Pre-Calculus Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Review 10:2-5 Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour\_\_\_\_\_

Use the following formulas when appropriate

    $\left(\begin{array}{c}n\\r\end{array}\right)=\frac{n!}{r!\left(n-r\right)!}$

   

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| **1:**  **Given:** 1, 5, 9, 13,….Determine the common difference, the nth term, and the 100th term of the arithmetic sequence. |
| **2:** The 12th term of an arithmetic sequence is 32, and the 5th term is 18. Find the common difference, the nth term, and the 20th term. |
| **3: Given**: Determine the common ratio, the fifth term, and the nth term of the geometry sequence. |
| **4:** The common ratio in a geometric sequence is, and the fourth term is. Find the first three terms. |
| **5.** Find the sum |
| **6** Find the sum of the infinite geometric series. |
| **7-8**. Use mathematical induction to prove that 2 + 4 + 6 + … + 2n = n (n + 1) is true for all natural numbers n. |
| **9.** Find first three terms of  and then simplify these terms.  |
| **10.** Evaluate  |