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| **LG #** | **A207** | **Standards:** | **A-SSE.2.4, F-BF.1.1, F-BF.1.2, F-BF.2.a,b, F-LE.1.4, F-LE.2.5** |
| **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:**   * Justify using properties of exponents why and are equivalent. * Ilastrate how a simple geometric transformation changes a growth graph to a decay graph.   **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 construct, compare, and interpret exponential and logarithmic models, including building functions that model a relationship from an arithmetic, geometric, or recursive sequence or series.**  **The student will be able to:**   * Write an explicit and/or recursive expression of a function to describe a real-world problem. (F-BF.1.1.a) * Combine standard function types using arithmetic operations. (F-BF.1.1.b) * Write arithmetic and geometric sequences both recursively and with an explicit formula. (F-BF.1.2) * Use arithmetic and geometric sequences both recursively and with an explicit formula to model situations. (F-BF.1.2) * Translate between recursive and explicit forms of geometric and arithmetic sequences. (F-BF.1.2) * Express the solution of the exponential model , where a, c, and d are numbers and the base b is 2, 10, or e. (F-LE.1.4) * Interpret the parameters in a linear or exponential function in terms of a context.   (F-LE.2.5)   * Derive the formula for the sum of a finite geometric series when the common ratio is not 1. (A-SSE.2.4)   **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:**   |  |  |  | | --- | --- | --- | | * Geometric Sequence | * Common Logarithm | * Logarithm | | * Arithmetic Sequence | * Exponential Growth | * Natural Logarithm | | * Geometric Series | * Exponential Decay | * Common Difference | | * Change of Base formula * Term | * Exponential * Recursive Rule | * Common Ratio * Explicit Rule |   **The student will be able to:**   * Determine an explicit expression or a recursive process for a function. (F-BF.1.1.a) * Recognize arithmetic and geometric sequences. (F-BF.1.2) * Evaluate a logarithm using technology. (F-LE.1.4) * Use the Change of Base formula. (F-BF.2.a) * Use the formula for the sum of a finite geometric series (When the common ratio is not 1) to solve problems. (A-SSE.2.4) | | |
| **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 | | |