

Fibonacci series

$$F_n = F_{n-1} + F_{n-2} \quad (1)$$

where $n > 1$

Fibonacci series is computed by the addition of two previous numbers from the current number;
from the equation —(1)

we can write the intervals for n ;

$$0 \leq n \leq 1$$

$$F_0 = 0$$

$$F_1 = 1$$

from the eqn —(1) we say that the starting term in the series is F_0

$$F_{n+1} = F_n + F_{n-1} \quad (2)$$

from the equation(2) it is known that the starting term in the Fibonacci series is F_1 from the eqn (2) in the LHS F_{n+1} ; n is added with some constant c ; where $c=1$; so the starting sequence is F_1

gate question solution

$$F_{n+1} = F_n + F_{n-1}$$

$$F_6 = 37$$

$$F_7 = 60$$

$$F_1 = ?$$

solution: the terms in the Fibonacci series are:

$$F_1, F_2, F_3, F_4, F_5, F_6, F_7$$

the terms in the Fibonacci series are plotted only on the +ve x-axis scale; from [0 to n] as n increases the point from the origin of the x-axis also increases; e.g: for $n+1$ the terms will be in range [1 to $n+1$] similarly for $n+2$; the value will be incremented to 2 from origin i.e 0; so the range of terms will be [2 to $n+2$]

$F_1 = 4, F_2 = 5$; initialization of the first two terms;

$$F_{n+1} = F_n + F_{n-1}$$

$$F_{2+1} = F_2 + F_{2-1}$$

$$F_3 = 4 + 5 = 9$$

$$F_4 = 14$$

$$F_5 = 23$$

$$F_6 = 37$$

$$F_7 = 60$$