|  |  |  |  |
| --- | --- | --- | --- |
| **LG #** | **A212** | **Standards:** | **G-GPE.1.2, N-CN.1.1, N-CN.1.2, N-CN.3.7, A-REI.2.4** |
| **4.0** | **In addition to Score 3.0, in-depth inferences and applications that go beyond instruction to the standard.**  **The student will be able to:**   * Graph the focus, directrix, and parabola when given its equation. * Simplify complex numbers under the operation of division.   **No major errors or omissions regarding the score 4.0 content.** | | |
| **3.5** | In addition to 3.0, in-depth inferences and applications with partial success. | | |
| **3.0** | **Students will be able to derive complex solutions from quadratic functions and perform operations on complex numbers.**  **The student will be able to:**   * Use the relation i² = –1 and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers (N-CN.1.2) * Solve quadratic equations with real coefficients that have complex solutions. (N-CN.3.7) * Derive the equation of a parabola given a focus and directrix. (G-GPE.1.2) * Use the method of completing the square to transform any quadratic equation in x into an equation of the form that has the same solutions. (A-REI.2.4a) * Derive the quadratic formula from a quadratic equation of the form . (A-REI.2.4a) * Recognize when the quadratic formula gives complex solutions and write them as a±bi for real numbers a and b. (A-REI.2.4b)   **No major errors or omissions regarding the score 3.0 content (simple or complex).** | | |
| **2.5** | No major errors or omissions regarding 2.0 content and partial knowledge of 3.0 content. | | |
| **2.0** | **The student recognizes and describes specific terminology such as:**   |  |  |  | | --- | --- | --- | | * Complex Number | * Directrix | * Focus | | * Imaginary Number | * Parabola | * Focal Chord | | * Real Number |  |  |   **The student will be able to:**   * Know there is a complex number i such that i² = –1, and every complex number has the form   a + bi (a and b are real numbers). (N-CN.1.1)   * Solve quadratic equations by inspection taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. (A-REI.2.4b) | | |
| **1.5** | Partial knowledge of the score 2.0 content, but major errors or omissions regarding score 3.0 content. | | |
| **1.0** | With partial understanding of some of the simpler details and processes and some of the more complex ideas and processes. | | |
| **0.5** | With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes. | | |
| **0.0** | Even with help, no understanding or skill is demonstrated | | |