B)

$1, \ldots, 100$, $1, 2, 4, \ldots 2^k$

$B_1 \ldots B_{100}$

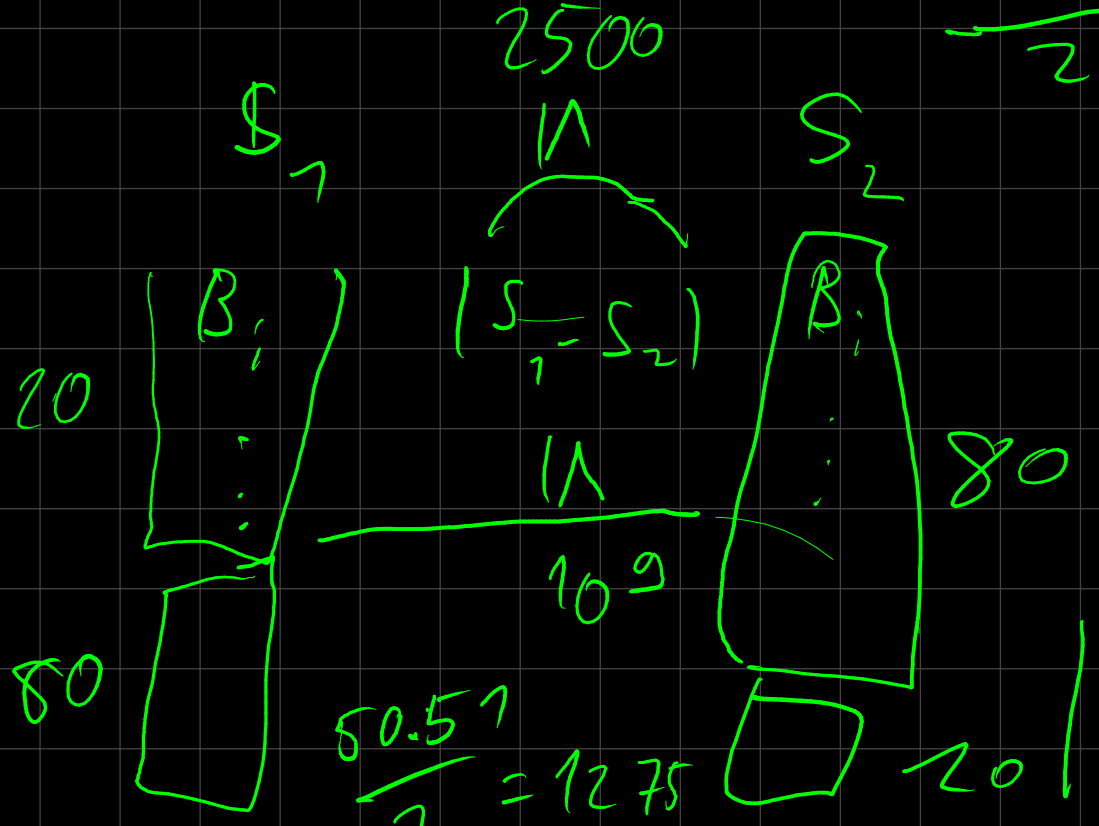
$2^k + 1$, $2^k - 1$

$2^{30} > 10^9$

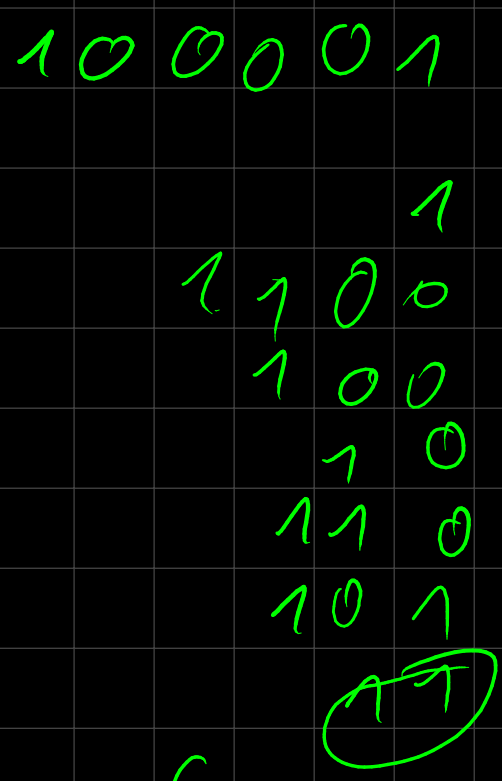
$S = \underbrace{\sum A_i}_{10k} + \underbrace{\sum B_i}_{< 10^{11}}$

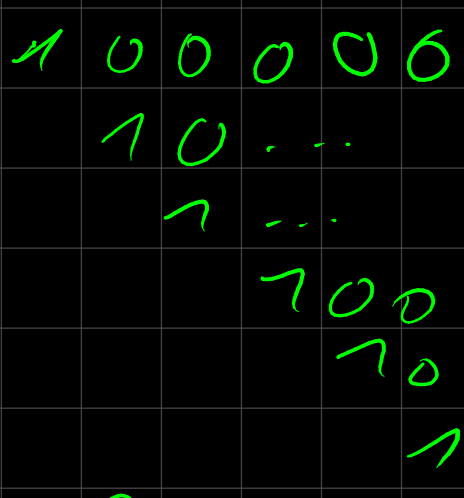
$\frac{100 \cdot 10^{11}}{2} < Ans$

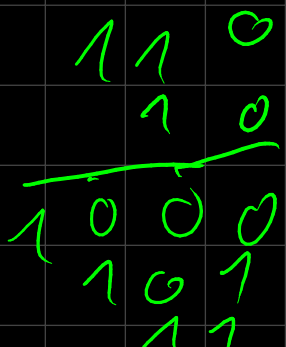
$= 3775$

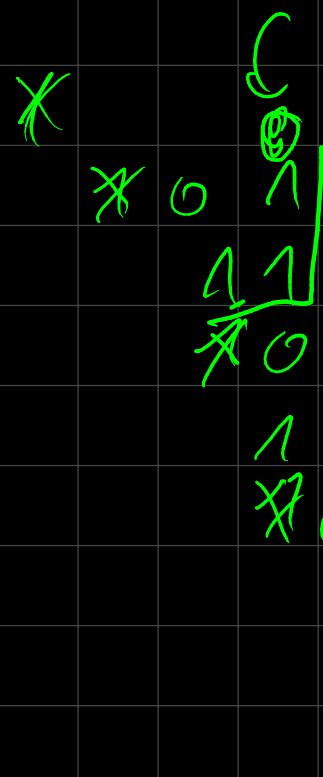


$50 \cdot 10^9 \simeq \underline{\underline{36}}$ bits









1, 2, 3, 5, 8, 13

21, 34, 55

$54 = 34 + 13 + 5 + 2$

$L = R + \Delta$

$R + a_i$

$\frac{3}{2}\Delta > a_i > \frac{\Delta}{2}$

$\Rightarrow (L - R) < \frac{\Delta}{2}$

$\Delta < a_k$

$1000 = 8$

$a_{k+1} = \frac{a_k}{2} + 1$