

# Algebra 2

Kalani High School, School Year 2010–2011

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**OBJECTIVES:** Through a second course in algebra, you will deepen and extend your understanding of linear, direct proportional, reciprocal, exponential, and quadratic relationships whose study was begun in earlier courses, and you will be encouraged to view them as classes of functions and equations and objects of study in their own right. The study of linear phenomena, begun in middle school and expanded in Algebra 1, serves as a starting point for this course, while the introduction of complex numbers opens the door to the understanding and solution of all quadratic equations and their related functions. Power, root, polynomial, and rational functions, expressions, and equations increase your experience with non-linear behavior and its representation. In this course, you will be asked to compare and contrast the properties of all of these different algebraic forms, to relate changes in the algebraic structure of each function to transformations of its graphical representation, and to recognize and solve problems that can be modeled using this range of functions. As a result, you will be able to do all of the following upon successful completion of this course.

- Understand numbers, ways of representing numbers, relationships among numbers, and number systems.
- Understand meanings of operations and how they relate to one another.
- Compute fluently and make reasonable estimates.
- Understand patterns, relations, and functions.
- Represent and analyze mathematical situations and structures using algebraic symbols.
- Use mathematical models to represent and understand quantitative relationships.
- Analyze change in various contexts.
- Specify locations and describe spatial relationships using coordinate geometry and other representational systems.
- Apply transformations and use symmetry to analyze mathematical situations.

**MATERIALS:** It is expected that you come to class prepared with the following materials each day.

- Several pencils and an eraser
- A quad ruled (graph paper) composition book for notes and homework
- A folder or binder with a specific section for this class for you to store your loose leaf handouts and papers

**STANDARDS AND GRADING:** In spite of all the hype and hoopla surrounding educational standards and benchmarks, they are nothing more than statements of what everyone should know and be able to do at the end of a course of study: Standards describe what you should understand and benchmarks are the skills that demonstrate that understanding. While there have been many different sets of standards proposed and adopted for secondary school mathematics, those that have been consulted for

the Algebra 2 curriculum at Kalani High School are the Hawaii Content and Performance Standards III (HCPS3, the American Diploma Project (ADP) standards of Achieve, Inc., the Common Core State Standards Initiative (CCSI), and the standards of the National Council of Teachers of Mathematics (NCTM).

While standards and benchmarks may not be entirely new, standards-based grading is. As we make the transition from a traditional to a standards-based grading system, some aspects of how your grade will be computed may be new, while many will continue to be familiar and conform to what you have come to expect from a mathematics class.

- Your grade will be computed quarterly, with all four quarters averaged to produce a final year grade. Because of the sequential and cumulative nature of mathematics, students who are not successful in Algebra 2 inevitably experience great difficulty in subsequent mathematics classes. Thus, semester and final year grades of C or better are required for advancement to the next mathematics course in sequence.

Average	Grade
90%–100%	A
80%–89%	B
70%–79%	C
55%–69%	D
0%–54%	F

- Quarterly grades are computed using a point system to include daily classwork, homework, and warm-up assignments; assessments (quizzes and tests) and journal entries; and occasional projects and presentations. Rather than receiving a single composite score on each assessment, you will receive a sub-grade for each standard addressed. Quizzes will generally address single standards, while tests will address learning units or groups of standards organized around a common theme. Standards will overlap from unit to unit to encourage ongoing review and retention, and to give you multiple opportunities to demonstrate their mastery of the course standards.

**LATE WORK:** With the exception of daily in-class assignments, all work is due at the *start* of the class period. Assignments turned in after the start of the period will be considered late, and will be penalized by a factor of  $\left(\frac{1}{2}\right)^d$ , where  $d$  represents the number of days after the deadline that the work is submitted. Assignments turned in up to one day late, for example, will be penalized by a factor of  $\left(\frac{1}{2}\right)^1 = \frac{1}{2}$ , i.e., the assignment will be graded and the score then multiplied by  $\frac{1}{2}$ . Work turned in two days late will be penalized by a factor of  $\left(\frac{1}{2}\right)^2 = \frac{1}{4}$ . Work turned in three days late will be penalized by a factor of  $\left(\frac{1}{2}\right)^3 = \frac{1}{8}$ , and so on.

**ABSENCES:** Occasional absences, whether planned or unplanned, are inevitable, and you will find that as long as you are proactive—you discuss things with me *before* your absence if possible, or *before* class on the day of your return if not—reasonable accommodations and arrangements can usually be made. As a general rule, the more proactive you are, the more flexible you can expect me to be.

- If your absence is anticipated (field trip, athletic competition, doctor’s appointment, etc.), you must make prior arrangements for all work that is due on the day of the absence to be turned in on that day—give it to a friend, ask that it be put in my box in the main office, or submit it in person before you leave. Any tests or quizzes given on that day are expected to be made up by the end of the school day after your activity. Any tests or quizzes given on the day following your activity are expected to be taken with the rest of the class as usual.
- If the absence is unanticipated (illness, accident, family emergency, etc.), you are expected to see me before class on the day that you return to make specific arrangements for completing missed work. As a general rule of thumb, you will have as many days to make up missed work as you were absent.

**EXPECTATIONS AND CONSEQUENCES FOR BEHAVIOR:** Please remember that this is *your* class. The behavior and participation of each of you will shape the type of learning that will occur. Since your behavior affects everyone else's experience, each one of you is expected to assist with classroom management. In order to maintain a smoothly running, efficient, and effective classroom in which everyone has an opportunity to succeed, it is expected that you do the following while in class (in addition to following all school and Department of Education rules as well as the Golden Rule<sup>1</sup>).

- Turn off and securely stow all electronic equipment and accessories with the exception of scientific calculators or computers when specifically allowed.
- Refrain from eating and drinking anything except water during class.
- Be seated and ready to begin working once the bell rings and remain seated within the classroom for the duration of the period unless given permission by me.
- Be attentive, quiet, and courteous during instruction and class discussions.
- Use language that is considerate and classy: Do not swear or conduct yourself in a manner that is offensive or suggestive.

Those who choose not to meet these expectations can expect to receive a consequence commensurate with the severity of their actions to possibly include one or more of the following.

1. A warning
2. Parents or guardians contacted
3. A disciplinary referral
4. When applicable . . .
  - An outstanding obligation for lost, damaged, or destroyed school property
  - Contraband articles confiscated
  - Loss of the privilege of participating in, and receiving credit for an in-class activity

**EXTRA HELP:** You are strongly encouraged to seek frequent extra help as needed on an informal or formal basis by arrangement with me. **Please be aware, however, that extra help is not intended to replace in-class effort and participation—the level of assistance you will receive outside of class will be dependent upon your attitude (positive), attentiveness (awake and alert), engagement (actively listening and taking notes), commitment (trying hard every day), and behavior (good) while in class.**

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<sup>1</sup>Do unto others as you would have them do unto you.