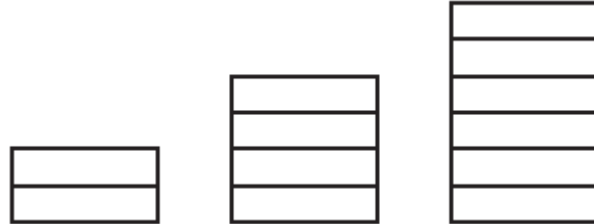


Secondary Math III
Assignment 11.6 Review
Sequences & Series

Name: _____
Period: _____

- Given the sequence $-10, -3, 4, 11, 18, 25, \dots$ what is the 40th term?
- Compute a geometric series with 7 terms, a common ratio of 5, and a first term of 4.
- The first three terms of a sequence are represented by the figures shown. Find the recursive formula for to determine the 4th term in the sequence.



- Decide if the following geometric series have a finite or infinite sum.
 - $\frac{1}{2} \sum_{i=1}^{\infty} \left(\frac{1}{4}\right)^i$
 - $8 \sum_{i=1}^{\infty} \left(\frac{1}{2}\right)^i$
 - $\sum_{i=1}^{\infty} \left(\frac{3}{2}\right)^i$
 - $\sum_{i=1}^{\infty} \left(\frac{3}{8}\right)^i$
- A cold virus infects 10 students at school in the same day. In the following days, the number of students infected with the virus increases at a rate of 12% each day. How many new students are infected on the 7th day?
- What is the sum of the first 72 even natural numbers?
- Compute the series $1 + \frac{2}{3} + \frac{4}{9} + \frac{8}{27} + \frac{16}{81} + \dots$
- Sandra starts a savings plan in which she deposits an increasing amount in the bank each month. The first month she deposits \$35, the second month she deposits \$37, the third month she deposits \$39, and so on. If she continues saving at this rate, how much will she deposit during the 24th month?
- Vince receives \$60 for his birthday. He deposits the money in a savings account and then saves an additional \$10 each month. He decides to calculate how much total money he will have saved after 7 months. This situation is best modeled by what? Sequence or Series? Arithmetic or Geometric?
- Becky buys a car for \$9800. She expects the value of the car to decrease by 25% each year. She wants to figure out the car's value after 10 years. This situation is best modeled by what? Sequence or Series? Arithmetic or Geometric?

11. What is the 20th term in the arithmetic sequence for which $a_1 = 3$ and $d = 7$?

12. The number 173 is what term in the arithmetic sequence $-7, -2, 3, \dots$?

13. What is the common ratio for the geometric sequence $3, 12, 48, 192, \dots$?

14. What is the 6th term in the geometric sequence in which $a_1 = 5$ and $r = 3$

15. What is the sum of the infinite geometric sequence series in which $a_1 = 10$ and $r = -\frac{1}{5}$

16. What is the sum of the infinite geometric series $4 + 3 + \frac{9}{4} + \dots$?

17. What is the 1st term of the infinite geometric series for which $S = 12$ and $r = \frac{1}{6}$

18. Evaluate

$$\sum_{i=1}^{24} 2i - 1$$

19. Use sigma notation to express the series $7 - 14 + 28 - 56 + 112$

20. Write an equation for the n th term of the sequence.

$$-3, 3, 9, 15, 21, \dots$$