Arithmetic Series

5, 7, 9, 11, 13,.....   97, 92, 87, 82, 77,.....

Find the nth term: $a_n = a_1 + d(n-1)$

Sum of n terms: $S_n = \dfrac{n}{2}(a_1 + a_n)$

a_1 : 1st term

d : common difference

n : term

1. Write the first 5 terms of each arithmetic sequence.

a) $a_n = 3 + 4(n-2)$

b)
$$a_1 = 22$$
$$a_{k+1} = a_k - 5$$

2. Find the 25th term of each arithmetic sequence.

   a) 4, 7, 10, 13, 16,.....

b) $3, \dfrac{5}{2}, 2, \dfrac{3}{2}, 1,.....$

3. Find a formula for a_n for the arithmetic sequence.

a) $\quad a_1 = 10$
$\quad\quad d = -3$

b) $\quad a_3 = 1$
$\quad\quad a_{10} = \dfrac{10}{3}$

4. Find the nth partial sum of the arithmetic sequence.

   a) 2, 10, 18, 26, 34,.....

   $n = 20$

   b) $\displaystyle\sum_{n=1}^{20}(2n+1)$

   c) $\displaystyle\sum_{n=10}^{100}4n$