ALGEBRA 2 ACCELERATED SYLLABUS

2019- 2020 Academic School-Year

Marking Period 1

Chapter 3 – Quadratic Equations and Complex Numbers (Test: Factoring Supplemental & 3.1)

Section	Title	NJSLS	Problems *Teachers must also assign mixed review problems as part of homework assignments.
Supplement	Factoring Quadratic Expressions	A-SSE.A.2, A-SSE.B.3a	Teacher created worksheet using Kuta software or other supplemental material.
3.1	Solving Quadratic Equations	A-SSE.A.2, A-REI.B.4b, F-IF.C.8a, N-RN.A.2	Big Ideas Text pg.99-102 #1-10, 13-19, 23, 27-32, 47-54, 57, 59, 70, 71, 76–83

Chapter 2 – Quadratic Functions (Test 2.1, 2.2 & 2.4)

Section	Title	NJSLS	Problems
2.1	Transformations and Quadratic Functions	F-IF.C.7c, F-BF.B.3	Big Idea Text pg.52 - 54, #1-33, 35, 37, 39, 46, 50–52
2.2	Characteristics of Quadratic Functions	F-IF.B.4, F-IF.C.7.c, F-IF.C.9, A-APR.B.3	Big Idea Text pg. 61-64, # 1–2, 3-18, 21-26, 33-46, 77, 81–88
2.4	Modeling with Quadratic Functions	A-CED.A.2	Big Idea Text pg. 80-82 # 1-13, 17-21, 28, 38-41

Chapter 3 – Quadratic Equations and Complex Numbers (Test: 3.2, Supplement, 3.3 & 3.4)

Section	Title	NJSLS	Problems
3.2	Complex Numbers *Include higher powers of *i*	N-CN.A.1, N-CN.A.2, N-CN.C.7, A-REI.B.4b	Big Ideas Text pg.108-110 #1–31, 37–44, 49–66, 68, 79–84
Supplement	Simplify Radicals	N-RN.A.1, N-RN.A.2	Use Kuta Software
3.3	Completing the Square	N-CN.C.7, A-REI.B.4b, F-IF.C.8a	Big Ideas Text pg.116-118 # 1-19, 25–37, 41–50, 55-61, 66, 69, 74–81 ** For #55-60 do not use complete the square, use *h = -b/(2a)* and *k = f(h)*
3.4	Using the Quadratic Formula	A-CED.A.3, A-REI.C.7, A-REI.D.11	Big Ideas Text pg.127-130 #1-18, 27, 33, 34, 72, 77–84

Marking Period 2

Chapter 1 – Linear Functions (Test: Supplemental 2x2, 1.4 & 3.5)

Section	Title	NJSLS	Problems
Supplement	Solving 2x2 linear systems algebraically	A-REI.C.6	For objectives relating to system of two, teachers should use Kuta or other supplementary materials. Big Ideas Text pg. 28: # 33-38 *Supplemental Text Prentice Hall Algebra 2*: pg 128 #1-43
1.4	Solving Linear	A-CED.A.3, A-REI.C.6	Big Idea Text pg. 34-36 **,** # 1-15, 19-23 odd, 36, 40, 44–51
3.5	Solving Nonlinear Systems Graphically	A-CED.A.3, A-REI.C.7, A-REI.D.11	Big Ideas Text pg.136-138 #1-21, 23, 27-33, 35, 43–47, 58, 61–66

Chapter 4 – Polynomial Functions (Test: 4.1 - 4.3)

Section	Title	NJSLS	Problems
4.1	Graphing Polynomial Functions	F-IF.B.4, F-IF.C.7c	Big Ideas Text pg.162-164 #1-20, 25–31, 37, 46, 48, 51–56
4.2	Adding, Subtracting, and Multiplying Polynomials	A-APR.A.1, A-APR.C.4, A-APR.C.5	Big Ideas Text pg.170-172 # 1-14, 16-32, 35–47, 50-52, 56, 66–69
4.3	Dividing Polynomials	A-APR.B.2, A-APR.D.6	Big Ideas Text pg.177-178 #1–4, 11–32, 38, 41–44

Chapter 4 – Polynomial Functions (Test: 4.4 - 4.6 & 4.8)

Section	Title	NJSLS	Problems
4.4	Factoring Polynomials	A-SSE.A.2, A-APR.B.2, A-APR.B.3	Big Ideas Text pg.184-186 #1–49, 72, 77–84
4.5	Solving Polynomial Equations	A-APR.B.3	Big Ideas Text pg.194-196 #1-45, 52, 56, 66–73
4.6	The Fundamental Theorem of Algebra	N-CN.C.8, N-CN.C.9, A-APR.B.3	Big Ideas Text pg.202-204 #1-14, 21-29, 33-37, 46, 50, 54–60
4.8	Analyzing Graphs of Polynomial	A-APR.B.3, F-IF.B.4, F-IF.C.7c, F-BF.B.3	Big Ideas Text pg.216-218 #1-35, 50, 56, 57

Marking Period 3

Chapter 5 – Rational Exponents and Radical Functions (Test: 5.1, 5.2 & 5.4)

Section	Title	NJSLS	Problems
5.1	*n*th Roots and Rational Exponents	N-RN.A.1, N-RN.A.2	For objectives relating to simplifying expressions with rational exponents teacher should use Kuta or other supplementary materials. Big Ideas Text pg. 241-242 #1-32 35-43, 51–58
5.2	Properties of Rational Exponents and Radicals	N-RN.A.2	Big Ideas Text pg. 248-250 #1-10, 13-27, 29-44, 47-55, 57-63, 65-69, 78, 82–88
5.4	Solving Radical Equations and Inequalities	A-REI.A.1, A-REI.A.2	Big Ideas Text pg. 266-268 #1-43, 57, 64-70

Chapter 5 – Rational Exponents and Radical Functions (Test: 5.3, 5.5 & 5.6)

Section	Title	NJSLS	Problems
5.3	Graphing Radical Functions	F-IF.C.7b, F-BF.B.3	Big Ideas Text pg. 256-258 #1-33, 39-40, 51-66, 64, 69-72
5.5	Performing Function Operations	F-BF.A.1b	Supplement finding composition of functions using Kuta. Big Ideas Text pg. 273-274 #1-20, 22, 28-35
Supplement	Composition of Functions	F-BF.A.1c	*Supplement Composition of functions using Kuta Software*
5.6	Inverse of a Function	A-CED.A.4, F-BF.B.4a	Big Ideas Text pg. 281-284 #1–4, 5-19, 22-53, 70, 73–79

Chapter 6 – Exponential and Logarithmic Functions (Test: 6.2 – 6.4)

Section	Title	NJSLS	Problems
6.2	The Natural Base *e*	F-IF.C.7e, F-LE.B.5	Big Ideas Text pg. 307-308 #1-14, 35, 40, 41 42, 44-51
6.3	Logarithms and Logarithmic Functions	F-IF.C.7e, F-BF.B.4a, F-LE.A.4	Big Ideas Text pg. 314-316 #1–24, 27-31, 40, 42, 55-59, 65, 68, 72-78
6.4	Transformations of Exponential and Logarithmic Functions	F-IF.C.7e, F-BF.B.3	Big Ideas Text pg. 322-324 #: 1-19, 25, 26, 28, 29, 35, 40, 41, 43, 45-47, 57-60

Marking Period 4

Chapter 6 – Exponential and Logarithmic Functions (Test: 6.5 - 6.6)

Section	Title	NJSLS	Problems
6.5	Properties of Logarithms	A-SSE.A.2, F-LE.A.4	Big Ideas Text pg. 331-332 #1-30, 33-39, 49–56
6.6	Solving Exponential and Logarithmic Equations	A-REI.A.1, F-LE.A.4	Big Ideas Text pg. 338-339 #1-16, 21-40, 75-78

Chapter 7 – Rational Functions (Test 7.3-7.5)

Section	Title	NJSLS	Problems
7.3	Multiplying and Dividing Rational Expressions	A-APR.D.6, A-APR.D.7	Big Ideas Text pg. 380: #1-8, 11-24,25, 27-34, 42, 50-57
7.4	Adding and Subtracting Rational Expressions	A-APR.D.6, A-APR.D.7	Big Ideas Text pg. 380: #1-26, 39-42, 54,
7.5	Solving Rational Equations	A-CED.A.4, A-REI.A.1, A-REI.A.2	Big Ideas Text pg. 398: #2-11, 15-30, 37-44, 46, 61-64

Chapter 7 – Rational Functions (Test 7.2 & Graphing Rational Functions)

Section	Title	NJSLS	Problems
7.2	Graphing a Simple Rational Function	A-APR.D.6, F-BF.B.3	Big Ideas Text pg. 370: #1-18, 20-32, 43, 44, 59-66
Supplement	Graphing Rational Functions in the form $y = \frac{p(x)}{q(x)}$ Example: $y = \frac{x^2-25}{2x^3-7x^2-15}$	A-APR.D.6, A-APR.D.7	Use Kuta software to graph rational functions with holes, vertical asymptotes and horizontal asymptotes. Also have students algebraically find and discuss these characteristics along with domain and range.

Chapter 8 – Sequences and Series (Test 8.1 – 8.5)

Section	Title	NJSLS	Problems
8.1	8.1 Defining and Using Sequences and Series	NJSLS. F-IF.A.3	Big Ideas Text pg. 414 #5-14, 15-24, 27, 28, 31-38, 39-46 Supplement with Kuda Software
8.2	8.2 Analyzing Arithmetic Sequences and Series	NJSLS. F-IF.A.3, NJSLS. F-BF.A.2,	Big Ideas Text pg. 422 #3-8, 11, 13-17, 23-28, 47-50 Supplement with Kuda Software
8.3	8.3 Analyzing Geometric Sequences and Series	NJSLS.A-SSE.B.4, NJSLS. F-IF.A.3, NJSLS. F-BF.A.2,	Big Ideas Text pg. 430, #5-10, 13, 15-19, 23-28, 53 Supplement with Kuda Software
8.4	8.4 Finding Sums of Infinite Geometric Series	NJSLS.A-SSE.B.4,	Big Ideas Text pg. 439, #3-4, 7-12 Supplement with Kuda Software

Course Expectations and Skills

- Students are required to have proficiency in all prerequisite topics for Algebra 1 and Geometry. Those who do not demonstrate proficiency will be required to seek additional help after school to close their achievement gap in order to be successful in this course.
- Students are required to learn and utilize a graphing calculator (TI 84+) in this course. They are encouraged to purchase a graphing calculator, but not required. Classroom sets are available for teachers to use as needed. In addition, free on-line graphing apps and programs are promoted by teachers for students on homework.
- Students are required to participate in both small and large group discussions and activities, as directed.
- Students are required to complete a project each marking period, including those which require the use of technology.

Resources

Text Book: Big Ideas Algebra 2

Assessment Information

Department of Mathematics - Algebra 2 Accelerated

Marking Period 1	Marking Period 2	Marking Period 3	Marking Period 4
Major (MAJ): Summative 35%	Major (MAJ): Summative 35%	Major (MAJ): Summative 35%	Major (MAJ): Summative 35%
Benchmark (BMK): 20%	Benchmark (BMK): 20%	Benchmark (BMK): 20%	Benchmark (BMK): 20%
Project (PRJ): 10%	Project (PRJ): 10%	Project (PRJ): 10%	Project (PRJ): 10%
Minor (MIN): Formative 20%	Minor (MIN): Formative 20%	Minor (MIN): Formative 20%	Minor (MIN): Formative 20%
Class Participation (CP): 5%	Class Participation (CP): 5%	Class Participation (CP): 5%	Class Participation (CP): 5%
Homework (HW): 10%	Homework (HW): 10%	Homework (HW): 10%	Homework (HW): 10%