Scope & Sequence	Ma	th [Эер	artr	nen	t													
Reviewed September, 2013																			
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								(Ac	(e)	9			ular	ance)) e.			PC)	
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		ade	ade 2	ade 3	Grade 4	Grade 5	Grade 6	-Ali	Jebra 1	lebr	Jebr	эшо	ebr	ebr	leg	ite (tist	-Cal	
	KS	Gra	Gra	Gra	Gra	Gra	Gr	Pre	Alg	Alg	Alg	Ge	Alg	Alg	ပိ	Fin	Sta	Pre	Cal
I. Numbers/Numeration																			<u> </u>
A. Whole Numbers																			ļ
1. Recognizing/Writing	K5		2	3	4	5													-
2. Comparing	K5		2	3	4	5													—
3. Ordering	K5	1	2	3	4	5													
4. Recognize Pattern/sequence	K5	_	2	3	4	5													
5. Counting	K 5		2	3	4	5													
6. Identifying Place Values/Comas		1	2	3	4	5													
7. Rounding		1	2	3	4	5													
8. Understanding Multiples		1	2	3	4	5													
Writing Odd/Even Numbers Using Ordinal Numbers	K5		2	3	4	5													
11. Reading Number Words	K5		2	3	4	5													
12. Recognizing Roman Numbers	NJ	1	2	3	4	5													
12. Recognizing Roman Numbers				5	-	5													
B. Positive Rational Numbers																			
Using Decimals		1	2	3	4	5	6												
Comparing Decimals						5	6												
Labeling on Number Line						5	6												
Rounding to nearest cent						5													
5. Writing decimals as fractions					4	5	6												
6. Identifying fractional parts of	К5	1		3	4	5													
numbers	KS	-																	
7. Writing remainders as fractions				3	4	5													<u> </u>
8. Recognizing equal fractions				3	4	5	6												ļ
9. Reducing fractions				3	4	5	6												ļ
10. Understanding proper/improper fractions					4	5	6												
11. Finding least common																			
denominators					4	5	6												
12. Converting fractions to decimals						5	6												
13. Using percents						5	6												
C. Real																			
Translate verbal expressions to							6	PA	Aa	Ab	A1	G	a2	A2	CA			PC	С
algebraic expressions 2. Evaluate expressions containing																			
variables							6	PA	Aa	Ab	A1	G	a2	A2	CA				
Use number line for ordering							6	DΛ	Λ	۸h	A1	G	22	۸2	CA				
integers							U	PA	Aa	ΑD	AI	9	az	AZ	CA				
4. Use symbols of expenents and roots								PA	Aa	Ab	A1	G	a2	A2	CA				
4. Use symbols of exponents and roots5. Write equivalent fractions, decimals,																			
%							6	PA	Aa	Ab	A1	G	a2	A2	CA				
6. Learn symbols of probability							6	PA	Aa	Ab	A1	G	a2	A2	CA			PC	С
7. Understand concept and symbols of											A1		a2						
absolute value								TA	7.5(5)										-
8. Arrange polynomials by degree										Ab	A1	G	a2	A2					

O Define and industry making land	1			1											1		1 1	
9. Define and indentify rational and								PA	Aa	Ab	A1	G						
irrationals numbers 10. Create a matrix and name it using																		
its dimensions								PA	Aa	Ab	A1		a2	A2	CA	FΙ	PC	
11. Write the identity matrix for any																		
square matrix														A2	CA	FΙ	PC	
12. Represent numbers in scientific								D A		All				4.0	C A		DC	
notation								PA		Ab	A1			A2	CA		PC	
13. Identify the characteristic and the														A2	CA		PC	
mantissa of a logarithm														AZ	CA		FC	
D. Complex																		
1. Define the imaginary number "i"													a2	A2	CA		PC	
2. Identify the real and imaginary part															CA		PC	
of a complex number													az	AZ	CA		FC	
3. Express complex numbers in polar																	PC	
form																		
E. Other																		
3. Find common logarithms and														A2	CA		PC	С
antilogarithms																		0
4. Find natural logarithms of numbers														A2	CA		PC	С
II. Operations																		
A. Addition																		
1. Memorizing Meaning/Basic Fasts	K5	1	2	3	4	5												
2. Add; no renaming	K5	1	2	3	4	5												
3. Add; 1 renaming		1	2	3	4	5												
4. Add; 3 or more addends		1	2	3	4	5												
5. Add; more than one renaming		1	2	3	4	5	6											
6. Estimating			2	3	4	5	6											
7. Checking				3	4	5	6											
8. Adding fractions				3	4	5	6											
Adding mixed numbers				3	4	5	6											
10. Adding with uncommon				9	_													
denominators.					4	5	6											
11. Adding decimals					4	5	6											
B. Subtraction																		
Memorizing Meaning/Basic Fasts	K 5	1	2	3	4	5												
Subtract; no renaming	K5	_	2	3	4	5												
3. Subtract; 1 renaming	KS	1	2	3	4	5												
4. Subtract; more than 1 renaming		1	2	3	4	5												
5. Subtract with Zero		1	2	3	4	5	6											
			2	3		_	6											
6. Estimating differences					4	5	_											
7. Checking				3	4	5	6											
8. Sub. Fractions with barrowing				3	4	5 -	6											
9. Barrowing w/ uncommon Denom.				3	4	5	6											
10. Subtracting decimals				3	4	5	6											
C. Multiplication																		
Memorizing Meaning/Basic Fasts		1	2	3	4	5												
2. Understanding Factors		1	2	3	4	5												
3. Multiplying by 1 digit factor				3	4	5												
				3	4	5											1 T	
4. Using 4 Ways to show mult. Facts																	$\vdash \vdash$	
5. Carrying				3	4	5											\sqcup	
6. Using 6 ways to prove				3	4	5												

7 Multoving monov			3	4	5													
7. Multpying money			3	4	5													
8. Regrouping Factors			_															
9. Multiply Two-digit Factors			3	4	5													
10. Understanding Partial Products			3	4	5													
11. Multiply 3 digit times 2 digit factors			3	4	5													
12. Checking				4	5													
5					5													
13. Multiplying by 10 and 100				4	_		DA											
14. Multiplying by 3 digit factors				4	5	6	PA											
19. Multiplying Fractions				4	5	6	PA											
20. Multiplying Fraction and Whole				4	5	6	PA											
21. Multiplying Fractions and Mixed numbers				4	5	6	PA											
						6	DA											
22. Doing Cross Multiplication					5	6	PA	Δ =										
23. Multiplying Decimals					5	6		Aa		0.4								
24. Find the square of a number					5	6	PA	Aa	Ab	A1								
25. Find the cube and higher powers of numbers					5	6	PA	Aa	Ab	A1								
numbers																		
D. Division																		
D. Division		2	2	4	-													
Memorizing Meaning/Basic Fasts		2	3	4	5													
2. Divide with One digit Divisor			3	4	5													
Use Five steps for division			3	4	5													
4. Checking			3	4	5													
5. Finding Remainders			3	4	5													
6. Dividing Money			3	4	5													
7. Short Division			3	4	5													
8. Divide with Two Digit Divisors			3	4	5													
9. Estimating Quotients			3	4	5													
10. Estimating 2 digit divisors				4	5													
11. Divide with 3 Digit Divisors					5													
12. Divisibility Rules						6	PA					a2						
13. Dividing Fractions				4	5	6												
14. Dividing Decimals				4	5	6												
15. Factoring				4	5	6	PA	Aa					A2	CA			PC	С
16. Finding Common Factors								AGI				22		CA			PC	
						6	PA	Aa		A1		az	A2				PC	C
17. Finding Greatest Common Factor						6		Aa		A1				CA				C
18. Finding Least Common Factor						О	PA						AZ	CA			PC	C
19. Find the square root of a number								Aa	Ab	A1	G	a2	A2	CA			PC	C
20. Find the cube root and higher roots																		
of numbers.											G	a2	A2	CA			PC	С
E. Operations with algebraic																		
expressions																		
1. Add, subtract, multply, divide and							РΔ	Aa	Δh	Δ1		a2	Δ2	CA			PC	С
simplify monomials.							LA	AG	AB	.A.E		G.E		3			. •	_
2. Add, subtract, multiply and simplify							PA	Aa	Ab	A1		a2	A2	CA			PC	С
polynomials																		<u> </u>
3. Factor polynomials 4. Divide polynomials using long							PA		Ab			a2					PC	С
division and synthetic division.							PA	Aa	Ab	A1		a2	A2	CA			PC	C
5. Simplify complex fractions														CA			PC	С
5. Simplify complex fractions														CA			TC	-
E Calculator																		
F. Calculator 1. Use a calculator to find powers and																		
estimate roots of numbers								Aa	Ab	A1		a2	A2	CA	FΙ	S	PC	С
Southate 100to of Hambers	1	ı		ı	ı	ı	1											

2. Input and use a given program on a								a2	A2	CA	FΙ	S	PC	С
programmable, graphing calculator														
G. Trigonometry														
1. Use a calculator to find values of									4.0				DC	_
trigonometric functions									A2	CA			PC	С
2. Use right triangles to find							G		A2	CA			PC	С
trigonometric values							9		AZ	CA			ГС	
Verify trigonometric identities using									A2	CA			PC	С
various methods										0, 1				
4. Find values of sine and cosine									A2	CA			PC	С
involving sum and difference formulas									AZ	CA			PC	
5. Find values of sine and cosine														
involving half- and double-angle									A2	CA			PC	С
formulas										.				Ĭ
H. Exponents/Roots														
1. Add, subtract, multiply, divide and					Ala	A-I	(- 2	42				DC	_
simplify radical expressions					AD	A1	G	a2	A2	CA			PC	С
2. Add, subtract, multiply, divide and					۸h	A1		2	۸2	CA			PC	С
simplify complex numbers					AD	AL		az	AZ	CA			FC	
3. Add, subtract, multiply, divide and					Ab	A1		a2	A2	CA			PC	С
simplify rational expressions										<u> </u>				
4 Add, subtract, multiply and divide									A2				PC	C
using scientific notation														
5. Rationalize the denominator of a					Δh	A1		a 2	A2	CA			PC	С
fraction containing a radical expression					AB			G.E						
5. Simplify expressions containing													D 0	_
rational exponents									A2	CA			PC	С
6. Simplify radicals containing negative					Ab	A 1			A2	CA			PC	С
radicands					AD	AT			AZ	CA			ГС	
7. Simplify rational expressions														
containing complex numbers in the									A2	CA			PC	C
denominator 8. Simplify radicals having various														
indices									A2	CA			PC	C
9. Use the properties of exponents					۸b	A1		22	A2	CA			PC	
9. Ose the properties of exponents	-				AD	AT		az	AL	CA			FC	
I. Vectors	-													
1. Vectors														
1. Add and subtract vectors graphicallly													PC	
2. Add, subtract, multiply, and find the													PC	
magnitude of vectors algebraically														
3. Add and subtract vectors in three-													PC	
dimensional space													10	
4. Find the magnitude of vectors in													PC	
three-dimensional space 5. Find the inner and cross products of														
two vectors													PC	
6. Determine whether two vectors are	+													
perpendicular													PC	
7. Find the product and quotient of													DC	
complex numbers in polar form													PC	
8. Find powers and roots of complex														
numbers in polar form using DeMoivre's													PC	
theorem		_												
			ļ											
J. Matrices														
1. Add and subtract matrices				Aa	Ab	A1			A2	CA	FΙ		PC	

as of 1/4/2014

2. Perform scalar multiplication of									Λ.	۸h	A 1			42	CA	ET	DC	
matrices										Ab				A2	CA	FΙ	PC	
3. Perform matrix multiplication									Aa	Ab	A1			A2	CA	FΙ	PC	
Evaluate 2nd and 3rd order determinants														A2	CA	FΙ	PC	
determinants																		
5. Find inverses of 2nd order matrices														A2	CA	FΙ	PC	
K. Calculus																		
1. Find the derivative of an algebraic																		
function by using the definition of a																		С
derivative																		
2. Apply formulas to find the derivative of algebraic, trigonometric,																		
exponential, and logarithmic functions																		С
and their inverses.																		
3. Apply formulas to find the derivative																		
of the sum, product, quotient, inverse, and composite (chain rule) of																		С
elementary functions.																		
4. Find the derivative of an implicitly																		
defined function.																		С
5. Find the higher order derivatives of																		
algebraic, trigonometric, exponential, and logarithmic functions.																		С
6. Use logarithmic differentiation as a																		
technique to differentiate																		С
nonlogarithmic functions.																		
7. Compute an approximate value for a																		
definite integral using Riemann Sums,																		С
Trapezoidal Rule and Simpson's Rule																		
L. Other		-																
Decompose a rational expression into partial fractions																	PC	С
mes partial rections																		
III. Equations/ Expressions/ Functions																		
A. General																		
Writing a Number Sentence		1	2	3	4	5	6		Aa									
2. Finding Missing addends		1	2	3	4	5	6		Aa									
3. Finding Missing Factors			2	3	4	5	6	PA		Ab								
4. Understanding Order of operation							6	PA		Ab			a2	A2	CA		PC	
5. Recognize Inequalities			2	3	4	5	6	PA		Ab								
6. Finding Missing minuends			2	5	4	5	6	PA PA		Ab Ab		G						
7. Using properties of equality 8. Translate word expressions into						5	0											
mathematical expressions								PA	Aa	Ab	A1	G	a2	A2	CA		PC	С
Translate word sentences into								PΔ	Aa	Δh	Δ1	G	a2	Δ2	CA		PC	С
equations		-																
10. Use proportions to solve problems 11. Use proportions and equations to								PA		Ab		G		A2			PC	С
solve percent problems								PA	Aa	Ab	A1	G	a2	A2	CA		PC	С
12. Solve equations containing absolute								PA	Λa	Λh	A1	G	a 2	A2	CA		PC	С
value																		
13. Use the properties of inequalities 14. Identify and solve compound								PA		Ab		G	a2	A2	CA		PC	С
sentences using "and" and "or"									Aa	Ab	A1		a2	A2	CA		PC	
15. Solve absolute value equations and		1						DA	Aa	۸h	۸1		22	۸2	CA		PC	
inequalities	1	1	I	l	l		Ì	لفاسا	Late		للتفا	i	ŒΖ	14.74	CA		TC	

		 	-												
16. Determine whether a given relation						Δa	Ab	Δ1		a2	A2	CA		PC	С
is a function	\vdash					7.6	AB	7.1		G.L		5			
17. Identify the domain and range of					PA	Aa	Ab	A1		a2	A2	CA		PC	С
any relation or function						7.0									
18. Identify an odd function and an										a2	A2	CA		PC	С
even function 19. Find the values of functions for	\vdash			-											
											A2	CA		PC	С
given elements of the domain 20. Find the composition of functions		 													
											A2	CA		PC	C
algebraically and graphically. 21. Determine the inverse of a relation	\vdash														
or a function											A2	CA		PC	C
22. Find the inverse of a function															
algebraically and graphically.											A2	CA		PC	C
23. Explain how composition of															
functions and finding the inverse of a															
function affects the domain and range											A2	CA		PC	
of the functions.															
B. Linear															
Solving linear equations															
a. Mentally				6	PA	Λ ¬	Ab	A 1	G	a2	42	CA		PC	
,	\vdash			U	-								E-V		
b. Substitution	\vdash				PA			A1	G			CA		PC	
c. Inverse operations	\vdash			6	PA	_	Ab			a2	A2	CA	FΙ	PC	
2. Solve multi-step linear equations					PA	Aa	Ab	A1							
						۸۵	Ab	A1		22	A2	CA	FΙ	PC	С
a. Using properties for simplification						Aa	AD	AL		az	AZ	CA	3	FC	
b. Equations with variables on both						Δа	Ab	A1		a2	Δ2	CA	FΙ	PC	С
sides	\vdash					Ad	AD	7.		uz	AE	G,			
Solving system of equations															
a. Graphing						Aa	Ab	A1		a2	A2	CA	FΙ	PC	C
b. Substitution						Aa	Ab	A1		a2	A2	CA	FI	PC	С
c. Elimination						Aa	Ab	A1		a2	A2	CA	FI	PC	С
d. Using Cramer's rule										a2				PC	C
4. Find the distance between two															
points						Aa	Ab	A1	G	a2	A2	CA		PC	C
5. Find the slope of a line through two															
points						Aa	Ab	A1	G	a2	A2	CA		PC	C
6. Prove geometric theorems involving															
slope, distance, and midpoints									G						
analytically															
7. Write linear equations in standard														D.	
form						Aa	Ab	Al		aZ	A2	CA	FT	PC	
8. Determine the slope and intercepts						Α-	AL	A1	G	S	A 2	CA	FΙ	PC	
of a line						Aa	AD	AL	9	aZ	AZ	CA	4	PC	С
9. Write linear equations using point-						Λ-	Ab	A 1		,	A 2	CA		PC	
slope form						Ad	AD	AI		aZ	AZ	CA		PC	
10. Write the slope-intercept form of an						Δа	Δb	A1	O	a 2	Δ2	CA		PC	_
equation of a line						Aa	AD	ΑT	9	az	AZ	S		-	
11. Write equations of parallel and						Δа	Δh	A1	G	a2	Δ2	CA		PC	
perpendicular lines	\vdash					Ad	AD	7.	•	uz	AE	G,			
12. Prove geometric theorems involving															
parallel and perpendicular lines									G						
analytically	\vdash					_									
13. Find zeros of linear functions	igwdow					Aa	Ab	A1	G		A2	CA			
14. Find the optimum value of a	1 1														
function defined for a polygonal convex											A2	CA	FΙ		
set	$oldsymbol{\perp}$	\bot		<u> </u>											
15 Find the manifestory 1 1 1															
15. Find the maximum and minimum											A2	CA	FΙ		
values of a function over a region using													أتي		
linear programming techniques. 16. Solve a system of linear equations	-+	 		-											
in three variables											A2	CA	FΙ	PC	
iii uiiee variables				<u> </u>	l		<u> </u>	l							

C. Matrices													
Solve problems using matrix logic								a2	A2	CA		PC	
2. Find unknown values in equal									A2			РС	
matrices								az	AŁ	Cr		FC	
Write a system of linear equations as a matrix and use the inverse to solve								-2	42	CA		DC	
the system								aZ	A2	CA		PC	
4. Solve systems of linear equations													
using matrix operations on a graphing								a2	A2	CA	FΙ	PC	
calculator													
5. Solve a system of equations using an augmented matrix in echelon form								a2	A2	CA	FΙ	PC	
D. Quadratics 1. Solve quadratic equations by													
graphing								a2	A2	CA		PC	C
Solve quadratic equations by					Α	Ala		- 2	4.3	CA		DC	
factoring					Aa	Ab	AL	aZ	A2	CA		PC	С
3. Solve quadratic equations by								a2	A2	CA		PC	С
completing the square 4. Solve quadratic equations by the								-					
quadratic formula					Aa	Ab	A1	a2	A2	CA		PC	C
5. Solve quadratic equations that have										-			
pure imaginary solutions									A2	CA		PC	C
6. Use the discriminant to determine													
the nature of the roots of a quadratic									A2			PC	C
equation													
7. Find the sum and product of the roots of a quadratic equation									A2	CA		PC	C
8. Find all possible integral roots of a										-			
quadratic equation									A2	CA		PC	C
9. Find a quadratic equation to fit a									A2	CA		PC	С
given condition 10. Solve third and fourth degree									A£				
equations that contain a quadratic									A2	CA		PC	С
factor									AZ	CA		PC	
11. Solve other nonquadratic equations									43			DC	
using quadratic techniques									A2			PC	С
12. Write functions in quadratic form									A2			PC	C
13. Identify the quadratic term, the													
linear term and the constant term of a					Aa	Ab	A1	a2	A2	CA		PC	C
quadratic function 14. Explore the effect of changing													
coefficients for given linear and									A2	CA		PC	
quadratic functions												. •	
15. Determine the equation of a													
parabola from given information about									A2	CA		PC	
the graph 16. Solve quadratic inequalities in one													
variable									A2	CA		PC	
E. Polynomials													
Determine roots of polynomial								-2	42	CA		РС	
equations								aZ	A2	CA		PC	C
2. Apply the fundamental theorem of								a2	A2	CA		PC	С
algebra													
3. Find the factors of polynomials using								a2	A2	CA		PC	С
the remainder and factor theorems													
4. Identify all possible rational roots of													
a polynomial equation by using the									A2			PC	
rational root theorem 5. Determine the number of positive	_	+	_										
and negative real zeros a polynomial									A2			PC	
function has									7.474			7 6	
-	 			 									

6. Approximate the real zeros of a											A2			PC	С
polynomial function															
F. Conics															
1. Write equations of parabolas										a2	A2	CA		PC	C
2. Write equations of circles											A2	CA		PC	C
3. Write equations of ellipses											A2			PC	С
Write equations of hyperbolas											A2			PC	C
5. Write the equation of a conic section															
in standard form											A2			PC	C
6. Identify a conic section from its															
equation											A2			PC	C
7. Use the standard and general forms															
of the equation of a circle											A2			PC	C
8. Use the standard and general forms											43			DC	
of the equation of a parabola											A2			PC	C
9. Use the standard and general forms											42			DC	
of the equation of an ellipse											A2			PC	C
10. Use the standard and general forms											A2			DC	
of the equation of a hyperbola											AZ			PC	C
11. Recognize conic sections by their											A2			PC	
equations											AZ			FC	
12. Solve systems of quadratic														PC	C
equations algebraically														FC	
G. Radical functions															
Write expressions with rational															
exponents in simplest radical form and										a2	A2	CA		PC	C
vice versa															
2. Evaluate expressions in either										22	A2	CA		PC	C
exponential or radical form										az	AZ	CA		FC	
Simplify expressions containing										a 2	A2	CA		PC	C
rational exponents										az	AŁ	CA		rc	
4. Solve radical equations and											A2	CA		PC	C
inequalities											AŁ	CA		10	
H. Rational functions															
1. State the domain and range of a										22	A2	CA		PC	С
rational function.										az	AŁ	5		1	
2. Identify the vertical and horizontal											A2	CA		PC	С
asymptotes of a rational function.											AŁ	CA		10	
3. Determine horizontal, slant, and															
vertical asymptotes of rational											A2			PC	C
functions															
Simplify rational expressions											A2			PC	C
5. Simplify rational expressions															
containing complex numbers in the											A2			PC	C
denominator															
6 5 111 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1															
6. Find the least common denominator														PC	C
of two or more algebraic expressions															
7. Solve rational equations and											A2			PC	С
inequalities														. •	
I. Exponential and Logarithmic functions															
Evaluate and simplify expressions				6	РΔ	Aa	Δh				A2	CA		PC	С
involving real exponents						7	715					O/\			
2. Evaluate expressions with irrational											A2			PC	С
exponents															
3. Simplify expressions and solve				6	PA	Aa	Ab	A1	G	a2	A2			PC	С
equations involving real exponents															
4. Write exponential equations in										a2	A2	CA		PC	C
logarithmic form and vice versa															
5. Evaluate logarithmic expressions											A2	CA		PC	С
6. Find common logarithms and											A2	CA		PC	C
antilogarithms				<u> </u>			<u> </u>								

7. Identify the characteristic and the													D 6	
mantissa of a common logarithm													PC	С
8. Use common logarithms to compute										A2	CA		PC	С
powers and roots										AZ	CA		PC	.
9. Evaluate e^x by using the										A2	CA		PC	С
exponential series										7.2	<u> </u>		. ~	
10. Use the exponential function y =										A2	CA		PC	С
e^x			+ +											
11. Find natural logarithms of numbers										A2	CA		PC	C
12. Solve equations using natural														
logarithms										A2	CA		PC	С
13. Solve equations involving										43	C A		DC	
logarithmic functions										A2	CA		PC	С
14. Solve equations or simplify and														
evaluate expressions using properties										A2	CA		PC	С
of logarithms														
15. Solve equations with variable exponents using logarithms										A2	CA		PC	С
exponents using logarithms			+ +											
16. Solve exponential and logarithmic										A2			PC	С
equations and inequalities.										7.2			. ~	
17. Demonstrate that the exponential														
and logarithmic functions are inverse										A2	CA		PC	С
functions.														
J. Trigonometric functions														
1. Find linear and angular velocities													PC	O
2. Find the values of expressions								G	a2		CA		PC	С
involving sine and cosine								u	az		CA		FC	7
3. Find the values of other											CA		PC	С
trigonometric functions			-								.			
4. Find the values of expressions											CA		PC	C
involving trigonometric functions 5. Use a calculator to find values of			+ +											
trigonometric functions								G			CA		PC	C
6. Find the amplitude and period for														
variations of the sine and cosine											CA		PC	С
function														
7. Use trigonometric identities to											CA		PC	O
simplify and/or evaluate expressions											CA		10	
8. Verify trigonometric identities using											CA		PC	С
various methods			+											
9. Solve trigonometric equations 10. Find the values of the six											CA		PC	С
trigonometric functions of an angle in														
standard position given a point on its											CA		PC	C
terminal side														
11. Find the exact values of the six														
trigonometric functions of special											CA		PC	С
angles														
12. Find decimal approximations for the														
values of the six trigonometric											CA		PC	С
functions of any angle			-											
13. Find the amplitude, period, and											CA		DC	•
phase shift for a trigonometric function											CA		PC	С
14. Write equations for the	\vdash	+	+											
trigonometric functions given the											CA		PC	С
amplitude, period, and phase shift														
15. Evaluate inverse trigonometric											CA		РС	C
functions		\perp									CA		PC	С
16. Find principal values of inverse											CA		PC	С
trigonometric functions		\perp	1	<u> </u>	<u> </u>						-G/A			
17. Write equations for inverses of											CA		PC	С
trigonometric functions			\bot	 <u> </u>	<u> </u>	<u> </u>						 		

10.71 1:6	-	 _								1			1		
18. Identify and use reciprocal															
identities, quotient identities,												CA		PC	С
Pythagorean identities, and symmetry															
identities				<u> </u>											
19. Use the basic trigonometric												CA		PC	С
identities to verify other identities												5			•
20. Use the sum and difference															
identities for sine, cosine, and tangent												CA		PC	C
functions															
21. Use the double- and half-angle															
identities for the sine, cosine, and												CA		PC	C
tangent functions															
K. Vectors and polar coordinates															
1. Find equal, opposite, and parallel														PC	
vectors														FC	
2. Find ordered pairs that represent														PC	
vectors														F	
3. Convert from polar coordinates to														PC	
rectangular coordinates and vice versa															
4. Write the polar form of a linear														PC	
equation															
5. Change complex numbers from															
rectangular to polar form and vice														PC	
versa															
L. Sequences and series															
1. Find the next term in a sequence by					6	DA	Aa	Ala	A 4		A2	CA		DC	.
looking for a pattern.					0	PA	Aa	AD	AL		AZ	CA		PC	С
2. Find the nth term of an arithmetic								Ala	A 4		42			DC	•
sequence and find the position of a								AD	A1		A2			PC	С
given term in an arithmetic sequence.															
3. Find arithmetic means.						PΑ	Aa	Ab	A1		A2			PC	
4. Differentiate between a sequence															
and a series.											A2			PC	C
5. Find the sum of an arithmetic series.														PC	C
6. Find specific terms in an arithmetic															
series.								Ab	A1	G	A2			PC	C
7. Use sigma notation to denote sums.											A2			PC	C
8. Compare and contrast arithmetic															
and geometric sequences.											A2			PC	С
9. Find the nth term of a geometric															
sequence and the position of a given									A1		A2			PC	С
term in a geometric sequence.															
10. Find geometric means.									A1	G	A2			PC	С
10. Tilla geometric means.									/A	7					
11. Find the sum of a geometric series.											A2			PC	C
12. Find specific terms in a geometric															
series.											A2			PC	C
13. Find the limit of the terms of an															
infinite sequence														PC	C
14. Find the sum of an infinite															
geometric series														PC	C
15. Determine whether a series is	 	+	1												
convergent or divergent														PC	C
16. Expand powers of binomials using	 	+	1												
Pascal's triangle and the Binomial														PC	С
Theorem														TC	
17. Find specific terms of a binomial	+	+													
expansion														PC	
N. Calculus	-	+													
iv. Calculus							l								

							1	1	1				1			1		
1. Discuss the properties of functions to																		
include domains, ranges, combinations,																		
odd, even, periodicity, symmetry,																	PC	С
asymptotes, zeros, upper and lower																	rc	
bounds, and intervals where the																		
function is increasing or decreasing.																		
2. Define and apply the properties of																		
limits of functions, including limits of a																		
constant, sum, product, quotient, one-																	PC	С
sided limits, limits at infinity, infinite																		
limits, and nonexistent limits.																		
3. State the definition of continuity and																		
determine where a function is																		
continuous or discontinuous, including																		
* continuity at a point; * continuity																		C
over a closed interval; * application of																		
the Intermediate Value Theorem; and *																		
graphical interpretation of continuity																		
and discontinuity.																		
4. Investigate and describe the																		
relationship between differentiability																		C
and continuity																		
5. State (without proof) the Mean																		
Value Theorem for derivatives and																		C
apply it both algebraically and																		
graphically. 6. Use l'Hopital's rule to find the limit of																		
functions whose limits yield the																		
indeterminate forms: 0/0 and																		C
infinity/infinity																		
7. Find the derivative of a function																		С
8. Find the slope and the equation of a																		
line tangent to the graph of a function																		С
at a given point																		
9. Find the critical points of the graph																		
of a polynomial function and determine																		
if each is a minimum, maximum, or																		C
point of inflection																		
10. Determine continuity or																		С
discontinuity of functions																		
44 71 115 11 11 611																		
11. Identify the properties of the																		
definite integral, including the																		
Fundamental Theorem of Calculus and																		C
the definite integral as an area and as a																		
limit of a sum as well as the fundamental theorem: The integral																		
from a to x of $f(t)d(t) dt/dx = f(x)$																		
12. Find the indefinite integral of																		
algebraic, exponential, logarithmic, and																		
trigonometric functions, including																		
special integration techniques of																		C
substitution (change of variables) and																		
integration by parts																		
IV. Problem Solving																		
A. Solving Story Problems using																		
arithmetic																		
1. Ident. Problems w/ too much Info.	1	2	3	4	5	6	PA	Aa	Ab	A1	G	a2	A2	CA				
Choose Operations	1	2	3	4	5	6	PA		Ab									
Give sensible answer	1	2	3	4	5	6	PA		Ab			a2	A2	CA	FI	S	PC	С
Solve Multiple-step problems		2	3	4	5	6	PA	_	Ab					CA			PC	
5. Identify Problem w/ too little info.		2	3	4	5	6	PA		Ab				A2					
si additing a resident tig coo nedo into	 														ь			\longrightarrow

				2			-	D.A	Α-	A I.			- 0	40	1			D.C.	
6. Solving Money Problems		1		3	4	5	6	PA		Ab	_			A2		FI	5	PC	
7. Recognizing Clue Words				3	4	5	6	PA	Aa	Ab	A1		a2	A2				PC	
B. Use equations to solve verbal							6	PA	Aa	Ab	A1		a2	A2	CA	FI		PC	С
problems C. Use inequalities to solve verbal																			
problems								PA	Aa	Ab	A1		a2	A2	CA	FΙ		PC	С
D. Solve problems using the prediction																			
equation														A2			S	PC	
equation																			
E. Use formulas to solve verbal problems									Aa	Ab	A1	G	a2	A2	CA	FΙ		PC	С
F. Problem solving by drawing a model or																			
diagram, using a chart or table									Aa	Ab	A1	G	a2	A2	CA	FΙ	S	PC	С
G. Using guess and check							6	PA	Aa	Ab	A1	G	a2	A2	CA			PC	С
_ cr coming garden and arread																			
H. Working backwards to solve a problem							6	PA	Aa	Ab	A1	G	a2	A2	CA			PC	С
							6	DA	Α	Ab	Α-1		-2	42	CA			DC	
I. Looking for patterns to solve problems							6	PA	Aa	AD	A1	G	a2	AZ	CA			PC	С
J. Solve verbal problems using percent,									Λa	۸h	A1	G	a2	۸2				PC	С
interest, uniform motion									Aa	AD	A.T.	,	az	AZ				-	
K. Use geometric figures to solve									Δa	Δh	A1	G	a2	Δ2				PC	С
problems									AG	AB	/A-2-	,	u.	7.2				. •	J
L. Learn and use basic vocabulary and																			
rules of logic, including laws of syllogism												G							
and detachment M. Understanding and demonstrate																		-	
inductive and deductive reasoning												G							
N. Solve problems using quadratic																			
equations										Ab	A1			A2	CA			PC	C
O. Solve problems involving direct,																			
inverse, and joint variation										Ab	A1			A2	CA			PC	
P. Use rational expressions to solve											7.1							20	
problems										Ab	A1			A2	CA			PC	С
Q. Use logarithms to solve problems														A2	CA			PC	С
C see sgr s see se p see s																			
R. Solve problems involving right												G			CA			PC	С
triangles using right triangle trigonometry																			
S. Solve triangles and problems using the												G			CA			PC	
Law of Sines & Cosines												9			CA			FC	
T. Solve problems involving																			
permutations, circular permutations,																		PC	
combinations																			
U. Solve problems involving simple harmonic motion																		PC	
V. Solve problems using vectors and right																			
triangle trigonometry																		PC	
triangle trigonometry																			
W. Apply the derivative to solve problems																			С
X. Use integration to solve problems																			С
Y. Apply the definite integral to solve																			
problems																			С
V. Measurement/Geometry																			
A. Linear																			
		1	2	3	4	5	6	DΛ	٨٥	۸h	A1	G							
Measuring Length/Width Secondary Measure	I/E					_							-			-		\vdash	
Recognizing Standard Measure	K5		2	3	4	5	6				A1							$\vdash \vdash$	
3. Recognizing Metric Measures		1	2	3	4	5	6	PA	Aa	Ab	A1	G							
4. Estimating Distance				3	4	5	6											$\sqcup \sqcup$	
5. Converting				3	4	5	6												
6. Add/Subt. Measurements	L			3	4	5	6						a2	A2	CA			PC]
7. Recognizing International System				3	4	5	6						22	A2	CA			PC	
(SI) Prefixes					*	3													
8. Finding Perimeter		1	2	3	4	5	6	PA	Aa	Ab	A1	G	a2	A2	CA			PC	
<u> </u>	•															•			

	1		1													1		
9. Calculating Area					4	5	6	PA	_	_	A1	G	a2				PC	C
10. Finding Square measures					4	5	6	PA		Ab		G	a2				PC	
11. Using the Distance Formula									Aa	Ab	A1	G	a2	A2	CA		PC	С
B. Weight																		
Understanding Standard weight		1	2	3	4	5	6							A2			PC	
2. Understanding Metric Weight				3	4	5	6							A2			PC	
3. Converting				3	4	5	6							A2			PC	
4. Add/Subt. Weights				3	4	5	6							A2			PC	
C. Capacity																		
Finding Volume				3	4	5	6	PA	Δa	Δh	A1	G	a2	Δ2	CA		PC	С
Understanding Metric				3	4	5	6	PA			A1		a2				PC	С
				3	4	5	6	PA		AD	AT	9		A2			PC	C
3. Calculating Standard								PA					aZ	AZ	CA		FC	J
4. Converting				3	4	5	6	-										
D. Temperature																		
Understanding Fahrenheit		1	2	3	4	5	6										PC	С
2. Understanding Celsius			2	3	4	5	6							A2			PC	С
3. Converting						5	6							A2			PC	C
E. Time																		
Reading a Clock	K5	1	2															
2. Adding Time		1	2	3	4	5	6											
Reading a Calendar	K 5	_	2															
4. Converting	1.0	1	2	3	4	5	6											
F. Money		•	_	9		9												
	K5	1	2	3	4	5												
1. Counting Penny, nickels, dimes	V2	_					-											
2. Counting Quarters, Half Dollars		1	2	3	4	5												
3. Counting dollars	K5	1	2	3	4	5												
4. Budgeting																		
G. Shapes/Angles																		
1. Identify Shapes	K5	1	2	3	4	5	6	PA				G						
												G						
2. Measuring angles with a protractor												,						
3. Change radian measure to degree															CA			
measure and vice versa							-	-										
4. Identify coterminal angles															CA		PC	С
H. Use equations with variables to solve								PA	Aa	Ab	A1	G	a2	A2	CA		PC	С
perimeter and area problems I. Use midpoint and distance formulas																		
using number line and coordinate plane									Aa	Ab	A1	G	a2	A2	CA		PC	C
J. Use Pythagorean Theorem									Λ	Ab	A 1	G	a2	A 2	CA		PC	
K. Identify and draw models of points,									Aa	AD	AL	G	a∠	AZ	CA		FC	
lines, and planes																		
L. Demonstrate 7 basic constructions												_						
using straight edge and compass												G	a2	A2	CA		PC	С
M. Use types of angles and pairs of																		
angles to solve problems												G						
N. Use properties of parallel and												G						
perpendicular lines to solve problems												G						
O. Understand and practice the concepts												G						
of informal and indirect proofs												9						
P. Understand and practice the concepts																		
of two column proofs using deductive												G						
thinking.																		
O Identify and electify by the state of												G						
Q. Identify and classify types of triangles 1. Use triangle postulates to prove	 															 		
triangle congruence and similarity												G						
2. Use proportions to solve similar	 															1		
triangles												G						
anangies .			<u> </u>	<u> </u>	<u> </u>	<u> </u>		<u> </u>			<u> </u>						ш-	

3. Understand and solve problems using medians, altitude, and bisectors 4. Use properties of right triangles to solve problems 5. Use laws of sine and cosine to solve problems 6. Use laws of sine and cosine to solve problems 7. Use laws of sine and cosine to solve problems 8. Recognize and apply properties of polygons 1. Work problems using various types of parallelograms and quadrilaterals 2. Find angle measurements and areas of regular plane figures 5. Identify and use properties of cricks and lines intersecting circles 7. Use relationships and properties of sangles, arcs, thorst, sangents, secants, and sectors to solve problems involving circles 7. Use relationships and properties of sangles, arcs, thorst, sangents, secants, and sectors to solve problems involving circles 8. Infini lateral area, total area, and volume of pyramids, cones, cylinders, and prisms 9. Find area and volume of spheres 9. Individual area, and volume of spheres 9. Individual area, and volume of spheres 9. Individual area, and volume of pyramids, cones, cylinders, and prisms 9. Find area and volume of spheres 9. Individual area,																			
4. Use properties of right triangles to solve problems 5. Use laws of sine and cosine to solve problems 6. Use laws of sine and cosine to solve problems 7. Use laws of sine and cosine to solve problems 8. Recognize and apply properties of polygons 1. Work problems using various types of parallelograms and quadrilaterals 2. Find angle measurements and areas of regular plane figures 5. Identify and use properties of circles and lines intersecting circles 7. Use relationships and properties of angles, arcs, knords, tangents, escents, and sectors to solve problems involving circles 9. Infinity properties of three-dimensional figures 1. Find lateral area, total area, and volume of pyramidis, cones, cylinders, and prisms 2. Find area and volume of spheres 2. Find area and volume of spheres 4. Understanding Bridgoraphs 5. Understanding Graphs 6. Caph a relation, state its domain and range, and determine if the relation is a function 7. Use the slope and intercepts to graph a line 8. Caph a relation, state its domain and range, and determine if the relation is a function 9. Caph a relation properties of a fine that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a given equation of a line that is parallel or perpendicular to the graph of a line that is parallel or	3. Understand and solve problems												G						
solve problems 5. Use laws of sine and cosine to solve problems R. Recopitze and apply properties of polygons 1. Work problems using various types of parallelograms and quadrilaterals 2. Find angle measurements and areas of regular plane figures 5. Identify and use properties of circles and lines intersecting circles T. Use relationships and properties of angles, arcs, chords, tangents, secants, and sectors to solve problems involving circles 1. Lind lateral area, total area, and volume of pyramids, cones, cylinders, and prisms 2. Find area and volume of spheres 2. Find area and volume of spheres 2. Find area and volume of spheres 3. Understanding Bar Graphs 1. 2 3 4 5 6 2. Understanding Bar Graphs 1. 2 3 4 5 6 3. Understanding Pictographs 4. Understanding Pictographs 5. Understanding Circle Graphs 8. Graph a rebation, state its domain and range, and requation 1. Use the slope and intercepts to graph a line 2. Determine if two lines are parallel, perpendicular to the graph of a rational function. C. Identify equations that are linear and graph them 1. Use a graphing calculator to graph a function, dientify the domain and range of the function. Include functions with the domain and range of the function, include functions and function, cliven the graph of a rational function. Given the graph of a rational and graph of the equation of a function within a given domain and range of the function. Include functions with the domain and range of the function. Include functions within a given domain and range of the function. Include functions within a given domain and range of the function. Include functions within a given domain and range of the function. Include functions within a given domain and range of the function. Include functions within a given domain and range of the function. Include functions within a given domain and range of the function. Include functions within a given domain and range of the function. Include functions within a given domain and range of the function. Include func																			
problems R. Recopine and apply properties of polygons I. Work problems using various types of parallelograms and quadrilaterals 2. Find angle measurements and areas of regular plane figures 5. Jenetity and use properties of circles and lines intersecting circles I. Liver relationships and properties of angles, arcs, khords, tangents, secants, and sectors to solve problems involving circles II. Identify types and parts of three-dimensional figures II. Find lateral area, total area, and volume of pyramids, cores, cylinders, and prisms I. Find reason and volume of spheres II. Find reason and volume of spheres II. Understanding Bar Graphs II. Understanding Bar Graphs II. Understanding Bar Graphs II. Understanding Bar Graphs II. Understanding Graphs III. Understanding Graphs	solve problems												G		A2	CA		PC	С
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Use Venn diagrams to show					6					C				ET			
relationships					6					G				FΙ			
Use number line to show sets of						DA	Aa	۸h	Αđ			A2					
numbers and to graph inequalities						PA	Aa	AD	AI			AZ					
Graph points in all quadrants of					6	DΛ	Aa	۸h	A1	G		A2				PC	
coordinate plane					0	LA	AG	AU	7.	,		AL				- C	
Find and graph solutions for relations							Δa	Ab	Δ1			A2				PC	С
and functions																	
Identify range, domain, and inverse							Aa	Ab	A1			A2				PC	C
Solve equations in two variables by							Aa	Ab	A1	G		A2				PC	С
graphing																	
Make and use a circle graph												A2				PC	С
Identify and draw reflections,												A2				PC	С
translations, rotations, and symmetry																	
Create and draw three dimensional																	
figures on three dimensional axes																	
Use scale factors for enlargement, reduction, and congruence										G							
reduction, and congruence																	
Determine the equation of a parabola												A2	CA			PC	
from given information about the graph												AZ	CA			FC	
I. Investigate symmetry of functions																	
using a graphing calculator												A2	CA			PC	C
J. Graph a function and its inverse												A2	CA			PC	С
K. Graph rational functions												A2				PC	C
L. Graph polynomial, absolute value, and																FC	
radical inequalities												A2	CA			PC	C
M. Add and subtract vectors graphically																PC	
N. Graph polar coordinates and simple																FC	
polar equations																PC	i
O. Graph conic sections												A2				PC	
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under iteration in the complex plane Determine if a point escapes or is a																	
prisoner under iteration																PC	
Determine if a Julia set is connected or																	
is a dust of points																PC	i
Determine if a complex number is																	
inside the Madelbrot set																PC	
Determine the color of a point outside																DC	
the Mandelbrot set																PC	
VII. Probability/Statistics																	
A. Averaging 2 or more numbers		3	4	5	6	РΔ	Aa	Δh	Δ1	G	a2	Δ2	CA		S		
B. Find the median, mode, and mean of																	
sets of data					6	PA	Aa	Ab	A1	G	a2	A2	CA		S		
C. Use the median, mean and mode to						-											
interpret data					6	PA	Aa	Ab	A1						S		
D. Draw a scatter plot and find the												A2	CA		S		
prediction equation												AZ	CA		5		
E. Read and interpret data from line plots					6	DΛ	Aa	۸h	Λ1			A2			S		
and stem-and-leaf plots					0	PA	Ad	AD	AI			AZ			2		
F. Find the range and interquartile range						PA						A2			S]
for a set of data						TA						7472			3		
G. Find the standard deviation for a set												A2			S		
of data				ļ													
H. Explore simple probability problems and odds problems						PA	Aa	Ab	A1			A2			S		
and odds problems			1	<u> </u>	<u> </u>												

I. Use area to solve problems involving									A 2		6	
geometric probability									AZ		9	
J. Solve problems using the Basic									A2		٥	
Counting Principle									AZ		9	
K. Solve problems involving permutations					Α.	ΛL	A 4		A 2		٥	
and combinations					Aa	Ab	AL		A2		9	