Problem 12. A partition of 2010 is a representation of 2010 as a sum of positive integers. Two examples are

\[ p_1 : 10 + 50 + 50 + 1000 + 1000 \quad \text{and} \quad p_2 : 1 + 1 + 1 + 2007. \]

Let \( S \) be the set of all partitions of 2010. For a partition \( p \in S \), define \( f(p) \) as the sum of the number of summands in \( p \) plus the maximum summand in \( p \). For example,

\[ f(p_1) = 5 + 1000 = 1005 \quad \text{and} \quad f(p_2) = 4 + 2007 = 2011. \]

Find the minimum value of \( f(p) \) for \( p \in S \).