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| Unit 8: Sequences & Series |
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Our Learning Goals:



# Sample Problem:

A certain ball has the property that each time it falls from a height $h$ onto a hard, level surface, it rebounds to a height $rh$ where $0<r<1$. Suppose that the ball is dropped from an initial height of $H$ meters. Assuming the ball continues to bounce, find the total distance that it travels.

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| Additional Support:* Check the teacher web page and Canvas page for notes, activities, and assignments.
* Search the topic on the web. We recommend using Khan Academy and CollegeBoard Student Resources.
* Attend tutorials.
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**We will:**

* Differentiate between arithmetic and geometric sequences and series.
* Determine and apply various tests for convergence on sequences and series.
* Develop power series to represent other functions.
* Manipulate Taylor and MacLauren series

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| Why do we study this?* Series can be used to integrate some functions that cannot be integrated by other methods.
* Physicists use series in fields such as optics, special relativity, and electromagnetism.
* Sequences and series allow us to analyze various phenomena.
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How we will show what we have learned…

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| Formative Assessments | Summative Assessments |
| Ongoing formative assessments during lesson and homework activities will help in monitoring learning and providing feedback for students.  | * Summative assessments to measure learning at the end of concepts will include teacher-made tests and a district common assessment, which includes multiple choice and free response questions.
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