

Number:

Textbook Section:

Title:

1. **a)** Write out the sum  $\sum_{i=3}^9 (i-1)^2$ .

**b)** Find the above sum.

2. **a)** Write out the sum  $\sum_{j=0}^4 \frac{2j-1}{3j+1}$ .

**b)** Find the above sum.

3. Write out the sum  $\sum_{k=1}^n (-1)^{k-1} \ln k$

4. Write out the sum  $\sum_{i=1}^{\infty} (2i-1)$

5. Write the series using sigma notation:  $1 - 2 + 3 - 4 + 5 - 6$

6. Write the series using summation notation:  $1 + 8 + 27 + \cdots + 8^3$

7. Write the series using sigma notation:  $\frac{1}{1 \cdot 2} + \frac{1}{2 \cdot 3} + \frac{1}{3 \cdot 4} + \cdots + \frac{1}{n(n+1)}$

8. Write the series using summation notation:  $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \cdots$

9. Rewrite the series using the new index as indicated.

$$\sum_{i=7}^{12} (3i - 4) = \sum_{j=1}$$