

Grade 8 – Algebra 1



Dominican International School

Course Syllabus

School Year 2026–27



Teacher: Mr. Isaac M.
Position: Math teacher

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COURSE DESCRIPTION: Algebra I is a course in which students are required to make the transition from arithmetic to the new world of symbols. Symbolic reasoning and calculations with symbols are central in this course. The Common Core State Standards are adopted for students and teachers to achieve higher expectations.

Through the study of Algebra, students develop an understanding of the symbolic language of mathematics. Use properties of rational exponents, rational and irrational numbers. Interpret and create the structure, and perform arithmetic on linear and quadratic polynomials. Interpret, analyze, and solve linear, absolute value equations and inequalities, and quadratic and exponential equations. Construct and compare linear, quadratic, and exponential models. Use scatter plots to fit and interpret correlation coefficients, and summarize, represent, and interpret data using measures of center and spread. In addition, algebraic skills and concepts are developed and used in a wide variety of problem-solving situations. It gives students a solid foundation for exploring and understanding Geometry, Algebra II, and Calculus in future grades.

COURSE OBJECTIVES: By the end of the semester/school year, (SWBAT) Students will be able to: listen, speak, read and write math just like any other language. They will be asked to utilize this math language to express the real-life problem, to construct a model to solve the problem, and to find the solution of the problem. Throughout the learning process, I hope they can enjoy this efficient and very powerful language. In addition, students will be able to use units, interpret them consistently in formulas as a way to understand problems and to guide the solution of multi-step problems. Use the structure of an expression to interpret complicated problems such as terms, factors, coefficients by viewing one or more of their parts as a singular entity. Factor a quadratic expression using factoring, complete the square, or formula method. Create equations in one, two or more variables to solve problems and to represent relationships between quantities; graph equations on coordinate axes with labels and scales. Understand a function (linear, quadratic, exponential), and use function notation, to evaluate for inputs in their domains, and interpret statements that use function notation in terms of a context. Write arithmetic and geometric sequences both recursively and with an explicit formula, and use them to model situations, and translate between the two of them. Understand and apply Pythagorean theorem.

PRIMARY TEXTBOOKS AND OTHER RESOURCES:

ALGEBRA 1— Common Core (Big Ideas Learning, 2022)

Ron Larson and Laurie Boswell, Algebra 1 – Resources by chapter

Ron Larson and Laurie Boswell, Algebra 1 – Assessment Book

Ron Larson and Laurie Boswell, Algebra 1 – Practice workbook and Test Preparation

www.bigideasmath.com

Desmos, Geogebra, mathpad, IXL math, Khan academy, and other online websites.

GRADING SYSTEM/ASSESSMENT:

Tests and Quarterly Exams are announced in advance. Pop Quizzes are unannounced and can be given at any time during the class so students must come to class prepared. ALL Tests, Exams, and Quizzes are cumulative so students are responsible for staying current and prepared of the previous scopes and lessons learned.

Homework/Classwork/Seatwork are graded based on completion and completion by the due dates. Students are responsible for checking the assignments' due dates posted on Google Classroom. Students are expected to be prepared to turn-in any work by the due date of class time, even if the Teacher did not collect the work at the due date. Actual work turn-in may be after the original due date, in which any incomplete work is well late. Any missing, incomplete or late work is counted with 10% or more penalty with due dates as posted on the Google Classroom. Students MUST submit "Mark as Done" in Google Classroom for each assignment posted. Not submitting "Done" counts as Incomplete with 10% penalty. An additional 10% are penalized for each day for late turn-in work. Actual work turn-in may be after the original due date, in which any incomplete work is well late. No late work is accepted 3 days after the due dates posted. Students who are absent are responsible for keeping up with the class by doing the work as assigned on Google Classroom.

Students who miss the scheduled Test or Quarterly Exam must make up the exam on return at the earliest. If the student does not make-up the exam at the earliest on return, then a penalty may be deducted from the exam score. The make-up test/exam may be different and more challenging than the originally scheduled test/exam. The student grades are assigned as follows:

1. Tests and Pop Quizzes	30%
2. Homework/Classwork/Seatwork /Projects	30%
3. Quarterly Exam	30%
4. Deportment	10%
Total Grade	100%

ADDITIONAL INFORMATION:

Please always check Google Classroom for homework and announcements. Regular correspondences are conducted with the school's Gmail. A Class link/code: will be given for students to join Google classroom.

Students are required to come to class prepared with at least the standard school supplies:

Stationary:

1. Notebook - A Decent Notebook At least 60 to 80 pages - the wire bind ones are very convenient for the students to take notes during every lesson and to do some examples before they start with the classwork or homework assignments

2. File A 60 to 80 Plastic Pocket folder (Flip file) is preferred to keep all tear out assignments and tests together for the whole year
 3. Ruler
 4. Blue/black pen and pencil (only pens are allowed during tests)
 5. Red pen for marking
 6. Home online access (Computer/Laptop/Notepad/) to get into Google Classroom and other online websites. Codes will be given later on to get access to the Algebra 1 E-book.
 7. Calculator: The CASIO fx-991ES Plus NATURAL-V.P.A.M is suggested to use in Grades 8 (You will be informed when to bring it to school).
- Other resources may be required when instructed by your teacher.

ACADEMIC DISHONESTY:

Academic Dishonesty means employing a method or technique or engaging in conduct in an academic endeavor that contravenes the standards of ethical integrity expected at DIS.

Academic dishonesty includes but is not limited to the following:

- Purposely incorporating the ideas, words of sentences, paragraphs, or parts thereof without appropriate acknowledgment and representing the product as one's work;
- Representing another's intellectual work, such as photographs, paintings, drawings, sculpture, research, or the like, as one's own, including failure to attribute content to an AI.
- Employing a tutor, using Artificial Intelligence without acknowledgment, getting a parent to write a paper or do an assignment, and paying for an essay to be written by someone else and presented as the student's work.
- Committing any act that a reasonable person would conclude, when informed of the evidence, to be a dishonest means of obtaining or attempting to obtain credit for academic work.

Any act of academic dishonesty will result in an automatic zero on the entire assignment/learning task.

WEEKLY SCHEDULE

First Quarter Tentative Course Content

Week & Date	Topics / Projects / Assessments
Week 1 Aug 10 - 14	Monday Class Preparation ~ Student Holiday Tuesday Morning Assembly Friday Opening Mass & Assumption of Our Lady 8:00
Week 2 Aug 17 - 21	1-1 Solving Simple Equations 1-2 Solving Multiple-Step Equations 1-3 Modeling Quantities Weekly Test
Week 3 Aug 24 - 28	1-4 Accuracy with Measurements 1-5 Solving Equations with Variables on Both Sides 1-6 Solving Absolute Value Equations Weekly Test
Week 4 Aug 31 - Sep 4	1-7 Rewriting Equations and Formulas 2-1 Writing and Graphing Inequalities 2-2 Solving Inequalities Using addition or Subtraction Weekly Test
Week 5 Sep 7 - 11	2-3 Solving Inequalities Using Multiplication or Division 2-4 Solving Multi-Step Inequalities 2-5 Solving Compound Inequalities 2-6 Solving Absolute Value Inequalities Weekly Test
Week 6 Sep 14 - 18	3-1 Functions 3-2 Characteristics of Functions 3-3 Linear Functions Weekly Test
Week 7 Sep 21 - 25	T-W-Th Pre-Exam Days 3-4 Function Notation 3-5 Graphing Linear Equations in Standard Form 3-6 Graphing Linear Equations in Slope-Intercept Form Friday Moon Festival ~ Public Holiday
Week 8 Sep 28 - Oct 2	Monday Confucius' Birthday ~ Public Holiday 3-7 Transformations of Linear Functions 3-8 Graphing Absolute Value Functions Thursday Major Exams Day 1 Friday Major Exams Day 2

Week 9 Oct 5 - 9	Monday Record Day ~ Student Holiday T-W-Th Teachers Conference ~ Student Holiday Friday Double 10 Day ~ Public Holiday
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Second Quarter Tentative Course Content

Week & Date	Topics / Projects / Assessments
Week 1 (10) Oct 12 - 16	4-1 Writing Equations in Slope-Intercept Form 4-2 Writing Equations in Point-Slope Form 4-3 Writing Equations of Parallel and Perpendicular Lines Weekly Test
Week 2 (11) Oct 19 - 23	4-4 Scatter Plots and Lines of Fit 4-5 Analyzing Lines of Fit 4-6 Arithmetic Sequences Weekly Test
Week 3 (12) Oct 26 - 30	Monday Retrocession Day ~ Public Holiday 4-7 Piecewise Functions 5-1 Solving Systems of Linear Equations by Graphing 5-2 Solving Systems of Linear Equations by Substitution Weekly Test
Week 4 (13) Nov 2 - 6	5-3 Solving Systems of Linear Equations by Elimination 5-4 Solving Special Systems of Linear Equations 5-5 Solving Equations by Graphing Weekly Test
Week 5 (14) Nov 9 - 13	5-6 Graphing Linear Inequalities in Two Variables 5-7 Systems of Linear Inequalities 6-1 Properties of Exponents Weekly Test
Week 6 (15) Nov 16 - 20	6-2 Radical and Rational Exponents 6-3 Exponential Functions Weekly Test
Week 7 (16) Nov 23 - 27	T-W-Th Pre-Exam Days 6-4 Exponential Growth and Decay 6-5 Solving Exponential Equations Weekly Test Friday Grade 12 Exams
Week 8 (17) Nov 30 - Dec 4	Monday Grade 12 Exams 6-6 Geometric Sequences 6-7 Recursively Defined Sequences Weekly Test

Week 9 (18) Dec 7 - Dec 11	Monday TBD Tuesday Foundation Day Mass 9:00, Cutting of the Cake Ceremony, Christmas Fair, (Whole day) Wednesday TBD Thursday Major Final Exams half day Friday Major Final Exams half day
Dec 14 to Jan 1 Christmas Break	

Third Quarter Tentative Course Content

Week & Date	Topics / Projects / Assessments
Week 1 (19) Jan 4 - Jan 8	Monday Record Day ~ Student Holiday 7-1 Adding and Subtracting Polynomials 7-2 Multiplying and Dividing Polynomials Weekly Test Friday New Year Mass at 8:00
Week 2 (20) Jan 11 - Jan 15	7-3 Special Product of Polynomials 7-4 Solving Polynomial Equations in Factored Form Weekly Test
Week 3 (21) Jan 18 - Jan 22	7-5 Factoring $x^2 + bx + c$ 7-6 Factoring $ax^2 + bx + c$ Weekly Test
Week 4 (22) Jan 25 - Jan 29	7-7 Factoring Special Products 7-8 Factoring Polynomials Completely Weekly Test
Week 5 (23) Feb 1 - Feb 5	Thursday Little New Year's Eve ~ Public Holiday Friday Lunar New Year ~ Public Holiday
Feb 8 to 12: Chinese New Year Holiday	
Week 6 (24) Feb 15 - Feb 19	8-1 Graphing $f(x) = ax^2$ 8-2 Graphing $f(x) = ax^2 + c$ Weekly Test
Week 7 (25) Feb 22 - Feb 26	22-26 IOWA Assessments 8-3 Graphing $f(x) = ax^2 + bx + c$ 8-4 Graphing $f(x) = a(x - h)^2 + k$ Weekly Test
Week 8 (26)	Monday Memorial Day ~ Public Holiday

Mar 1 - Mar 5	T-W-Th Pre-Exam Days 8-5 Using Intercept Form Weekly Test
Week 9 (27) Mar 8 - Mar 12	8-6 Comparing Linear, Exponential, and Quadratic Functions
Week 10 (28) Mar 15 - Mar 19	Review for Quarter 3 Exam
Week 11 (29) Mar 22- Mar 26	Tuesday Major Final Exams half day Wednesday Major Final Exams half day Thurs - Fri Easter Break (Spring Break) ~ Public Holiday
<i>March 25 to April 2 Easter & Spring Break</i>	

Fourth Quarter Tentative Course Content

Week & Date	Topics / Projects / Assessments
Week 1 (30) Apr 5 - Apr 9	Monday Tomb Sweeping Day ~ Public Holiday Tuesday Children's Day ~ Public Holiday
Week 2 (31) Apr 12 - Apr 16	9-1 Properties of Radicals 9-2 Solving Quadratic Equations by Graphing 9-3 Solving Quadratic Equations Using Square Roots Weekly Test
Week 3 (32) Apr 19 - Apr 23	19 - 23 AP Mock Exams 9-4 Solving Quadratic Equations by Completing the Square 9-5 Solving Quadratic Equations Using the Quadratic Formula 9-6 Solving Nonlinear Systems of Equations Weekly Test
Week 4 (33) Apr 26 - Apr 30	T-W-Th Pre-Exam Days 10-1 Graphing Square Root Functions 10-2 Graphing Cube Root Functions 10-3 Solving Radical Equations Weekly Test Friday Labor Day ~ Public Holiday
Week 5 (34) May 3 - May 7	3 - 7 Final Exams (K, Gr. 5, 8, & 12 Only) 10-4 Inverse of A Function 11-1 Measure of Center and Variation 11-2 Box-and-Whisker Plots 11-3 Shapes of Distributions

	3 - 14 AP Exams
Week 6 (35) May 10 - May 14	3 - 14 AP Exams 11-4 Two-Way Tables 11-5 Choosing a Data Display Wednesday Major Final Exams Undergraduates half day Thursday Major Final Exams Undergraduates half day Friday Record Day ~ Student Holiday
Week 7 (36) May 17 - May 21	Monday Gr. 12 Recollection (Morning) Monday Baccalaureate Mass (Afternoon, Schoolwide) Wednesday House Sports Day Thursday High School Field Trip Friday House Culminating Activity All Week Student Clearance Days & Special Events
Week 8 (37) May 24 - May 28	Monday Middle & High School Sports Day Monday LS Field Trip Tuesday Kindergarten Graduation/Gr. 5 Promotion Wednesday Gr. 8 Graduation and Gr. 12 Graduation Thursday Pre-Kindergarten & Gr. 1 - 4, 6 & 7, 9-11 Recognition Friday Last Day of School for Students