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| **LG #** | **AF07** | **Standards:** | **F-TF.2.5, F-TF.2.6, F-TF.2.7** |
| **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:*** Create a piece-wise function that includes at least one trigonometric function to model periodic phenomena.

**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 model periodic phenomena using trigonometric functions****The student will be able to:*** Write trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline(F-TF.2.5)
* Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse function to be constructed (F-TF.2.6)
* Use inverse functions to solve trigonometric equations that arise in modeling contexts (F-TF.2.7)
* Interpret the solutions of trigonometric functions using technology (F-TF.2.7)

**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:**

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| --- | --- | --- |
| * Periodic phenomena
 | * Amplitude
 | * Frequency
 |
| * Midline
 | * Domain
 | * Increasing
 |
| * Decreasing
 | * Inverse
 | * Oscillating
 |
| * Sinusoidal
 | * Phase shift
 | * Vertical displacement
 |

**The student will be able to:*** Choose trigonometric functions to model periodic phenomena(F-TF.2.5)
* Understand when a trigonometric function is increasing or decreasing (F-TF.2.6)
* Use inverse functions to solve trigonometric equations (F-TF.2.7)
* Evaluate the solutions of trigonometric functions using technology(F-TF.2.7)
 |
| **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 |