計算 2： $a_1 = 1$， $a_{n+1} = 2a_n + n^2$

令 $[a_{n+1} + H(n+1)] = 2[a_n + H(n)] \implies a_{n+1} = 2a_n + 2H(n) - H(n+1)$

令 $H(n) = an^2 + bn + c \implies 2H(n) - H(n+1) = n^2 \implies H(n) = n^2 + 2n + 3$

$[a_n + H(n)] = 2[a_{n-1} + H(n-1)]$
$[a_{n-1} + H(n-1)] = 2[a_{n-2} + H(n-2)]$
$[a_{n-2} + H(n-2)] = 2[a_{n-3} + H(n-3)]$
$\qquad \cdots$
$[a_2 + H(2)] = 2[a_1 + H(1)]$
　　相乘

$\implies [a_n + H(n)] = 2^{n-1}[a_1 + H(1)] = 2^{n-1} \cdot 7$

$\implies a_n = 2^{n-1} \cdot 7 - (n^2 + 2n + 3)$