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I. Find the recurrence relation and initial conditions for the sequence/s:

1. S: 5, 8, 11, 14, 17, …
   Recurrence Relation: $a_n = a_{n-1} + 3$
   Initial Condition: $a_0 = 5$ or $a_1 = 8$
2. S: 3, 10, 31, 94, 283, …
   Recurrence Relation: $a_n = 3a_{n-1} + 1$
   Initial Condition: $a_0 = 3$
3. S: 0, 2, 6, 12, 20, 30, 42, …
   Recurrence Relation: $a_n = a_{n-1} + 2n$
   Initial Condition: $a_0 = 0$

II. Find the first five terms of a sequence satisfying the given recurrence relation and initial conditions

1. $\boldsymbol{a_n = 7a_{n-1} + 3a_{n-2} + 5, n \geq 2}$

Given: $a_0 = 5,\ a_1 = 2$

Compute:

$a_2 = 7(2) + 3(5) + 5 = 14 + 15 + 5 = 34$

$a_3 = 7(34) + 3(2) + 5 = 238 + 6 + 5 = 249$

$a_4 = 7(249) + 3(34) + 5 = 1743 + 102 + 5 = 1850$

First five terms: $5,\ 2,\ 34,\ 249,\ 1850$

2. $\boldsymbol{a_n = a_{n-1} + a_{n-2} + n, n \geq 2}$

Given: $a_0 = -1,\ a_1 = 1$

$a_2 = 1 + (-1) + 2 = 2$

$a_3 = 2 + 1 + 3 = 6$

$a_4 = 6 + 2 + 4 = 12$

First five terms: $-1,\ 1,\ 2,\ 6,\ 12$

3. $\boldsymbol{a_n = a_{n-1} + 7, n \geq 1}$

Given: $a_0 = 7$

$a_1 = 7 + 7 = 14$

$a_2 = 14 + 7 = 21$

$a_3 = 21 + 7 = 28$

$a_4 = 28 + 7 = 35$

First five terms: $7,\ 14,\ 21,\ 28,\ 35$