The Cantor set is the set of all real numbers $x$ such that $0 \leq x \leq 1$, and $x$ has a ternary (i.e., base-3) representation that contains no 1s, except for possibly the last non-zero digit. You are to write a program that reads the digits of a ternary representation of a positive number less than 1, and reports whether it is in the Cantor set. Each input will be a sequence of exactly six digits, each of which is either 0, 1, or 2. These digits will be the digits following the decimal point in the ternary representation. These digits must be provided together — they may not be placed on separate lines, in separate text fields, or separated by any other characters or white space.

Example 1:

Enter ternary digits: 200220
Member

Example 2:

Enter ternary digits: 002212
Non-member

Example 3:

Enter ternary digits: 201000
Member