StudyForge
DIGITAL CURRICULUM

Foundations of Math 12

Type: Online

Course Description:

Foundations of Math 12 is intended to help students continue on the path to post secondary studies focused in the arts or humanities. Students in this course will examine big ideas in math including financial planning and probability, with an emphasis on problem solving and critical thinking skills. Specifically, students will cover topics such as Combinatorics, Probability, Regression and Financial Planning.

StudyForge Foundations of Math 12 is intentionally designed for student success, featuring elements such as:

- Video, Audio and Hands-on instruction through videos and interactives
- Practice questions with detailed solutions for self-assessment
- A student notebook that accompanies the instruction, to enhance engagement with course material
- Summative assessments for each module - randomized to allow retests for mastery
- A customized dashboard to let you know which students are most needing your help
- A variety of Inquiry-based projects
- Solution Files & Answer Keys
- And more.

Foundations of Math 12 requires that students have completed the prerequisite course: Foundations of Math 11.

Major Units and Topics:

- Transformations (Fractals & Conics)
- Combinatorics
- Probability
- Regression Analysis
- Financial Planning

Assessments:

- Video Note Package
- Projects
- Practice Questions
- Assignments
- Chapter Tests

Student Requirements:

- Students will need access to a computer (with internet, speakers, mic and camera), printer, pencil, papers and a scientific calculator.
- A graphing calculator is also permitted and recommended, though not required.
    - (Note that there is a built-in graphing calculator in all practice questions.)

Learning Standards Overview:

Content *Students are expected to know the following:*	**Ch 1**	**Ch 2**	**Ch 3**	**Ch 4**	**Ch 5**
Constructions					
Perpendicular bisector, tangents, polygons, tessellations, geometric art				✔	
Conics					
Locus definition and constructions, conic sections, applications				✔	
Fractals					
Understanding fractals as an iteration of a simple instruction				✔	
Constructing and analyzing models of fractals, such as Cantor's dust, Serpinski's triangle, Koch's snowflake				✔	
Connecting fractals with nature				✔	
Representations					

Using technology only					✔
Using characteristics of a graph to identify these functions					✔
Regression Analysis					
Polynomial, exponential, sinusoidal, logarithmic					✔
Applying the appropriate regression model					✔
Combinatorics					
Permutations, combinations, pathways, Pascal's Triangle		✔			
Odds, Probability					
Mutually exclusive, non–mutually exclusive, conditional probability, binomial probability			✔		
Venn diagrams			✔		
Financial Planning					
Developing a personal financial portfolio	✔				
Mortgages	✔				
Risk	✔				
Changing interest rates and/or payments	✔				
Credit cards	✔				
Exploring banking options and financial markets	✔				