Advanced Mathematics 2200
Unit 1: Sequences and Series

Text: Pre-Calculus 11   **Chapter 1**

By the end of this unit, it is expected that students will:

Outcome	Text Book
1. Analyze arithmetic sequences and series to solve problems. ● Identify the assumptions made when defining an arithmetic sequence or series. ● Provide and justify an example of an arithmetic sequence. ● Derive a rule for determining the general term of an arithmetic sequence. ● Determine t_1, d, n, or t_n in a problem that involves an arithmetic sequence or series. ● Describe the relationship between arithmetic and linear functions. ● Derive a rule for determining the sum of n terms of an arithmetic series. ● Determine t_1, d, n, or S_n in a problem that involves an arithmetic series.	Section 1.1 Pages 6 – 21 Section 1.2 Pages 22 – 31
2. Analyze geometric sequences and series to solve problems. ● Identify assumptions made when identifying a geometric sequence or series. ● Provide and justify an example of a geometric sequence. ● Derive a rule for determining the general terms of a geometric sequence. ● Determine t_1, r, n, or t_n in a problem that involves a geometric sequence. ● Derive a rule for determining the sum of n terms of a geometric series. ● Determine t_1, r, n, or t_n in a problem that involves a geometric series. ● Solve a problem that involves a geometric sequence or series. ● Explain why a geometric series is convergent or divergent. ● Generalize, using inductive reasoning, a rule for determining the sum of an infinite geometric series.	Section 1.3 Pages 32 – 45 Section 1.4 Pages 46 – 57 Section 1.5 Pages 58 – 65
◁ **Review** ◁ **Practice Test**	◁ Pages 66 – 68 ◁ Pages 69 – 70