

Often it is helpful for us to find the **sum** of the first **n terms** of a **sequence**.

$$a_n = 2n + 1$$

Find the **sum** of the **first four terms**

$$a_1 + a_2 + a_3 + a_4$$

$$3 + 5 + 7 + 9 = 24$$

$$\sum_{k=1}^4 2k + 1$$

“the **summation** of $2k + 1$, from $k = 1$ to $k = 4$ ”

Find the following **summations**.

$$\sum_{k=1}^5 k + 3$$

“the **summation** of $k + 3$, from $k = 1$ to $k = 5$ ”

$$\sum_{k=1}^4 k! = 1!$$

“the **summation** of $k!$, from $k = 1$ to $k = 4$ ”

Find the following **summations**.

$$\sum_{k=1}^n 5k$$

“the **summation** of $5k$, from $k = 1$ to $k = n$ ”

$$\sum_{k=1}^n \frac{1}{k}$$

“the **summation** of $\frac{1}{k}$, from $k = 1$ to $k = n$ ”

Write the **sum** in **summation form**.

$$1 + 4 + 6 + \dots + 20$$

$$\Sigma$$

$$1 + 4 + 9 + \dots + 64$$

$$\Sigma$$

Write the **sum** in **summation form**.

$$\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \dots + \frac{1}{8}$$

$$\sum^7$$

$$\frac{2}{e} + \frac{3}{e^2} + \frac{4}{e^3} + \dots + \frac{n+1}{e^n}$$

$$\sum$$