Series and Conics

Instructional Focus: Explore sequences

	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Recursive and Explicit Functions (F.BF.1a, F.IF.3, A.SSE.4)	Can extend thinking beyond the standard, including tasks that may involve one of the following: • Designing • Connecting • Synthesizing • Applying • Justifying • Critiquing • Analyzing • Creating • Proving	Write an explicit formula to model a situation in context. Use an explicit formula to find any term(s) in a sequence given two non-consecutive terms.	Write an explicit formula to model a situation in context. Use an explicit and recursive function to find any term(s) in a sequence.	Write an explicit and recursive function for an arithmetic or geometric sequence. Identify characteristics (first term, common ratio, etc) of an arithmetic or geometric sequence.	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1

Series and Conics

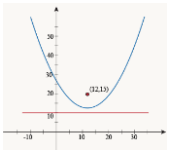
Instructional Focus: Use finite and infinite formulas to solve problems

	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Finite and infinite formulas (A.SSE.4)	Can extend thinking beyond the standard, including tasks that may involve one of the following: • Designing • Connecting • Synthesizing • Applying • Justifying • Critiquing • Analyzing • Creating • Proving	Use the finite and infinite formulas for geometric series to **solve real-world problems**	Use the finite and infinite formulas for geometric series to find: • sum • **first term** • **last term** • **rate**	**Find the sum**, using the finite and infinite formulas, for geometric series	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1

A.SSE.4 (edited) Use the finite **and infinite formulas** for geometric series to solve problems. For example, calculate mortgage payments. ★

Series and Conics

Instructional Focus: Derive the equation of ellipses and hyperbolas

	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Conics (G.GPE2, G.GPE.3) 	Can extend thinking beyond the standard, including tasks that may involve one of the following: • Designing • Connecting • Synthesizing • Applying • Justifying • Critiquing • Analyzing • Creating • Proving	**Write the equation** of a parabola given its focus and directrix. Write the standard equation of an ellipse or hyperbola given the graph, **foci, or general form of the equation**. Identify the center, vertices, **and foci** given the equation of an ellipse or hyperbola	**Identify the equation** of a parabola given its focus and directrix. **Write the standard equation of a hyperbola or ellipse given the graph** Identify the center **and vertices** of an ellipse or hyperbola given the graph or equation	Identify the focus and directix of a parabola **Identify** if a given equation represents an ellipse or hyperbola Identify the **center** of an ellipse or hyperbola given the graph or equation	Little evidence of reasoning or application to solve the problem Does not meet the criteria in a level 1

G.GPE.2 Derive the equation of a parabola given a focus and directrix.

G.GPE.3 (+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.