

Algebra 2 Honors Extra Fun Problems Section 11.1

1. Give the next term and find a rule for the nth term:

a) $\log 1, \log 10, \log 100, \log 1000, \dots$

b) $\sqrt{3}, 3, 3\sqrt{3}, 9, 9\sqrt{3}, \dots$

2. Write the series in \sum notation:

a) $2 + 5 + 10 + 17 + 26 + 37$

b) $\frac{1}{4} - \frac{1}{9} + \frac{1}{16} - \frac{1}{25} + \dots$

3. The series $\sum_{k=1}^n \left(\frac{1}{k} - \frac{1}{k+1} \right)$ is called a *telescoping series*. By writing out the first few terms, find the sum of this series in terms of n .

