MATH ANALYSIS SHEET

Each question in the Diagnostic Test directly corresponds with a section in this book, represented in the table below. Under the column marked "X," mark each test question you incorrectly answered. The table will tell you the problem type, means of identification, and chapter/section through which you can learn to more effectively approach the problem.

For example, if you incorrectly answered question 33 in the Diagnostic Test, you will see that you have room for improvement when it comes to approaching word problems, specifically questions dealing with age. Study Section 5.5, and you will learn to confidently and efficiently solve any problem resembling "5 years ago, John's age was..."

Take note of the key words in the "Identification" column. You already know the basic math; you just have to know when to apply it!

X	#	Problem Type	Identification	Section
Bird's-Eye View				
	1	Factoring	Factorable	1.1
	2	Addition/Subtraction	System of equations	1.2
	3	Multiplication/Division	Can you divide the whole?	1.3
	4	Breaking up/Reuniting	Breakable/combinable	1.4
	5	Compare & Transform	Similar expressions	1.5
Numbers & Arithmetic				
	6	Working without Calculation	Long list of numbers	1.6
	7	Integers/Negative/Positive	Negative/Positive integers	2.1
	8	Even/Odd, Divisibility/Multiples	Even/odd, divisible/multipliable	2.2
	9	Prime Factorization	Prime factors	2.3
	10	Fractions/Decimals	Comparing fractions	2.4
	11	Max/Min Integer Search	Max/min possible integers	2.5
	12	Digit Search	"AB + CD = EFG"	2.6
Algebraic Operations				
	13	Basic Algebra Concept/Equation	Any algebraic operations	3.1
	14	Polynomial Product/Factoring	"$A^2 + b^2 + 2ab = (a + b)^2$"	3.2
	15	Find a Variable in Terms of Others	"x in terms of y and z?"	3.3
	16	Inequality Operation	"$2 < x < 7$"	3.4
	17	Exponents	"$2^n + 2^n =$ or 16^n"	3.5
	18	Roots and Radicals	"Compare 2 and 1.5"	3.6
	19	Linear Functions	"$2x + 3y = 6$" and (x,y)	3.7
	20	General Functions & Graphs	"If the graph f(x)… and g(x)…"	3.8
	21	Quadratic / Higher Order Fn, Eqn.	Quadratic: $ax^2 + bx + c$	3.9
	22	Absolute Value Fn, Eqn, Inequl.	"$y = |x + 2|, |x -2| < 0$"	3.10

X #	Problem Type	Identification	Section

Special Types of Algebraic Problems

	#	Problem Type	Identification	Section
☐	23	E.T.(Special Symbol)	Strange symbols	4.1
☐	24	Division/Remainder	"When divided by x, remainder is y"	4.2
☐	25	Sequence/Pattern Search	"2, 4, 6, ... n"	4.3
☐	26	Logic/Set/Counting	Logic, "{2, 3, 5, }, how many #'s"	4.4
☐	27	Number of Cases/Probability	Combinations, probability	4.5
☐	28	Statistics: Mean, Median, and Mode	Mean, median and mode	4.6
☐	29	Statistics: Data Interpretation	Charts and graphs	4.7

Word Problems

	#	Problem Type	Identification	Section
☐	30	Conversion, Simple Word Problems	"2 more than John's...."	5.1
☐	31	One Variable Approach	"Let x = the unknown, then..."	5.2
☐	32	Consecutive Integer	Consecutive integers	5.3
☐	33	Digit word	Tens' and units' digits	5.4
☐	34	Age	"5 years ago, John's age was ..."	5.5
☐	35	Proportion	"If a takes b, then c takes...?"	5.6
☐	36	Ratio	"A : B : C"	5.7
☐	37	Average	"If the average of x, y and z is..."	5.8
☐	38	Percent – Direct Conversion	"30 is what % of..."	5.9a
☐	39	Percent – Increase/Decrease	Increased or decreased by %	5.9b
☐	40	Motion	Time, rate and distance	5.10
☐	41	Mixture – Coin/Stamp / Average Price	"How many of each kind…?"	5.11a
☐	42	Mixture – Solution	% solution	5.11b
☐	43	Work – Multi-Production	"3 men take 5 days to finish ½ a job"	5.12a
☐	44	Work – Combined Work	"John and Mary work together"	5.12b

Special Types of Word Problems

	#	Problem Type	Identification	Section
☐	45	Set Word Problems	"X belongs to A, B, or both groups"	6.1
☐	46	Fractions in Word Problems	"used 1/3 of the remainder…"	6.2
☐	47	Utility/Taxi fare	Flat rate of $x and after that	6.3
☐	48	Cost/Production Comparison	"$4 for 5 products"	6.4

Geometry

	#	Problem Type	Identification	Section
☐	49	Angle Relations	Angles, triangles, interior angles	7.1
☐	50	Parallel Lines	Line L_1 // Line L_2	7.2
☐	51	Types of Triangles	Isosceles and equilateral	7.3
☐	52	Right Triangle Ratio/Pythagorean	Right triangle and length ratios	7.4
☐	53	Inequality in Triangles	Side of triangle c > d, angle C > D	7.5
☐	54	Perimeter/Circumference	Perimeter/ circumference	7.6
☐	55	Various Polygons/Features & Area	Area of a parallelogram, rectangle	7.7
☐	56	Bird's-Eye View in Area & Perimeter	"Find the perimeter or area"	7.8
☐	57	Circle & Related Topics	Anything involving circles	7.9
☐	58	Surface Area & Volume	Surface area or volume	7.10
☐	59	Coordinate Geometry	Point A(x, y) and distance AB/slope	7.11
☐	60	Counting/Min/Max Search: Geometry	"How many regions can be made…"	7.12