

1. Write the first four terms of each sequence.

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

b) $a_n = \frac{(n+1)!}{n^2}$

2. Find each sum.

$$a) \sum_{i=1}^5 i^3$$

$$b) \sum_{k=2}^4 (k-3)(k+2)$$

3. Express each sum using summation notation. Use 1 as the lower limit of summation and i for the index of summation.

$$a) 5 + 5^2 + 5^3 + \cdots + 5^{12}$$

$$b) \frac{1}{9} + \frac{2}{9^2} + \frac{3}{9^3} + \cdots + \frac{n}{9^n}$$

Q: What turns everything around, but does not move?