Test 13: Name Theepakorn Phayonrat ID 67011352

Find the solution of the linear nonhomogeneous recurrence relation $a_n = a_{n-1} + n$ with $a_1 = 1$.

$a_n - a_{n-1} = 0$
$r - 1 = 0$
$r = 1$

$\frac{n(n+1)}{2}$

$a_n^h = C 1^n$

$a_n = a_{n-1} + n$

$(b_1 n + b_0) n = (b_1(n-1) + b_0)(n-1) + n$

$b_1 = b_1$

$b_0 = -2b_1 + b_0$

$0 = b_1 - b_0 \Rightarrow b_0 = b_1 = \frac{1}{2}$

$\therefore a_n^p = \frac{1}{2} n^2 + \frac{1}{2} n = \frac{n(n+1)}{2}$

$\therefore a_n = C 1^n + \frac{n(n+1)}{2}$

$a_n = C + \frac{n(n+1)}{2}$

$a_1 = 1 = C + 1$

$C = 0$

$a_n = \frac{n(n+1)}{2}$ //