

U5 Day 10 – Sigma Notation HW

Given the explicit formula for a geometric sequence find the first five terms and the 8th term.

1) $a_n = 3^{n-1}$

2) $a_n = -3 \cdot (-5)^{n-1}$

3) $a_n = -243 \cdot \left(-\frac{1}{3}\right)^{n-1}$

4) $a_n = (-6)^{n-1}$

Given the explicit formula for an arithmetic sequence find the first five terms and the term named in the problem.

5) $a_n = -\frac{2}{3} - \frac{1}{3}n$

Find a_{26} .

6) $a_n = \frac{35}{18} - \frac{3}{2}n$

Find a_{24} .

7) $a_n = -1 + 3n$

Find a_{21} .

8) $a_n = -8 - 6n$

Find a_{30} .

Evaluate each arithmetic series described.

9) $\sum_{n=1}^{13} (9n - 9)$

10) $\sum_{m=1}^9 (5m + 4)$

11) $\sum_{m=1}^8 (5m - 11)$

12) $\sum_{k=1}^9 (8k - 12)$

Determine if each geometric series converges or diverges.

13) $-1.1 + 2.75 - 6.875 + 17.1875 \dots$

14) $\frac{7}{4} + \frac{21}{8} + \frac{63}{16} + \frac{189}{32} \dots$

15) $6 + 2 + \frac{2}{3} + \frac{2}{9} \dots$

16) $\frac{625}{27} + \frac{125}{9} + \frac{25}{3} + 5 \dots$

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Evaluate each geometric series described.

$$17) \sum_{n=1}^7 \left(\frac{2}{3}\right)^{n-1}$$

$$18) \sum_{k=1}^9 4^{k-1}$$

$$19) \sum_{n=1}^7 -2 \cdot \left(-\frac{1}{4}\right)^{n-1}$$

$$20) \sum_{m=1}^7 0.2 \cdot (-5)^{m-1}$$

$$21) 4 - 20 + 100 - 500 \dots, n = 6$$

$$22) 2 + 12 + 72 + 432 \dots, n = 6$$

$$23) -2 - 6 - 18 - 54 \dots, n = 8$$

$$24) 1 + 4 + 16 + 64 \dots, n = 7$$