$a_n = (((\max(((n-a_{n-2}) + \text{num\_digits}(n)), \text{reverse}(a_{n-3}), a_{n-3}) + \max(\text{num\_digits}(a_{n-1}), a_{n-1}, a_{n-3})) + 1) + (\text{reverse}(a_{n-3}), a_{n-3}) + (\text{num\_digits}(a_{n-1}), a_{n-1}, a_{n-3})) + 1) + (\text{reverse}(a_{n-3}), a_{n-3}) + (\text{num\_digits}(a_{n-1}), a_{n-1}, a_{n-3})) + 1) + (\text{reverse}(a_{n-3}), a_{n-3}) + (\text{num\_digits}(a_{n-1}), a_{n-1}, a_{n-3})) + 1) + (\text{reverse}(a_{n-3}), a_{n-3}) + (\text{num\_digits}(a_{n-1}), a_{n-1}, a_{n-3})) + 1) + (\text{num\_digits}(a_{n-1}), a_{n-1}, a_{n-2})) + 1) + (\text{num\_digits}(a_{n-1}), a_{n-1}, a_{n-2})) + (\text{num\_digits}(a_{n-1}), a_{n-1}, a_{n-2})) + 1) + (\text{num\_digits}(a_{n-1}), a_{n-1}, a_{n-2})) + 1) + (\text{num\_digits}(a_{n-1}), a_{n-2})) + (\text{num\_d$