

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

A decimal number or an integer.

(Optional) An 'e' or 'E', is followed by an integer.

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

(Optional) A sign character (either '+' or '-').

One of the following formats:

One or more digits, followed by a dot '.'.

One or more digits, followed by a dot '.', followed by one or more digits.

A dot '.', followed by one or more digits.

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

(Optional) A sign character (either '+' or '-').

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.