AFM NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sequence/Series Packet DATE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ PER \_\_\_\_\_

NOTE: WORK MUST BE SHOWN TO GET CREDIT FOR THE ANSWER.

Formulas: 

1. Find *a*10 if *a*1 = 6 and *an* =*an*-1 – 14.

2. The second and sixth terms of an arithmetic sequence are 8 and 24, respectively. Find the twentieth term.

1. If the first term of a geometric sequence is 8 and the common ratio is -3, find the eighth term.
2. Find the sum of the first twenty-five terms of the arithmetic sequence: 5, 8, 11, 14, … .
3. Expand and evaluate: 
4. This sequence is arithmetic. Find its EXPLICIT formula. 
5. Find the sum of the first sixteen terms of the following geometric sequence: 

8. Write out the first three terms of the sequence: 

9. Find the first 4 terms of the sequence: 

10. Find an EXPLICIT rule for the following: 

11. Find the sum of the arithmetic series: 

12. Find the sum of the geometric series: 

13. Determine whether the following infinite geometric series converges. If the series converges, determine the

 sum, if not, explain why: 

1. A certain species of tree grows an average of 5.5 cm per week. Write an explicit rule for the sequence that represents the weekly height of this tree in centimeters if the measurements begin when the tree is 8 meters tall.
2. If a person puts 1 cent in a piggy bank on the first day, 2 cents on the second day, 3 cents on the third day, and so forth, how much money will be in the bank after 30 days?
3. An auditorium has 30 rows with 10 seats in the first row, 12 in the second row, 14 in the third row and so forth. How many seats are in the auditorium?
4. A collection of dimes is arranged in a triangular array with 13 coins in the base row, 12 in the next row, 11 in the next row, and so forth with 1 dime in the last row. Find the value of the collection.
5. A brick staircase has a total of 30 steps. The bottom step requires 100 bricks. Each successive step requires two less bricks than the prior step. How many bricks are required for the top step?