

Pre-Calculus



Content

of days

ACT Standard

Assessment

Unit 1:

18

Real Numbers

4

A. Properties

B. Interval

C. Set Theory

D. Properties of Absolute Value

Exponents and Radicals

6

28 - 32

A. Properties of Exponents

B. Properties of Nth Roots

C. Rational Exponents

D. Rationalizing the Denominator

Polynomials

6

24 - 27

A. Operations

B. Factoring

1. Trinomials

2. Difference of Squares

3. Sum and Difference of Cubes

4. Grouping

Unit 2:

20

Rational Expressions

6

A. Simplify

B. Operations

C. Complex Fractions

D. Rationalizing the Numerator
And Denominator

Equations

6

28 - 32

A. Linear

B. Quadratic

C. Rational

D. Radical

E. Literal

Modeling with Equations

6

33 - 36

A. Interest

B. Solution

C. Work

D. Distance

E. Geometric

1st nine weeks

	Unit 3:	17		
	Inequalities	4	28 - 32	
	A. Linear			
	B. Non-linear			
	C. Absolute Value			
	Coordinate Geometry	4	28 - 32	
	A. Midpoint & Distance Formula			
	B. Definition of Intercepts			
	C. Definition of Symmetry			
	Solving Equations and Inequalities Graphically	3		
	A. Determine appropriate viewing Window			
	B. Solve Equations and Inequalities using The Graphing Calculator			
	Lines	4	28 - 32	
	A. Definition of Slope			
	B. Equations of Lines			
	1. Point-slope			
	2. Slope-intercept			
	3. General Form			
	4. Parallel and Perpendicular			
	Unit 4:	18		
	Functions	4		
	A. Definitions			
	B. Piecewise Functions			
	C. Evaluating			
	D. Domain			
	E. Verbal Interpretation of Graphs			
	Graphs of Functions	4		
	A. Graphs (including Piecewise)			
	B. Finding Domain & Range from graph			
	Variation	2		
	A. Direct, Inverse, Joint, & Applications			
	Average Rate of Change	2		
	A. Difference Quotient			
	B. Increasing & Decreasing Functions			
	Transformations of Functions	4	33 - 36	
	A. Graphing using Transformations			
	B. Even, odd, or neither			
	Unit 5:	11		
	Extreme Values of Functions	3	28 - 32	
	A. Quadratic			
	B. Minimum and Maximum Values			
	Modeling with Functions (optional)	1	28 - 32	
	Combining Functions	3	28 - 32	
	A. Algebra & Composition of Functions			
	B. Finding Domain			
	Functions	2		
	A. One-to-one and Inverses			

	Unit 6:	22		
	Polynomials	3		
	A. End Behavior of Graphs			
	B. Zeros			
	C. Graphing			
	D. Finding Local Extrema with Calculator			
	Dividing Polynomials	3		
	A. Long Division			
	B. Synthetic Division			
	C. Remainder and Factor Theorem			
	Real Zeros of Polynomials	4		
	A. Rational Zero Theorem			
	B. Descartes' Rule of Signs			
	C. Applications using the graphing Calculators			
	Complex Numbers	2	28 - 32	
	A. Operations			
	B. Solving Equations			
	Complex Zeros	4		
	A. Fundamental Theorem of Algebra			
	B. Complete Factorization			
	C. Conjugate Zero Theorem			
	Rational Functions	4		
	A. Finding Asymptotes			
	B. Finding x and y intercepts			
	C. Graphing			
	Unit 7:	19		
	Exponential Functions	3	33 - 36	
	A. Graphing			
	B. Natural Exponential Function			
	C. Compound & Continuous Interest			
	Logarithmic Functions	5	33 - 36	
	A. Definitions			
	B. Graphing			
	C. Properties of Logarithms			
	D. Common and Natural			
	E. Evaluating			
	Laws of Logarithms	3	33 - 36	
	A. Expanding Expressions			
	B. Condensing Expressions			
	C. Change of Base Formula			
	D. Evaluating			
	Equations	4	28 - 32	
	A. Solving Exponential			
	B. Solving Logarithmic			
	C. Applications			
	Modeling with Exponential & Logarithmic Functions	2	28 - 32	
	A. Exponential Growth and Decay			

	Unit 8:	14		
	Conic Sections	4	28 - 32	
	A. Circles (Section 1.8)			
	B. Parabolas			
	1. Vertex			
	2. Focus and Directrix			
	3. Graphs			
	4. Find Equations			
	Ellipses	3		
	A. Center			
	B. Vertices			
	C. Foci			
	D. Major and Minor Axis			
	E. Graphs			
	F. Find Equations			
	Hyperbolas	3		
	A. Center			
	B. Vertices			
	C. Foci			
	D. Graph using Asymptotes			
	E. Find Equations			
	Shifted Conics	2		
	A. Include shifts while teaching other sections.			
	Unit 9:	14		
	Systems of Equations with Linear & Quadratics	3	28 - 32	
	A. Substitution			
	B. Elimination			
	C. Applications			
	Systems of Linear Equations with Three Variables	2		
	A. Solve			
	Matrices	2		
	A. Solve Using Guassian Method			
	B. Classify			
	Matrices	3		
	A. Basic Operations			
	B. Determinants			
	Matrices	2		
	A. Inverse using Graphing Calculators			
	B. Solving a Matrix Equations			
	Unit 10:	10		
	Sequences	2		
	A. Definition			
	B. Summation Notation			
	Arithmetic Sequences and Series	2		
	Geometric Sequences and Series	2	33 - 36	
	The Binomial Theorem	2		
	A. Factorials & Binomial Expansion			

