

Problem 7 (due Monday, December 4)

Find the smallest positive integer which cannot be expressed as a sum of 2023 or fewer Fibonacci numbers (not necessarily distinct). Recall that the Fibonacci numbers  $f_n$  are defined recursively as follows:  $f_1=f_2=1$ ,  $f_n=f_{n-1}+f_{n-2}$  for all  $n>2$ .

Only one solution was submitted, by Sasha Aksenchuk. The answer to the problem is that  $f_{4049}-1$  is the smallest positive integer which is not a sum of fewer than 2024 Fibonacci numbers. For a detailed solution see the following link [Solution](#).

From:

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Last update: **2023/12/11 07:10**

