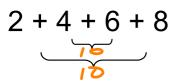
Arithmetic Series



Let's figure out the formula to find the sum of a finite series.





$$2 + 4 + 6 + 8 + 10 + 12 = \frac{1}{2}(\alpha_1 + \alpha_2)$$

Sum of Arithmetic Sequence



$$S_n = \frac{n}{2} \left(a_1 + a_n \right)$$

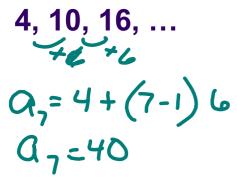
Find the sum of the sequence 5, 8, 11, 14, 17, 20.



$$S_{6} = \frac{6}{3}(5+20)$$

 $S_{6} = 75$

Find the sum of the first seven terms of



$$S_{n} = \frac{\Omega}{2}(a_{1} + a_{n})$$

$$S_{n} = \frac{2}{3}(4 + 40)$$

$$S_{n} = \frac{2}{3}(4 + 40)$$

$$S_{n} = 154$$

Find the sum of the first 30 multiples of 3.

$$a_n = a_1 + (n-1)d$$
 $a_{30} = 3 + (30-1)3$
 $a_{30} = 90$

Find the sum of the multiples of 6 from 24 to 120 inclusive.



$$S_{17} = \frac{17}{3} (24 + 120)$$

 $S_{17} = 1,224$

Evaluate:
$$\sum_{inder} 2n$$
 explicit eg. for alithmetic alithmetic
$$S_{io} = \frac{n}{2}(a_{i}+a_{n})$$

$$Q_{io} = \frac{n}{2}(1) = 2$$

$$Q_{io} = \frac{n}{2}(10) = \frac{n}{2}$$

Evaluate:
$$\sum_{n=1}^{15} 3n - 1$$

$$S_{15} = \frac{15}{5} (2 + 44)$$

$$S_{15} = 345$$

$$C_{15} = 345$$