MATHEMATICAL MODELS 2, (SYLLABUS REF: 6.4 – 6.7)

Aim:

Introduce exponential functions, some unfamiliar functions and the concepts of asymptotes. Be able to identify, recognize, interpret and find different functions from table of values, written text, graphs, etc. Be more confident in finding features, such as axes intercepts, gradients, zeros, axis of symmetry etc., with and without calculator.

OBJECTIVE:

FUNCTIONS – LINEAR, QUADRATIC, EXPONENTIAL AND "UNFAMILIAR" *(CHAPTER 18-19)*

☐ Confidently use and know the concept of linear functions.

☐ Confidently use and know the concept of quadratic functions.

☐ Confidently use the calculator to find different features, such as axes intercepts, turning points, table of values and, hence, find the axis of symmetry, domain and range.

☐ Confidently use the calculator to find where functions meet.

☐ Understand that finding where function meet is the same as solving the equation when they equal.

☐ Confidently use the notation f(x).

☐ Understand how to identify an exponential function.

☐ The concept of a basic exponential function, both in the form $y = a^x + c$ and as a graph.

☐ The procedure of evaluating exponential functions.

☐ Understand some basic transformations of exponential functions.

☐ Solve problems involving growth and decay.

☐ Understand that percentage increases and decreases are exponential.

☐ The notation of ∞.

☐ Understand the concept of horizontal asymptotes.

☐ Understand the concept of vertical asymptotes.

☐ Know how to find a functions horizontal asymptote.

☐ Know how to find a functions vertical asymptote.

TOK links:

How do we understand the term infinity?

Exponential in real life? Does it continue forever?

ATL

Opening problem with table of values from different functions to identify the family to which it belong.

Videos for introduce concepts.

Test-your-self-quizzes

Assessment

Formative: Homework-test, exit-tags

Summative: Included in the test examination, Friday the 7th December.