Problem. What can you say about the Kolmogorov complexity of the string 100100... in which the sequence 100 is repeated 2023 times?

Solution. Kolmogorov complexity of a string $x$ is the length of the shortest program that computes this string. The given string $x$ can be generated by the following program:

```java
for(i = 1; i <= 2023; i++)
    System.out.print("100");
```

that has length 49. Thus, the Kolmogorov complexity — i.e., the length of the shortest program for computing this string — must be smaller than or equal to 49: $K(x) \leq 49$. 
