

## 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)	<p>Can extend thinking beyond the standard, including tasks that may involve one of the following:</p> <ul style="list-style-type: none"> <li>• Designing</li> <li>• Connecting</li> <li>• Synthesizing</li> <li>• Applying</li> <li>• Justifying</li> <li>• Critiquing</li> <li>• Analyzing</li> <li>• Creating</li> <li>• Proving</li> </ul>	<p>Write an explicit formula to model a situation in context.</p> <p>Use an explicit formula to find any term(s) in a sequence <u>given two non-consecutive terms.</u></p>	<p>Write an explicit formula to model a situation <u>in context.</u></p> <p>Use an explicit and recursive function <u>to find any term(s) in a sequence.</u></p>	<p>Write an explicit and recursive function for an <u>arithmetic or geometric sequence.</u></p> <p><u>Identify characteristics</u> (first term, common ratio, etc) of an arithmetic or geometric sequence.</p>	<p>Little evidence of reasoning or application to solve the problem</p> <p>Does not meet the criteria in a level 1</p>

## Series and Conics

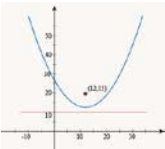
Instructional Focus: Use finite and infinite formulas to solve problems

	4 – Mastery	3 – Proficient	2 - Basic	1 – Below Basic	0 – No Evidence
Finite and infinite formulas (A.SSE.4)	<p>Can extend thinking beyond the standard, including tasks that may involve one of the following:</p> <ul style="list-style-type: none"> <li>• Designing</li> <li>• Connecting</li> <li>• Synthesizing</li> <li>• Applying</li> <li>• Justifying</li> <li>• Critiquing</li> <li>• Analyzing</li> <li>• Creating</li> <li>• Proving</li> </ul>	Use the finite and infinite formulas for geometric series to <b><u>solve real-world problems</u></b>	<p>Use the finite and infinite formulas for geometric series to find:</p> <ul style="list-style-type: none"> <li>• sum</li> <li>• <b><u>first term</u></b></li> <li>• <b><u>last term</u></b></li> <li>• <b><u>rate</u></b></li> </ul>	<b>Find the sum</b> , using the finite and infinite formulas, for geometric series	<p>Little evidence of reasoning or application to solve the problem</p> <p>Does not meet the criteria in a level 1</p>

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.GPE.2, G.GPE.3) 	Can extend thinking beyond the standard, including tasks that may involve one of the following: <ul style="list-style-type: none"> <li>• Designing</li> <li>• Connecting</li> <li>• Synthesizing</li> <li>• Applying</li> <li>• Justifying</li> <li>• Critiquing</li> <li>• Analyzing</li> <li>• Creating</li> <li>• Proving</li> </ul>	<p><b><u>Write the equation</u></b> of a parabola given its focus and directrix.</p> <p>Write the standard equation of an ellipse or hyperbola given the graph, <b><u>foci, or general form of the equation.</u></b></p> <p>Identify the center, vertices, <b><u>and foci</u></b> given the equation of an ellipse or hyperbola</p>	<p><b><u>Identify the equation</u></b> of a parabola given its focus and directrix.</p> <p><b><u>Write the standard equation of a hyperbola or ellipse given the graph</u></b></p> <p>Identify the center <b><u>and vertices</u></b> of an ellipse or hyperbola given the graph or equation</p>	Identify the focus and directrix of a parabola  <p><b><u>Identify</u></b> if a given equation represents an ellipse or hyperbola</p>  Identify the <b><u>center</u></b> 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.