Sigma Notation



Preliminaries and Objectives

Preliminaries:

Sequences of numbers

Objectives:

• Find a sum written using Sigma Notation

$$\sum_{k=1}^{10} 2k$$

$$2+4+6+8+10+12+14+16+18+20=110\\$$

$$\sum_{k=0}^{9} 2(k+1)$$

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

$$1 + 4 + 9 + 16 + 25 = 55$$

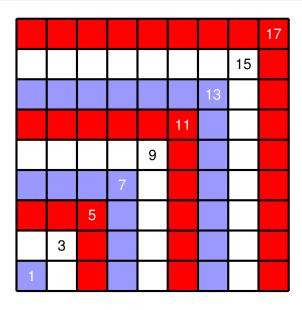
$$\sum_{k=0}^{3} k^3 - k^2$$

$$0 + 0 + 4 + 18 = 22$$

$$\sum_{k=1}^{n}2k-1=n^2$$

$$1+3+5+7+\ldots+(2n-1)$$

Sum of the first n odd integers



Recap

$$\sum_{k=lower}^{upper} formula$$

- Σ means find the sum
- k is a variable that gets plugged into the formula
- k is an integer that starts at the 'lower' summand and goes up one at a time until reaching the 'upper' summand