

Arithmetic Series

Day 4

1. Series vs. Sequence

Example 2B:

Given the sum, find the number of terms

Find n such that $S_n = 175$

2. Sum of an Arithmetic Series

Example 3B: Write the series in sigma notation

$$5 + 10 + 15 + 20 + \dots + 100$$

3. Sigma Notation

Example 4B: Find the sum of the series

$$\sum_{i=2}^5 8i$$

4. Sum of an Arithmetic Series in Sigma Notation

Information/Steps

Example 2A: Find the sum of the first 30 terms

$$S_n = 4 + 7 + 10 + 13 + 16 + 19 + \dots$$

Information/Steps

Example 3A: Write the series in sigma notation

$$8 + 16 + 32 + 64$$

Information/Steps

Example 4A: Find the sum of the series

$$\sum_{i=1}^{10} 4i - 9$$

Series

1. Geometric

Example 2B: Find the sum of a series

$$\sum_{i=0}^3 (0.3)^i$$

2. Sum of a Geometric Serie

Example 3: Find the sum of the infinite series

$$\sum_{i=1}^{\infty} 3 \left(\frac{5}{4} \right)^{i-1}$$

3. Infinite Geometric Series

4. Other Series

Information/Steps

Example 2A: Find the sum of a series

$$\sum_{i=1}^4 6(3)^{i-1}$$

Information/Steps

Example 3: Find the sum of the infinite series

$$\sum_{i=1}^{\infty} 3\left(\frac{1}{4}\right)^{i-1}$$

Information/Steps

Example 4: Find the sum of other series

$$\sum_{i=1}^5 i^2 - 4$$