

## Sequences and Series: TIPS Assignment

**SHOW ALL OF YOUR WORK.**

**NO MARKS WILL BE GIVEN TO "GUESS AND CHECK" SOLUTIONS OR SOLUTIONS THAT SIMPLY APPLY A RATIO OR DIFFERENCE REPEATEDLY (5 marks each)**

1. The first 5 terms in a sequence are  $-7, -9, -13, -21, -37$ . Determine the recursive formula for the sequence.
2. The first 5 terms in a sequence are  $4, -19, 50, -157, 464$ . Determine the next three terms in the sequence.
3. The arithmetic series  $1 + 5 + 9 + \dots + t_n$  has a sum of 1770. How many terms does the series have?
4. The 10<sup>th</sup> term of an arithmetic series is 61. The sum of the first 37 terms is 4,255. Determine the 50<sup>th</sup> term.

**BONUS (2 marks)**

The first 5 terms in **simplified form** of a sequence are  $-\frac{7}{6}, \frac{1}{4}, \frac{1}{24}, -\frac{5}{48}, \frac{3}{32}$ . Determine the general term.