1. If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23.

   Find the sum of all the multiples of 3 or 5 below 1000.

2. The number 512 is interesting because it is equal to the sum of its digits raised to some power: 5 + 1 + 2 = 8, and $8^3$ = 512. Another example of a number with this property is 614656 = $28^4$.

   We shall define $a_n$ to be the nth term of this sequence and insist that a number must contain at least two digits to have a sum.

   You are given that $a_2$ = 512 and $a_{10}$ = 614656.

   Find $a_{30}$