Properties of Series

1. \[ \sum c \cdot a_n = c \sum a_n \]  \(\star c = \text{constant}\)

   \[ \sum_{n=1}^{8} 7 \cdot n = 7 \cdot \sum_{n=1}^{8} n \]

   \[ [7,14,21,24,35,42,49,56] \quad 7 \cdot [1,2,3,4,5,6,7,8] \]

   \[ [7,14,21,24,35,42,49,56] \]

2. \[ \sum a_n + b_n = \sum a_n + \sum b_n \]

   \[ \sum_{n=1}^{5} 3n + n^2 = \sum_{n=1}^{5} 3n + \sum_{n=1}^{5} n^2 \]

   \[ [3,6,9,12,15] \quad [1,4,9,16,25] \]

   \[ \text{ADD} \]

   \[ [4,10,18,28,40] \]
0. Solve \( \sum_{n=3}^{10} a_n + b_n \)
   \( a_n = 2^n \)
   \( b_n = 3n - 2 \)

2. Solve \( \sum_{n=1}^{10} a_n \)
   \( a_n = (-1)^n \)

3. Write the following in series notation \( \left( \sum \text{=} ? \right) \)
   \[ 10 + 12 + 14 + 16 + 18 + 20 \]

4. Write the following in series notation \( \left( \sum \text{=} ? \right) \)
   \[ \frac{5}{8} + \frac{5}{9} + \frac{5}{10} + \frac{5}{11} + \ldots + \frac{5}{34} \]