Problem 14.

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Suppose you have a strip of toilet paper with n pieces, and you fold the paper evenly into d parts (divide by d) or fold the last k pieces in (subtract by k), until the length of the strip is less than k pieces.

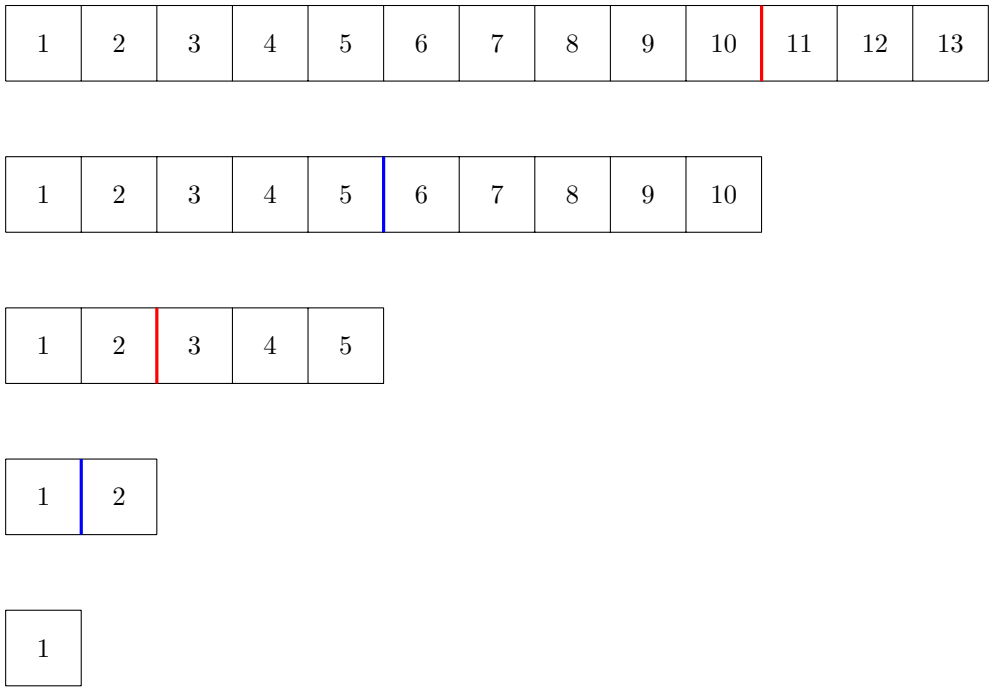

Figure 1: A folding of paper where $n = 13$, $d = 2$, and $k = 3$, showing that $a_{2,3}(13) \leq 4$. Where the red marks a subtraction by k and the blue marks a division by d.

Question. Is there an efficient way to compute $a_{d,k}(n)$?

Related.

1. What if you must keep folding until you cannot fold any longer?
2. What is the minimum number of terminal pieces? What is the minimum number of steps to this number?