

	<b>Hawai'i Algebra I End-of-Course Exam Performance Level Descriptors</b>
Well Below Proficiency	<p>A student performing at the Well Below Proficiency level may demonstrate the following:</p> <ul style="list-style-type: none"> <li>• Solve a simple linear equation; recognize a transformation of a basic quadratic equation; identify intersection points of the graphs of two functions as the solutions. Limit to linear, quadratic and absolute value; graph linear inequalities in one variable.</li> <li>• Correctly use function notation; identify slopes and graphs of a linear function and graphs of quadratic functions; compare properties of two linear or quadratic functions each represented in the same way.</li> <li>• Identify linear and quadratic equations and inequalities; identify equations in two or more variables to represent linear and quadratic relationships between quantities; identify parts of a linear or quadratic expression; identify key features of linear or quadratic graphs and tables; identify equivalent forms of a quadratic function; plot and identify data points on a scatter plot; identify the type of linear trend and linear model for the data of a scatter plot.</li> </ul>
Approaches Proficiency	<p>A student performing at the Approaches Proficiency level demonstrates the following:</p> <ul style="list-style-type: none"> <li>• Factor and complete the square of a quadratic expression with a leading coefficient of one; identify the zeros of quadratics in factored form; identify equivalent linear formulas highlighting quantities of interest, show each step in solving a simple equation; solve linear equations and inequalities in one variable; transform a basic quadratic equation to an equivalent form; solve quadratic equations by factoring and taking the square roots; graph systems of linear equations in two variables; identify the x-coordinates of the intersections points of the graphs of two functions as the solutions (limit to linear, quadratic and absolute value); graph linear inequalities in two variables.</li> <li>• Evaluate functions for inputs on their domains; identify a linear function's slope as increasing, decreasing or constant; graph linear and quadratic functions; compare properties of two linear or quadratic functions each represented in a different way.</li> <li>• Identify appropriate quantities for the purpose of descriptive modeling; create linear and quadratic equations and inequalities in one variable; create equations in two or more variables to represent linear and quadratic relationships between quantities; interpret parts of a linear or quadratic expression; identify key features of linear or quadratic graphs and tables, and sketch graphs showing key features; determine the domain of a function; factor and complete the square of a quadratic function with a leading coefficient of one; identify an explicit linear or quadratic expression for a calculation from a context; calculate parameters of a linear or quadratic function; identify a linear or quadratic function that could fit a set of data; represent data on two quantitative variables on a scatter plot; identify either the slope or the y-intercept of a linear function for a scatter plot that suggests a linear association; calculate the slope of a linear model.</li> </ul>
Meets Proficiency	<p>A student performing at the Meets Proficiency level demonstrates the following:</p> <ul style="list-style-type: none"> <li>• Factor a quadratic expression with a leading coefficient of one to reveal its zeros; completes the square of a quadratic expression with a leading coefficient of one, to reveal its maximum or minimum; identify zeros of factorable quadratics and use the zeros to construct a rough graph ; rearrange linear formulas to highlight a quantity of interest; explain each step in solving a simple equation and construct a viable argument to justify a solution method; solve linear equations and inequalities in one variable, including equations with coefficients represented by letters; use the method of completing the square to transform basic quadratic equation; solve quadratic equations by inspection, taking square roots, completing the square, the quadratic formula, and factoring; solve systems of two linear equations in two variables using multiple methods; explain why the x-coordinates of the intersection points of the</li> </ul>

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	<p>graphs of two functions are the solutions; approximate solutions, use technology, tables of values, or finding successive approximations (limit to linear, quadratic and absolute value functions only); graph the solution set to a system of linear inequalities in two variables.</p> <ul style="list-style-type: none"> <li>• Evaluate and interpret functions for inputs on their domains; calculate and interpret the average rate of change of a function; graph linear and quadratic functions to show intercepts, maxima and minima; compare properties of two linear and quadratic functions each represented in a different way; define appropriate quantities for the purpose of descriptive modeling.</li> <li>• Create linear and quadratic equations and inequalities in one variable and use them to solve problems; create equations in two or more variables to represent linear and quadratic relationships between quantities, graph equations on coordinate axes with labels and scales; interpret parts of a linear and quadratic expression; interpret key features of linear and quadratic graphs and tables, and sketch graphs showing key features given a verbal description of the relationship; relate the domain of a function to its graph; show zeros, extreme values, and symmetry of a graph of a quadratic function using factoring and completing the square; determine an explicit linear or quadratic expression or steps for calculation from a context; interpret parameters in a linear and quadratic function in terms of a context, such as the constant term and leading coefficient of quadratics; fit a linear or quadratic function to a set of data, use linear or quadratic functions fitted to data to solve problems in the context; represent data on two quantitative variables on a scatter plot and describe how the variables are related; fit a linear function for a scatter plot that suggest a linear association; interpret the slope and the intercept of a linear model in the context of the data.</li> </ul>
<p>Exceeds Proficiency</p>	<p>A student performing at the Exceeds Proficiency level demonstrates the following:</p> <ul style="list-style-type: none"> <li>• Factor a quadratic expression with a leading coefficient other than one, to reveal its zeros; complete the square of a quadratic expression with a leading coefficient other than one to reveal its maximum and minimum; identify the zeros from the graph of a quadratic and use them to create a quadratic expression in factored form; rearrange linear and quadratic formulas to highlight a quantity of interest; explain each step in solving a complex equation and construct a viable argument to justify a solution method; use the method of completing the square to transform any quadratic equation with a leading coefficient other than one; apply and analyze real solutions to quadratic equations in real world context; create and solve systems of two linear equations in two variables in real world contexts; analyze the x-coordinates of the intersection points of the graphs of two functions; approximate solutions, use technology, table of values, or finding successive approximations (limit to linear, quadratic and absolute value); analyze the solution set to the graph of a system of linear inequalities in two variables.</li> <li>• Interpret functions for inputs on their domains in terms of a context and real world application; interpret the behavior of functions over intervals of time based on the rate of change at each interval; graph linear and quadratic functions, and analyze intercepts, maxima and minima; analyze how changes in functions affect properties when each is represented in a different way.</li> <li>• Define and analyze appropriate quantities for the purpose of descriptive modeling; create linear and quadratic equations and inequalities in one variable and use them to solve complex problems; create and explain all components of equations in two or more variables to represent linear and quadratic relationships, and relate its graph to the equation; explain how parts of a linear and quadratic expression are represented in its graph; interpret and extract generalizations about key features of linear and</li> </ul>

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	<p>quadratic graphs and tables, sketch graphs showing key features given a verbal description of the relationship; evaluate the domain of a function to its graph, and explain how the function would change if the domain changes; interpret zeros, extreme values, and symmetry of a graph of a quadratic function in terms of a context; explain how a linear or quadratic expression or steps for calculation defines a specific context; describe how changes in the parameters of a linear and quadratic function manifest in the function's notation; fit a linear or quadratic function to a set of data, use linear or quadratic functions fitted to data to solve problems in the context, and explain how a change in the context can affect the function; represent data on two quantitative variables on a scatter plot and explain how a function could fit the points of the scatter plot; analyze the fit of a linear function for a scatter plot that suggests a linear association; extract generalizations about the slope and intercept in the context of the data.</p>