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| **LG #** | **A107** | **Standards:** | **F-BF.1.1a, b; F-BF.2.3** |
| **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:**   * Construct a recursively defined function from an explicit function and vice versa.   **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 build a function that models a relationship between two quantities using function transformations**  **The student will be able to:**   * [Write a rule for an arithmetic sequence. (F-BF.1.1a)](http://www.cpalms.org/Public/PreviewResource/Preview/68326) * Determine whether a function to be built from context is explicit or recursive. (F-BF.1.1a) * Explain how the value of “**k**” translates the original graph for [linear](http://www.cpalms.org/Public/PreviewResource/Preview/62603), [quadratic](http://www.cpalms.org/Public/PreviewResource/Preview/68611) and [absolute value functions](http://www.cpalms.org/Public/PreviewResource/Preview/68640) when replacing f(x) by f(x) + k, k{f(x)}, f(kx) and f(x + k). (F-BF.2.3) * [Determine the value of “**k**” when given the graph of a transformed function. (F-BF.2.3)](http://www.cpalms.org/Public/PreviewResource/Preview/70307) * Use graphing technology to experiment and illustrate an explanation of the effects of “**k**” on the graph. (F-BF.2.3)   **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:**   |  |  |  | | --- | --- | --- | | * Explicit Function | * Quadratic Function |  | | * Recursive Function | * Absolute Value Function |  | | * Parent Function | * Translation |  | | * Linear Function | * Arithmetic Sequence |  |   **The student will be able to:**   * [Write a rule for a linear function. (F-BF.1.1a)](http://www.cpalms.org/Public/PreviewResource/Preview/60559) * Combine standard function types using arithmetic operations. For example, f(x) = 2x +3 so f(x)+ 4 = (2x +3) + 4. (F-BF.1.1b) * Graph linear parent function. (F-BF.2.3) * Graph quadratic parent function. (F-BF.2.3) * Graph absolute value parent function. (F-BF.2.3) | | |
| **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 | | |