1) Let \( \{a_n\}_{n=0}^{\infty} \) be the sequence defined by \( a_n = 2n + 1 \). Define a new sequence \( \{b_k\}_{k=0}^{\infty} \) by taking every other term in the first sequence. That is, the new sequence is given by:

\[
a_0, a_2, a_4, a_6, \ldots
\]

Find an explicit formula for \( b_k \).

2) Concatenate the string “abcd” with the string “gogg”.

3) Does your answer to #2 include the string “dog” as a substring?