \times 7)$
$N = 10 + 7$
$N = 17$
b. $N = 17$ miles

5.05 LXXXIV

5.06 miles

5.07 $N = 0$

5.08 plane

5.09 6,875

5.010 a. 16
b. $\frac{6}{16}$
c. $\frac{6}{16}$
d. $\frac{4}{16}$

5.011 a. picture
b. 6, 6, 10

SELF TEST ONE

1.01 $4 \times 6 = 24, 24 \div 4 = 6$
$6 \times 4 = 24, 24 \div 6 = 4$

1.02 1, 2, 3, 5, 7

1.03 12, 14, 15, 16, 18, 20

1.04 1, 2, 4, 8, 16

1.05 1, 3, 7, 21

1.06 4, 8, 12, 16, 20

1.07 9, 18, 27, 36, 45

1.08 multiplication

1.09
a. 4 factor
b. 6 factor
c. 72 multiple
d. 28 multiple

1.010
a. 9 R2 6 R1 6 R1
b. 9 R2 8 R1 7 R1
c. 3 R1 7 R1 7 R3

SELF TEST TWO

2.01 12,682 32,292 19,864 31,860

2.02
a. N + (243 – 69) = 736 subtract 174
b. 426 = N – (46 + 348) add 394

2.03 a.
$76 = (15 + 18) + N$
$76 = 33 + N$
$76(-33) = 33 + N(-33)$
$43 = N$
$76 = 15 + 18 + 43$

b. N = 43

2.04 a. $\frac{11}{8}$
b. improper

2.05 $\frac{3}{10}$

2.06 $2\frac{3}{4}$

2.07 $\frac{1}{3}, \frac{2}{3}, \frac{3}{3}, \frac{4}{3}, \frac{5}{3}, \frac{6}{3}, \frac{7}{3}, \frac{8}{3}$

2.08 $1, 1\frac{1}{4}, 1\frac{2}{4}, 1\frac{3}{4}, 2, 2\frac{1}{4}, 2\frac{2}{4}, 2\frac{3}{4},$
$3, 3\frac{1}{4}, 3\frac{2}{4}, 3\frac{3}{4}, 4$

2.09
a. four-fifths
b. $\frac{6}{7}$
c. five and two-thirds
d. $4\frac{7}{8}$

SELF TEST THREE

3.01 88 3 11

3.02 72 4 12

3.03
a. 1, 2, 4, 8 8, 16, 24, 32, 40
b. 1, 2, 3, 4, 6, 12 12, 24, 36, 48, 60

3.04
a. $\frac{7}{6}$ $\frac{5}{10}$ $\frac{11}{12}$

b. $13\frac{7}{9}$ $2\frac{3}{15}$ $12\frac{8}{16}$

3.05 408 6,059 78,254 984,876

3.06 119 229 2,632 1,529

3.07 5 R3 7 R4 6 R1 3 R1

3.08 204

3.09 DCXXXII

SELF TEST FOUR

4.01 2 2
2 144

4.02 yard feet ounce pint gallon quart

4.03 800 miles

4.04

3	5	2	0	6	6
300,000	50,000	2,000	0	60	6

4.05 $\frac{5}{6} = \frac{25}{30}$ $\frac{3}{8} = \frac{15}{40}$ $\frac{2}{7} = \frac{10}{35}$

4.06 $\frac{6}{18} = \frac{1}{3}$ $\frac{4}{8} = \frac{1}{2}$ $\frac{5}{15} = \frac{1}{3}$

4.07 a. ≠ 4 x 15 = 60
8 x 5 = 40
b. = 3 x 21 = 63
9 x 7 = 63
c. = 2 x 36 = 72
8 x 9 =72
d. ≠ 3 x 16 = 48
5 x 8 = 40

4.08 cube, cylinder
pyramid, cone

SELF TEST FIVE

5.01 a. =
b. 5 x 32 = 160
20 x 8 = 160

5.02 a. $\frac{3}{5} = \frac{9}{15}$
b. 5 x 9 = 45
3 x 15 = 45

5.03 1, 2, 5

5.04 4, 10, 15

5.05 1, 2, 3, 6

5.06 6, 12, 18, 24, 30

5.07 ≠, <

5.08 fifth

5.09 10

5.010 place holder

5.011 50,000

5.012 4,728 4,606

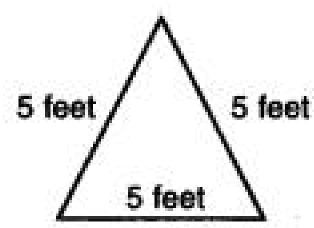
5.013 sixty thousand, fifty-four

5.014

9,342	9,000	5,362	5,000
– 4,839	5,000	+ 2,794	3,000
4,503	4,000	8,156	8,000

5.015 sphere

5.016



a. 3
b. 3
c. 3
d. 15 feet

5.017 a. 7 R3 b. $2\frac{3}{8}$ c. $5\frac{3}{7}$

5.018 a. 45 = (8 + 10 + 15) + N
45 = 33 + N
45(–33) = 33 + N(–33)
12 = N
45 = 8 + 10 + 15 + 12
b. N = 12 boxes

SELF TEST ONE

1.01 11, 23, 31

1.02 1, 2, 4, 8 1, 3, 5, 15

1.03 4, 8, 12, 16, 20 7, 14, 21, 28, 35

1.04 a. 1,344 b. 2,822 c. 4,230 d. 3,360

1.05 a. 6 R4 b. 9 R4 c. 8 R1 d. 4 R2

1.06 a. 1) $\frac{7}{5}$ 2) $1\frac{2}{5}$ b. 1) $\frac{5}{3}$ 2) $1\frac{2}{3}$

1.07 a. $\frac{8}{5} = 1\frac{3}{5}$ b. $\frac{14}{7} = 2$

1.08 a. < b. <
c. ≠ d. =

1.09 a. N = 27
b. N = 13

SELF TEST TWO

2.01 a. 1,288 b. 564 c. 1,406 d. 2,436

2.02 a. $\frac{6}{5} = 1\frac{1}{5}$ b. $\frac{16}{3} = 5\frac{1}{3}$
c. $\frac{3}{6} = \frac{1}{2}$ d. $\frac{8}{12} = \frac{2}{3}$

2.03

36	1
2,000	1
16	2
4	16
4	1

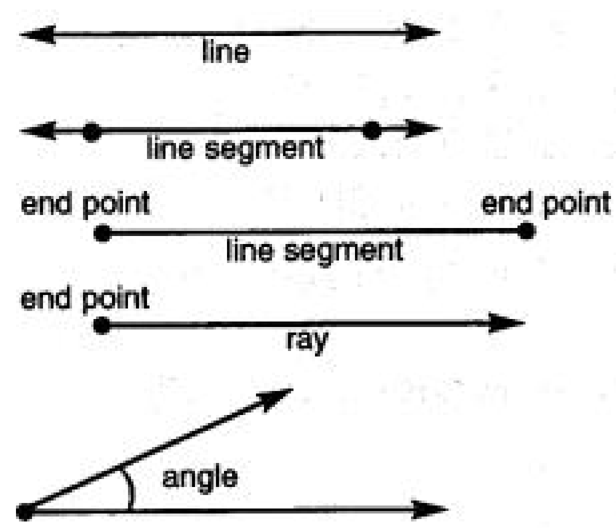
2.04

1	7	6	3	0	2
100,00	70,000	6,000	300	0	2

2.05 5

2.06 a. 0
b. even
c. 5 or 0
d. 0

2.07 a.
b.
c.
d.
e.



SELF TEST THREE

3.01 a. 16,575 b. 25,548 c. 57,582 d. 22,974

3.02 a. $\frac{9}{7} = 1\frac{2}{7}$ b. $\frac{13}{9} = 1\frac{4}{9}$
c. $\frac{6}{24} = \frac{1}{4}$ d. $\frac{8}{20} = \frac{2}{5}$

3.03 a. $1\frac{3}{8}$ b. $\frac{1}{3}$ c. 1 d. $\frac{1}{3}$

3.04 a. subtract 18 27
b. add 29 85
c. 18 + 27 = 45
d. 56 = 85 – 29

3.05 a. N – (85 + 13) = 123 add 98 221
b. 79 = N(– 48 + 5) add 53 132
c. 221 – (85 + 13) = 123

SELF TEST FOUR

4.01
a. 50 20 80 60
b. 300 400 300 900
c. 5,000 8,000 3,000 9,000

4.02
a. one hundred thirty-two thousand, fifty-six
b. two hundred four thousand, three hundred eighty-two

4.03
a. 540,685
b. 273,108

4.04
a. $72.15
+ 35.08
$107.23

b. $20.11
− 15.74
$ 4.37

4.05 a. $\frac{3}{4}$ b. $\frac{1}{5}$ c. $1\frac{2}{5}$ d. $\frac{1}{3}$

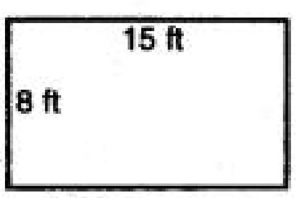
4.06
P = 26 linear yds
A = 40 square yds

P = 118 linear in
A = 828 square in

4.07
a. $27 \div 9 = 3$
b. $\frac{20}{4}$
c. 108,999

SELF TEST FIVE

5.01
a. 0, 1, 2, 3, 5, 7, 11
b. 1, 3, 5, 7, 9, 11
c. 1, 2, 3, 4, 6, 12
d. 2, 4, 6, 8, 10, 12
e. Teacher check $\frac{3}{2}$
f. Teacher check $1\frac{1}{2}$
g. 8
h. 6
i. Teacher check 1, 5, 4, 8, 7, 11, 10, ...
j. 29

5.02
a. 

b. 46 linear ft
c. 120 square ft

5.03
a. three
b. seventh

5.04
a. 300¢ or $3.00
b. 156¢ or $1.56

5.05
a. 6
b. 1
c. 2
d. 3
e. 5
f. 4

SELF TEST ONE

1.01 3, 19, 31

1.02 6, 14, 21, 25, 33

1.03 1, 3, 9 1, 2, 7, 14

1.04 6, 12, 18, 24, 30 8, 16, 24, 32, 40

1.05 2,345 504 23,436 39,140

1.06 four hundred two thousand, three hundred ninety-one

1.07 300,056

1.08 a. =, ≠
b. >, <

1.09 a. 4, 14
b. 86, 77

1.010 a. 546,728
b. 172,934

1.011 a. 30,000 b. 0

1.012 b b c a

1.013 $\frac{1}{2}$ 1 $\frac{1}{3}$ $\frac{1}{3}$

SELF TEST TWO

2.01 8 R1 3 R7 13 R2 24 R2

2.02 $\frac{4}{7} = \frac{8}{14}$ $\frac{2}{3} = \frac{8}{12}$ $\frac{5}{8} = \frac{15}{24}$ $\frac{3}{9} = \frac{6}{18}$

2.03 4, $\frac{1}{2}$, $\frac{2}{4}$

9, $\frac{2}{3}$, $\frac{6}{9}$

10, $\frac{4}{5}$, $\frac{8}{10}$

15, $\frac{3}{5}$, $\frac{9}{15}$

2.04 $\frac{2}{3}$ $1\frac{1}{12}$ $\frac{1}{8}$ $\frac{2}{9}$

2.05 a. 5, 11 b. 3, 83

2.06 N = 16 – (4 + 2 + 3)
N = 16 – 9
N = 7 pints

SELF TEST THREE

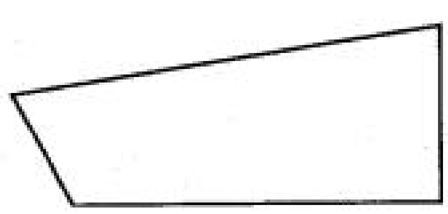
3.01 a. 234 872 19,128 43,866
b. 16,555 145,938 349,832

3.02 15 R2 62 36 R7 18 R1

3.03 3

3.04 4

3.05 Suggested answer.



3.06 polygons or quadrilaterals

3.07 4

3.08 4

3.09 opposite

3.010 equal

SELF TEST FOUR

4.01 a. 10
b. Suggested answers.
milli, centi
c. yard
d. quart
e. ounce

4.02 a. meter
b. gram
c. liter

4.03 a. 32°
b. 0°
c. 212°
d. 100°

4.04 $1\frac{1}{6}$ $1\frac{2}{5}$ $\frac{13}{20}$ $\frac{1}{6}$

4.05 16,016 140,008

4.06 5 R6 16 R4 12 R2 76 R1

4.07 2:15PM

SELF TEST FIVE

5.01 a.
$$\begin{array}{rl} 2{,}375 & \text{addend} \\ \underline{+\,4{,}750} & \text{addend} \\ 7{,}125 & \text{sum} \end{array}$$

b.
$$\begin{array}{rl} 8{,}604 & \text{minuend} \\ \underline{-\,4{,}925} & \text{subtrahend} \\ 3{,}679 & \text{difference} \end{array}$$

c.
$$\begin{array}{rl} 493 & \text{multiplicand} \\ \underline{\times\ 8} & \text{multiplier} \\ 3{,}944 & \text{product} \end{array}$$

d.
$$\begin{array}{rl} 82 & \text{quotient} \\ 492 & \text{dividend} \\ & \text{6 is divisor} \end{array}$$

5.02 1, 2, 3, 6, 9, 18

5.03 4, 8, 12, 16, 20

5.04 12

5.05 prime

5.06

5	6	3	4	8	2
500,000	60,000	3,000	400	80	2

5.07 a.
$$\begin{array}{rr} 3{,}746 & 4{,}000 \\ \underline{+\,2{,}931} & \underline{3{,}000} \\ 6{,}677 & 7{,}000 \end{array}$$

b.
$$\begin{array}{rr} 6{,}759 & 7{,}000 \\ \underline{-\,2{,}135} & \underline{2{,}000} \\ 4{,}624 & 5{,}000 \end{array}$$

5.08 a. 79 b. 1,520

5.09 a. ≠ b. = c. ≠ d. ≠

5.010 a. circle
b. 6
c. 25

SELF TEST ONE

1.01 fractions

1.02 ten

1.03 tenths, hundredths, thousandths

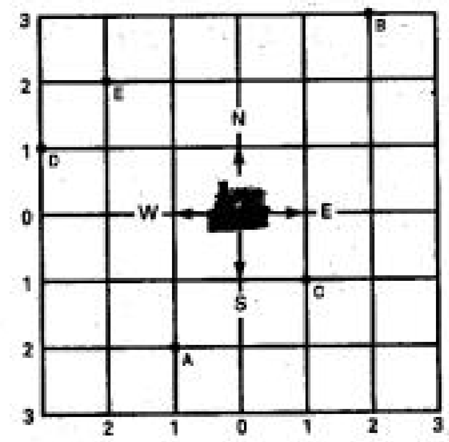
1.04 .2, two tenths

$\frac{47}{100}$, forty-seven hundredths

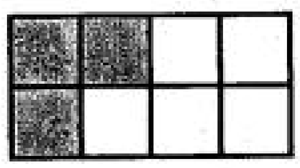
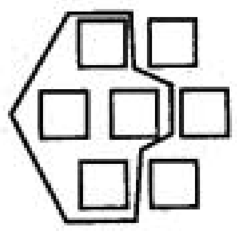
.623, $\frac{623}{1{,}000}$

1.05 \$61.43 \$11.29 \$41.06 \$24.78

1.06 10,528 400,842 180,950

1.07 

SELF TEST TWO

2.01  

2.02 a. $\frac{3}{5}$ $\frac{5}{8}$

b. $\frac{7}{9}$ $\frac{7}{16}$

2.03 $\frac{8}{12}$ $\frac{8}{10}$ $\frac{9}{24}$

2.04 = ≠ ≠

2.05 $\frac{3}{4}$, proper $\frac{5}{4}$, improper

$1\frac{1}{4}$, mixed number

2.06 $\frac{9}{5} = 1\frac{4}{5}$ $\frac{6}{8} = \frac{3}{4}$ $\frac{8}{7} = 1\frac{1}{7}$ $\frac{9}{12} = \frac{3}{4}$

2.07 Three-fifths plus seven-fourths equals two and seven-twentieths.

2.08 19 47 R1 31 R2 34 99

2.09 37

SELF TEST THREE

3.01 a. .415 .36 .807 .2
b. .05 .587 .312 .38
c. .488 .220 .4823 .006

3.02 a. .74 Two-tenths plus fifty-four hundredths equals seventy-four hundredths.

b. .589 Eight hundred forty-nine thousandths minus twenty-six hundredths equals five hundred eighty-nine thousandths.

3.03 1.107 1.287 1.60 1.378

3.04 <, =

3.05 10, $\frac{1}{5} = \frac{2}{10}$ 6, $\frac{2}{3} = \frac{4}{6}$

3.06 1 1 $\frac{4}{9}$ $\frac{1}{8}$

SELF TEST FOUR

4.01 a. one-half
b. seven-sixteenths
c. twenty-four and seven-eighths
d. eight-thirds

4.02 a. $\frac{4}{8}$
b. $\frac{1}{2}$
c. $51\frac{5}{9}$
d. $\frac{9}{5}$

4.03 a. $13\frac{3}{5}$ $5\frac{1}{3}$ $16\frac{5}{6}$
b. $10\frac{4}{15}$ $22\frac{2}{15}$ $7\frac{1}{14}$
c. $6\frac{2}{3}$ $5\frac{2}{5}$ $19\frac{3}{8}$

4.04 a. yes rounds to 100
b. no multiplied instead of dividing
c. no rounds to 500
d. no divided instead of subtracting
e. no rounds to $20.00
f. no divided instead of adding
g. yes rounds to 2,000
h. no subtracted instead of multiplying

4.05 2,075 43,914 143,727 155,556

SELF TEST FIVE

5.01 a. 3, 15, 17
b. 5, 7, 23

5.02 a. third
b. 6, 12, 18, 24

5.03 a. $\frac{5}{10}$ b. $\frac{10}{10}$

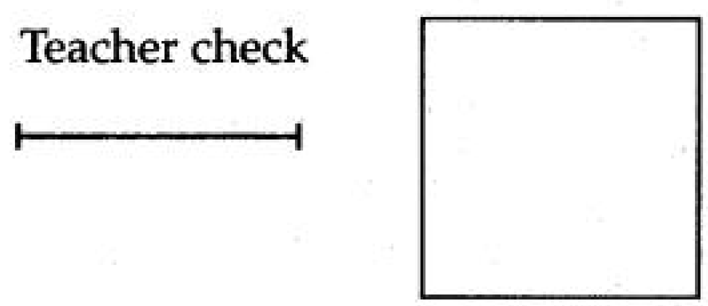
5.04 a. three hundred four thousand, five hundred fifty-two
b. 322,065

5.05 a. 36 4
b. 2,000 16

5.06 Suggested answers
milli, centi

5.07 a. mile meter
b. pound gram
c. gallon liter

5.08 Teacher check



5.09 a. 28 linear feet b. 48 square feet

5.010 a. 1,225 b. MCLXIV

5.011 a. 62¢
b. $2.59

5.012
$$18 = N + (4 + 6 + 3)$$
$$18 = N + 13$$
$$18(-13) = N + 13(-13)$$
$$5 = N$$

N = 5 cupcakes

SELF TEST ONE

1.01 a. 4
b. 5
c. 6
d. 2
e. 1
f. 3

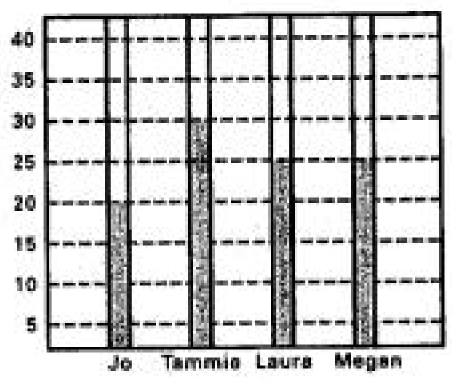
1.02 a. - d. Teacher check
e. Total the numbers and divide by the number of groups.
f. Teacher check
g. Estimation helps us decide whether we have a logical answer.

1.03 a. - f. Teacher check.
g. Some groups are too large to count. A random sample represents the group and is easier to count. It is more exact than predicting.

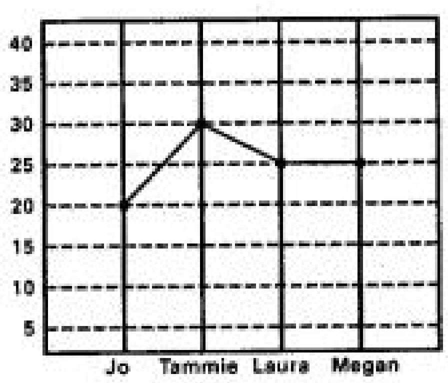
SELF TEST TWO

2.01 a. 2
b. 4
c. 1
d. 3

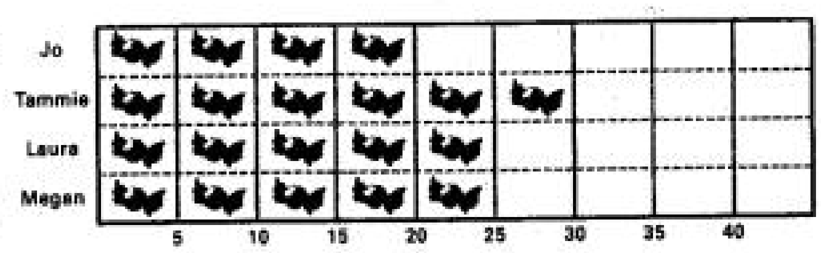
2.02 a.



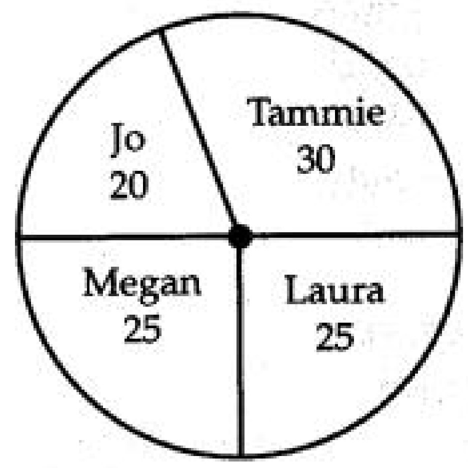
b.



c.



d.



SELF TEST THREE

3.01 a. 6 b. 3
c. 2 d. 1
e. 5 f. 8
g. 4 h. 7

3.02 9,415 1,879 6,037 1,456

3.03 9,264 251,328 53 R3 76 R2

3.04 a. $\frac{8}{10}$, eight tenths
b. .46 forty-six hundredths
c. .542, $\frac{542}{1{,}000}$

3.05 two and fifty-nine hundredths
sixty-three and seven tenths

3.06 .957 .816 .413 .307

SELF TEST FOUR

4.01 a. nine-twelfths
b. 9, 12

4.02 $\frac{5}{8}, \frac{7}{8}, 1\frac{2}{8}, 1\frac{4}{8}, 2\frac{1}{8}, 3\frac{3}{8}$

4.03 $\frac{2}{7} = \frac{6}{21}$
$\frac{12}{18} = \frac{2}{3}$

4.04 $=, \neq$
$<, <$

4.05 1, 2, 3, 4, 6, 12
1, 2, 4, 8
4

4.06 4, 8, 12, 16, 20, 24
12, 24, 36, 48, 60, 72
12

4.07 $\frac{15}{12}, \frac{5}{9}, 1\frac{2}{8}$

4.08 a. $\frac{6}{9} = \frac{2}{3}$ b. $\frac{15}{8} = 1\frac{7}{8}$ c. $1\frac{2}{4} = 1\frac{1}{2}$

4.09 a. 1 0 $6\frac{1}{4}$
b. $4\frac{7}{10}$ $16\frac{4}{9}$ $14\frac{11}{24}$

SELF TEST FIVE

5.01 a. 3 plane
b. 1 solid
c. 4 plane
d. 5 solid
e. 2 solid

5.02 a. line segment
b. end point
c. angle
d. ray
e. line

5.03 a. 16 linear yards
b. 12 square yards

5.04 \$235.00 = (\$72.00 + \$41.00 + \$55.00) + N
\$235.00 = \$168.00 + N
\$235.00(–\$168.00) = \$168 + N(–\$168.00)
\$67.00 = N

N = \$67.00

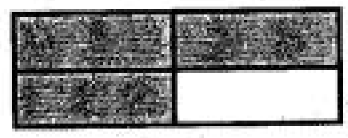
5.05 10,000 pounds

5.06 700 cars

5.07 90 rocks

5.08 a. gram
b. meter
c. liter

Mathematics 401
LIFEPAC TEST

1. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9,
2. addend
3. addend
4. 754
5. sum
6. minuend
7. subtrahend
8. 137
9. difference
10. 7,065
11. five thousand, sixty-three
12. 1,206
13. 7,000 + 0 + 80 + 3
14. 12, – 4
15. two, second
16. Suggested answer.
    6 dollars 1 quarter 1 dime 4 pennies
    6 dollars 3 dimes 9 pennies
17. 3
18. 2
19. 2, 3
20. three-fourths
21. $\frac{7}{8}$
22. 
23. a. 10, 15, 8, 11, 14, 12
    b. 7, 3, 4, 9, 9, 7
    c. 27, 80, 8, 9, 28, 20
24. 113, 922, 10,625, 1,701
25. 59, 35, 201, 228

Mathematics 402
LIFEPAC TEST

1. <, ≠
2. 60, 900
3. 391
   200 + 200 = 400
4. 255
5. 1,806
6. 2, 3
7. three-ninths
8. $\frac{4}{8}$, $\frac{5}{9}$, $\frac{2}{5}$, $\frac{4}{15}$
9. Seven-eighths minus three-eighths equals four-eighths.
10. $\frac{15}{25}$
11. 3, 4, 5, 6
12. no, place holder
13. 68
14. $\frac{8}{12}$
15. 6, + one
16. 70,000 + 5,000 + 800 + 0 + 3
17. thirty thousand, five hundred twenty
18. 3
19. 9
20. 56,408
21. 11,540
22. 6,196
23. 219
24. 72, 42, 15, 32
25. 21, 64, 12, 45

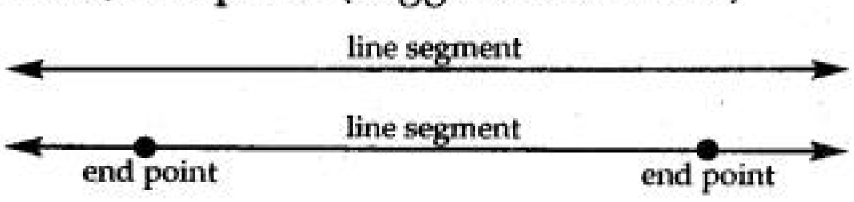
Mathematics 403

LIFEPAC TEST

1. 40, 600, 1,000
2. 3,877
   6,000 – 3,000 = 3,000
3. 0
   0, 5
   even
4. multiplicand
   multiplier
5. 581
   product
6. 5
7. $\frac{1}{7}, \frac{2}{7}, \frac{3}{7}, \frac{4}{7}, \frac{5}{7}, \frac{6}{7}, \frac{7}{7}, \frac{8}{7}, \frac{9}{7}$
8. >
9. $\neq, =, =$
10. $$\begin{aligned} N + 34 + 63 &= 249 \\ N + 97 &= 249 \\ N + 97(-97) &= 249(-97) \\ N &= 152 \end{aligned}$$
11. 52
12. Teacher check
    1 quarter, 6 dimes or
    2 quarters, 2 dimes, 3 nickels
13. $\frac{5}{12}, \frac{3}{12}, \frac{4}{12}$
14. =
15. >
16. 400,000 + 0 + 8,000 + 600 + 30 + 2
17. six hundred eighty-two thousand, fifty-two
18. 3
19. >
20. 840,625
21. 15,082
22. 2,853
23. 247
24. 1,540
25. 5,445

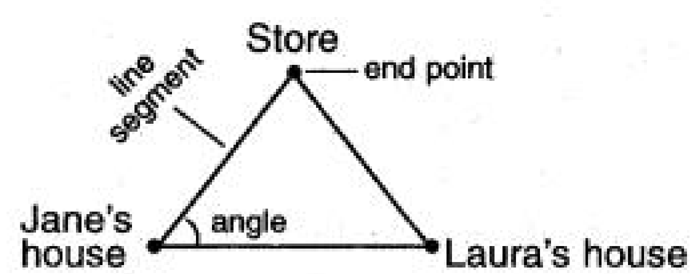
Mathematics 404

LIFEPAC TEST

1. a. 3
   b. 1
   c. 5
   d. 4
   e. 2
   f. 8
   g. 7
   h. 6
2. flat shape
3. 2
4. plate, picture (suggested answers)
5. desk, computer (suggested answers)
6. 

7. 

8. 

9. line
10. 2 inches, 3 inches
11. 

12. oval, octagon, diamond
13. sphere, cone, pyramid
14. minus (–)

LIFEPAC TEST 404 (cont.)

15. $\frac{5}{8}, \frac{4}{15}, \frac{16}{18}, \frac{1}{7}$
16. 6,801
17. 8,435
18. 1,787
19. 590
20. 304
21. 66
22. 300
23. 1,140
24. 2,524
25. 3,087

Mathematics 405

LIFEPAC TEST

1. a. 7 b. 7 c. 7 d. 7
2. a. 12 b. 12 c. 12 d. 12
3. a. 54
   b. 9 x 6 = 54
   c. 54 ÷ 6 = 9
   d. 54 ÷ 9 = 6
4. a. 35
   b. 7 x 5 = 35
   c. 35 ÷ 5 = 7
   d. 35 ÷ 7 = 5
5. a. 24
   b. 3 x 8 = 24
   c. 24 ÷ 8 = 3
   d. 24 ÷ 3 = 8
6. 12, 2, 4
7. feet or inches
   cups or ounces
8. P = 2 x L + 2 x W
   P = (2 x 7) + (2 x 4)
   P = 14 + 8
   P = 22 feet
9. A = L x W
   A = 7 x 4
   A = 28 square feet
10. 24
    LXVIII
11. N = 11
    N = 15
12. N = (4 x 12 + 3 x 12) – 76
    N = (48 + 36) – 76
    N = 84 – 76
    N = 8 cookies
13. 108 inches
14. miles
15. 294
16. 1,593
17. 7,371
18. 12,062
19. 4,279
20. 4,137
21. 1,771
22. 2,576
23. 4, 5, 9, 7
24. 7, 5, 9, 7
25. 8, 5, 9, 2

Mathematics 406

LIFEPAC TEST

1. a. $7 \times 3 = 21$
   b. $3 \times 7 = 21$
   c. $21 \div 3 = 7$
   d. $21 \div 7 = 3$

2. 1, 2, 3, 5, 7
   4, 6, 8, 9

3. 1, 2, 3, 4, 6, 12

4. 18, 8, 9, 36

5. 3 R4, 5 R6, 4 R4, 5 R1

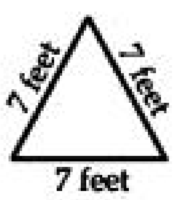
6. $\frac{5}{6}, \frac{6}{5}$

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

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

9. $6 \times 21 = 126$, $18 \times 7 = 126$

10. $13\frac{5}{8}, 2\frac{5}{12}$

11. 

   a. 3
   b. 3
   c. 3
   d. 21 feet

12. 3

13.
$$\begin{aligned} 45 &= 9 + 20 + N \\ 45 &= 29 + N \\ 45(-29) &= 29 + N(-29) \\ 16 &= N \\ 45 &= 9 + 20 + 16 \end{aligned}$$

14. a. 36, 4
    b. 2,000, 12

15. 10,197; 1,071

16. 319, 221

17. 12, 18, 24, 30, 36, 42, 48, 54
    24, 36, 48, 60, 72, 84, 96, 108

18. 7, 5, 99, 72

19. a. three-fourths
    b. eighteen and seven-twelfths
    c. twenty-seven multiplied by three equals eighty-one
    d. eighty thousand, three hundred sixty

20. 536

21. 3,941

22. 3,640

23. 22,944

24. 20,412

25. cylinder, cone, cube, pyramid

Mathematics 407

LIFEPAC TEST

1. 2,226

2. 2,345

3. 33,337

4. 28,152

5. 6,140

6. $1\frac{1}{4}, 3\frac{3}{5}, 2\frac{3}{5}, 2\frac{6}{9}$ or $2\frac{2}{3}$

7. $\frac{1}{4}, \frac{1}{3}, \frac{4}{9}, \frac{3}{4}$

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

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

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

11. 15

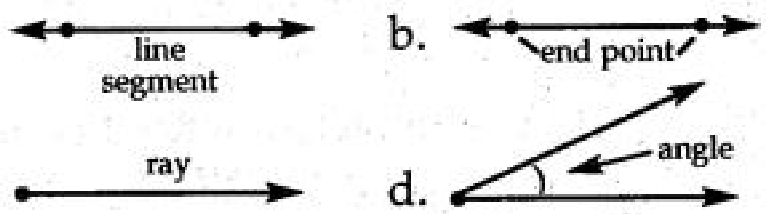
12.
$$\begin{array}{r} \$65.32 \\ -\ 48.06 \\ \hline \$17.26 \end{array}$$

LIFEPAC TEST 407 (cont.)

13. subtract, 5, 123
    check: 128 = 123 + (13 – 8)

14. a. 0
    b. even

15. a. b. c. d.



16. 40, 500, 3,000

17. a. six hundred three thousand, four hundred twenty-one
    b. 822,350

18. 32 linear yards

19. 48 square yards

20. 1368¢ or $13.68

21. Teacher check
    2, 4, 5, 10, 11, 22, 23, ...

22. 7, 28, 56, 35, 0, 42, 14, 49, 63, 21

23. 6, 24, 48, 30, 0, 36, 12, 42, 54, 18

24. 9, 36, 72, 45, 0, 54, 18, 63, 81, 27

25. 8, 32, 64, 40, 0, 48, 16, 56, 72, 24

Mathematics 408

LIFEPAC TEST

1. 4, 68, 17

2. 47

3. 23

4. 29 R4

5. 72

6. 8, 6, 30, 12

7. $\frac{6}{10}$, $\frac{2}{6}$, $\frac{16}{28}$, $\frac{15}{27}$

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

9. $\frac{1}{8}$

10. $\frac{5}{12}$

11. 10
    meter, liter, gram

12. Suggested answers.
    milli, centi, deci, kilo

13. a. 32°, 0°
    b. 212°, 100°

14. a. = b. =
    c. > d. <

15. N = (5 x 27) + (5 x 30) + (8 x 22)
    N = 135 + 150 + 176
    N = 461 cm

16. 4, 4

17. 10,242

18. 1,651

19. 4,671

20. 4,822

21. 46,870

22. 89,640

23. 275,520

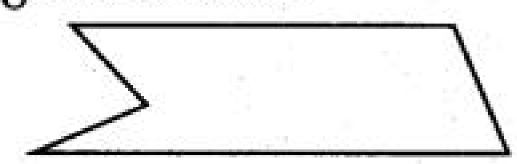
24. 89

25. Three-fourths plus five-eighths equals one and three-eighths.

Mathematics 409

LIFEPAC TEST

1. fractions
2. a. .456 b. .553
3. $\frac{75}{100}$, seventy-five hundredths
4. .84, eighty-four hundredths
5. .88
6. .71
7. $\frac{4}{5}$
8. 12
9. $\frac{1}{2}$
10. $1\frac{5}{8}$
11. 21,775
12. 121,483
13. 71 R2
14. 11 R1
15. $\frac{6}{15}$, $\frac{35}{40}$
16. 40
17. <, >
18. a. no, subtracted instead of adding
    b. no, rounds to $17.00
19. a. 16, 1
    b. 12, 16
20. Suggested answer: gram, liter, meter
21. 28 linear yards
22.. 45 square yards
23. Suggested answer.



24. a. CCCLXXVI b. MDLIV
25. N = 109

Mathematics 410

LIFEPAC TEST

1. a. 7
   b. 6
   c. 10
   d. 1
   e. 8
   f. 2
   g. 3
   h. 9
   i. 5
   j. 4
2. a. 11,685 b. 5,999
   c. 120,840 d. 92 R3
3. a. $21\frac{13}{24}$ b. $6\frac{7}{15}$
   c. $20\frac{1}{9}$ d. $18\frac{5}{12}$
4. .822, .622, .588, .346
5. a. 
   b. 84 square yards
   c. solid
   d. 140 pages
   e. 23 +1, x2
   f. N = 447
   g. 2 cups
   h. 237 kilometers