Name_____

MCR3U - Unit 7: Sequences and Series Practice Assignment

1. Write the general term formula as a linear function for the given sequence, and then write the next three terms in the sequence: 66, 54, 42, 30, ...

2. Find the general term of the sequence: 7, 13, 19, 25, 31, ...and find t_{50}.

3. The 3rd term of an arithmetic sequence is 7, and the 7th term is 23. Determine t_{20}.

4. Determine the number of terms in the arithmetic sequence: –45, –32, –19, –6, ..., 124.

5. A music hall has 27 seats in the first row, 34 in the second row, 41 seats in row 3, and so on. The last row has 181 seats.
   a) How many seats are in the tenth row of the hall?
   b) How many rows of seats are there?

6. Write the general term of the geometric sequence: 4, –8, 16, –32, ... and find t_7.

7. Given a sequence with $t_1 - =34$ and a common difference between terms of $d + =13$, determine the sum of the first 250 terms.

8. Calculate the sum of the arithmetic series: –396 – 308 – 220 – 132 – ... + 836.

9. Grace works in a toy factory. On the 20th day of work Grace assembled 137 toys. Grace noticed that since starting her job she has managed to increase how many toys she assembles by 3 toys per day. What is the total number of toys Grace has assembled in the first 20 days of her work?

10. Determine S_{10} for the geometric series $6 + 30 + 150 + \ldots$

11. The sum of a geometric sequence 2 – 6 + 18 – 54 + ... – t_n = –29 524. Find the number of terms.

12. Calculate the sum **between** the terms t_4 and t_8 of the geometric series with first term 15 625 and common ratio $\frac{2}{5}$.

    ****(including t_4 and t_8)**