

UNIT 2

NUMBER AND ALGEBRA 2, (SYLLABUS REF: 1.7 – 1.9)

Aim:

Be able to recognize, describe (both in words and mathematically) and continue different patterns in mathematics, and to apply them on real life situations.

Objectives:

- Understand that different number patterns can be described in different mathematical models.
- Understand the concept of "number sequence".
- Understand the concept of a member of a number sequence as a "term".
- Understand the concept of "*the* n^{th} term".
- Understand why " n " must be an integer.
- Understand u_n as the term and n as its place in the sequence.
- Understand the difference between an arithmetic and a geometric sequence.
- Recognize an arithmetic sequence from numbers listed.
- Recognize a geometric sequence from numbers listed.
- Recognize an arithmetic sequence from real life situations.
- Recognize a geometric sequence from real life situations.

PROCEDURES OF USING THE GENERAL FORMULA TO FIND:

- A specific term in an arithmetic sequence, both from listed numbers and from real life problems.
- A specific term in a geometric sequence, both from listed numbers and from real life problems.
- " n " when a specific term is given in an arithmetic sequence, both from listed numbers and from real life problems.
- " n " when a specific term is given in a geometric sequence, both from listed numbers and from real life problems.
- Apply the knowledge of solving simultaneous equations on problems involving sequences.

- Apply the knowledge of solving quadratic equations on problems involving sequences.
- Apply the knowledge of compound interest on problems involving sequences.
- Understand the concept of a series as the addition of the terms in a sequence.
- Understand the concept of the sum of a series as the result when performing the addition.

PROCEDURES OF USING THE FORMULA FOR THE SUM TO FIND:

- The sum of terms in an arithmetic sequence (both from listed numbers and from real life problems).
- The sum of the terms in a geometric sequence (both from listed numbers and from real life problems).
- Identifying which formula to use in real life problems.

Chapter 5, A-G

TOK links

How does a proof differ from good reasoning?

Freddie frog is jumping over a road. Will ever reach his goal?

ATL

Opening problem, finding sequences from real life situations.

Finding the general formula for an arithmetic sequence from investigation.

From real life situations, define them as arithmetic or geometric.

Kahoot.

Introduction videos.

Assessment

Formative: Quiz and individual work on examination questions.

Summative: Included in test exam.