

Arithmetic and Geometric Series HW

Evaluate the series to the given term.

1. $2 + 0.2 + 0.02 + \dots; S_6$

2. $12 - 24 + 48 - 96 + \dots; S_5$

3. $2 + 7 + 12 + \dots; S_8$

4. $1 + 0.01 - 0.98 - \dots; S_5$

5. $\sum_{k=1}^9 256 \left(\frac{1}{2}\right)^{k-1}$

6. $\sum_{k=1}^5 (-3)^{k-1}$

7. $\sum_{x=1}^6 (24 - 9x)$

8. $\sum_{x=1}^4 (-2n + 3)$

Find the sum of each geometric series.

9. $a_1 = 1, a_n = 3125; r = 5$

10. $a_1 = 10, r = \frac{1}{10}, n = 8$

Find the first three terms of each arithmetic series.

11. $a_1 = 6, a_n = 306, S_n = 1716$

12. $n = 21, a_n = 78, S_n = 1008$