The algorithm for LZW decompression works as follows:

- **Initialize dictionary with all roots**
- **Read C (current)**
- **Output pattern for C**

Let \( P \) (previous) = C

Read C (current)

**C in dictionary?**

- YES
  - Output pattern for C
  - Let \( X = \) pattern for P
  - Let \( Y = \) 1st char of pattern for C
  - Add \( X+Y \) to dictionary

- NO
  - Let \( X = \) pattern for P
  - Let \( Z = \) 1st char of pattern for P
  - Output \( X+Z \)
  - Add \( X+Z \) to dictionary

**more data?**

- YES
  - DONE

- NO

**Given an alphabet of ABC, and an input string (to the decoder) of 221334, what is the output (decompressed) string?**