

Name _____ raw scaled percent

Math 11 Trimester 2 Exam 2 (137 Points)
Progressions

■ **A. Circle the letter of the correct answer. (5 points each)**

[1] The sequence 3, 6, 12, 24, 48, 96, ... is

- a. arithmetic.
- b. geometric.
- c. neither arithmetic and nor geometric.

[2] The sequence 3, 5, 7, 9, 11, 13, 15, 17, 19, ... is

- a. arithmetic.
- b. geometric.
- c. neither arithmetic and nor geometric.

[3] The sequence 2, 3, 5, 9, 17, 33, 65, ... is

- a. arithmetic.
- b. geometric.
- c. neither arithmetic and nor geometric.

■ **B. Write the first 4 terms of each sequence whose general term is below. (3 points each)**

[1] $a_n = 3 + 2n$

[2] $a_n = 3 \cdot 2^n$

[3] $a_n = n^2$

[4] $a_n = (-1)^n 2^n$

■ C. Answer the following. (11 points each)

[1] The last term of the sequence given by $a_n = n^2 - 18n$ is 40. How many terms are there?

[2] The sum of the first n terms of a sequence is given by $S_n = 3n^2 + n$. Find S_6 .

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[3] In an arithmetic sequence, the 5th term is 22 and the 10th term is 47. Find the 16th term.

[4] In an arithmetic sequence, the sum of the first 10 terms is 155 and the sum of the first 15 terms is 190. Find the 6th term.

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[5] In a certain geometric sequence, each term is positive, the 3rd term is 18 and the 5th term is 162. Find the 8th term.

[6] Find the least number of terms of the geometric sequence 4, 8, 16, 32, ... which must be taken for their sum to exceed 500.

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[7] Find the general term of the sequence 3, 12, 27, 48, 75, 108, 147, 192,

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■ **D. Answer the following. (11 points each)**

[1] The sum of the first n terms of a sequence is given by $S_n = 9n^2 - 4n$. Find the general term of the sequence.

[2] Given that $x, x^2, 1$ are three successive terms of an arithmetic sequence and $x \neq 1$, find the number that is the common difference.

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[3] If $a_n = (-2)^n \left(\frac{1}{2}\right)^{n-1}$, find the sum of the first n terms when n is an even positive integer.