

The Last Number

Write the numbers

$$1, 2, 3, \dots, 2026$$

on a board. At each step, choose any two numbers a and b , erase them, and replace them with

$$a + b + ab.$$

Continue this process until only one number remains on the board.

Question. Does the final number depend on the choices made along the way? If not, determine the final number in a compact form and prove your answer.