

## 65. Valid Number

Given a string *s*, return whether *s* is a **valid number**.

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".

Formally, a **valid number** is defined using one of the following definitions:

1. An **integer number** followed by an **optional exponent**.
2. A **decimal number** followed by an **optional exponent**.

An **integer number** is defined with an **optional sign** '-' or '+' followed by **digits**.

A **decimal number** is defined with an **optional sign** '-' or '+' followed by one of the following definitions:

1. **Digits** followed by a **dot** '.'.
2. **Digits** followed by a **dot** '.' followed by **digits**.
3. A **dot** '.' followed by **digits**.

An **exponent** is defined with an **exponent notation** 'e' or 'E' followed by an **integer number**.

The **digits** are defined as one or more digits.

**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 '.'.