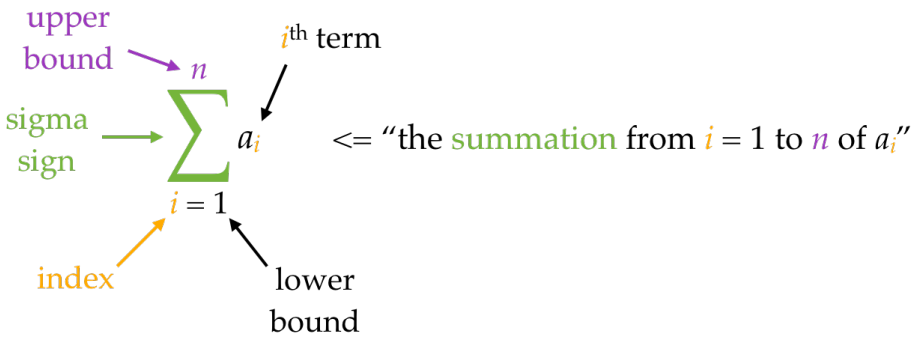
Summation Notation Review

Name _____

Date _____ Period _____

Summation Notation

The sum of n terms $a_1, a_2, a_3, \ldots, a_n$ is written in summation notation as…



Summation Notation

The sum of n terms $a_1, a_2, a_3, \ldots, a_n$ is written in summation notation as…

$$\sum_{i=1}^{n} a_i = a_1 + a_2 + a_3 + \ \ldots + a_n$$

Write out the following summations and solve.

$$\sum_{i=1}^{5} 2i$$

$$\sum_{i=4}^{7} 3i^2$$

Write out the following summations and solve.

$$\sum_{i=3}^{8} n \cdot i$$

$$\sum_{i=2}^{5} f(i)$$

$f(x) = 2x + 1$

Summation Properties

$$\sum_{i=1}^{n} k \cdot a_i = k \sum_{i=1}^{n} a_i$$

$$\sum_{i=3}^{8} n \cdot i$$

Summation Properties

$$\sum_{i=1}^{n} (a_i \pm b_i) = \sum_{i=1}^{n} a_i \pm \sum_{i=1}^{n} b_i$$

$$\sum_{i=2}^{4} i + i^2$$

Summation Formulas

(Lower Bound = 1)

$$\sum_{i=1}^{n} c = c \cdot n$$

$$\sum_{i=1}^{84} 5$$

Summation Formulas

(Lower Bound = 1)

$$\sum_{i=1}^{n} i = \frac{n(n+1)}{2}$$

$$\sum_{i=1}^{72} i$$

Summation Formulas

(Lower Bound = 1)

$$\sum_{i=1}^{n} i^2 = \frac{n(n+1)(2n+1)}{6}$$

$$\sum_{i=1}^{54} i^2$$

Summation Formulas

(Lower Bound = 1)

$$\sum_{i=1}^{n} i^3 = \frac{n^2(n+1)^2}{4}$$

$$\sum_{i=1}^{32} i^3$$

Evaluate the following for $n = 10$ and $n = 100$

$$\sum_{i=1}^{n} \frac{2i}{n^2}$$

Evaluate the following for $n = 10$ and $n = 100$

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