A **valid number** can be split up into these components (in order):

1. A **decimal number** or an **integer**.
2. (Optional) An 'e' or 'E', followed by an **integer**.

A **decimal number** can be split up into these components (in order):

1. (Optional) A sign character (either '+' or '-').
2. One of the following formats:
   1. One or more digits, followed by a dot '.'.
   2. One or more digits, followed by a dot '.', followed by one or more digits.
   3. A dot '.', followed by one or more digits.

An **integer** can be split up into these components (in order):

1. (Optional) A sign character (either '+' or '-').
2. One or more digits.

For example, all the following are valid numbers: ["2", "0089", "-0.1", "+3.14", "4.", "-.9", "2e10", "-90E3", "3e+7", "+6e-1", "53.5e93", "-123.456e789"], while the following are not valid numbers: ["abc", "1a", "1e", "e3", "99e2.5", "--6", "-+3", "95a54e53"].

Given a string s, return true *if* s *is a* ***valid number***.

**Example 1:**

Input: s = "0"  
Output: true

**Example 2:**

Input: s = "e"  
Output: false

**Example 3:**

Input: s = "."  
Output: false

**Constraints:**

* 1 <= s.length <= 20
* s consists of only English letters (both uppercase and lowercase), digits (0-9), plus '+', minus '-', or dot '.'.