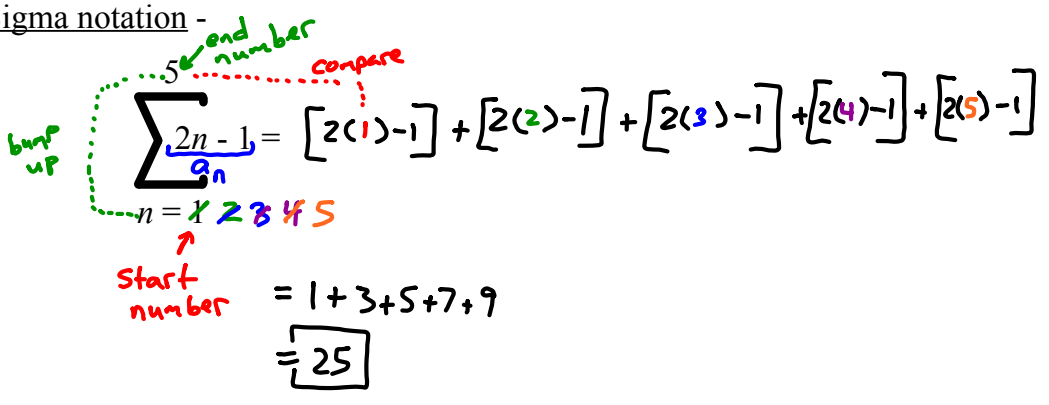
Algebra II

11-4

Series and Sigma Notation

Series - Sum of a sequence.

Sigma notation -



Write each series in expanded form (and evaluate).

1) $\sum_{n=1}^{6} n + 10 = [1+10] + [2+10] + [3+10] + [4+10] + [5+10] + [6+10]$

$= 11 + 12 + 13 + 14 + 15 + 16$

$= 81$

Write each series using sigma notation.

11) $1^3 + 2^3 + 3^3 + \ldots + 20^3 \rightarrow a_n = n^3$

start number

end number

$\sum_{n=1}^{20} n^3$

Write each series using sigma notation.

21) $-9 + 3 - 1 + \frac{1}{3} + \ldots$

geometric

$r = -\frac{1}{3}$

$n = 1 \quad 2 \quad 3 \quad 4$

$a_n = a_1 r^{n-1}$

$= -9\left(-\frac{1}{3}\right)^{n-1}$

$$\sum_{n=1}^{\infty} -9\left(-\frac{1}{3}\right)^{n-1}$$

Assignment:

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2-30 even