Example 1. Find the 4th partial sum in the series

$$\sum_{n=1}^{\infty} \frac{3}{2} n^2$$

Example 2. Write the series in sigma notation.

$$\frac{2}{3} + \frac{4}{6} + \frac{8}{18} + \frac{16}{72} + \frac{32}{360}$$

Example 3. Write the series using summation notation.

$$9 - \frac{18}{8} + \frac{27}{27} - \frac{36}{64} + \frac{45}{125}$$

Example 4. Write $0.\bar{9}$ as a series in sigma notation and compute the series.

Example 5. Compute

$$\sum_{n=1}^{\infty} \left(\frac{6}{14}\right)^n$$

Example 6. Compute

$$\sum_{n=1}^{\infty} \frac{3(-1)^n}{8^{2n}}$$