

MCR3U Test #7

Sequences & Series

Name: _____

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Knowledge & Understanding

1. What is the 33rd term of the sequence

18, 11, 4, -3, ...?

2. For each arithmetic sequence, determine:

- i) the general term
- ii) the recursive formula
- iii) t_{11}

31, 20, 9, ...

3. Determine the sum of

$-31 - 35 - 39 - \dots - 403$.

4. Calculate the sum of the geometric series.

$$960 + 480 + 240 + \cdots + 15$$

5. Expand and simplify.

$$(a + 6)^4$$

Application

1. The 7th term of an arithmetic sequence is 53 and the 11th term is 97. Determine the 100th term.

2. At a fish hatchery, fish hatch at different times even though the eggs were all fertilized at the same time. The number of fish that hatched on each of the first four days after fertilization was

2, 10, 50, 250

respectively. If the pattern continues, calculate the total number of fish hatched during the first 10 days.

3. In an amphitheatre, seats are arranged in 50 semicircular rows facing a domed stage. The first row contains 23 seats, and each row contains 4 more seats than the previous row. How many seats are in the amphitheatre?

