Answer on Question #80447 – Math – Calculus

Question

Consider the sequence 1, 6, 11, 16, 21, 26

A) Find the next term

B) Find the 50^{th} term

C) Find the formula for general or nth term

Solution

A) Each term is obtained by adding 5 to its predecessor. Then this sequence is linear. The next term is 26+5=31.

C) Notice that $a_1 = 1, a_2 = 1 + 1 \cdot 5, a_3 = 1 + 2 \cdot 5$,...

so the formula for the general term or nth term is

$$a_n = 5(n-1) + 1 = 5n - 4 \text{ for } n = 1, 2, 3 \ldots$$

B) Using the formula $a_n = 5n - 4$ find $a_{50} = 5 \cdot 50 - 4 = 246$

Answer: A) 31; **B)** 246; **C)** $a_n = 5n - 4$.

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