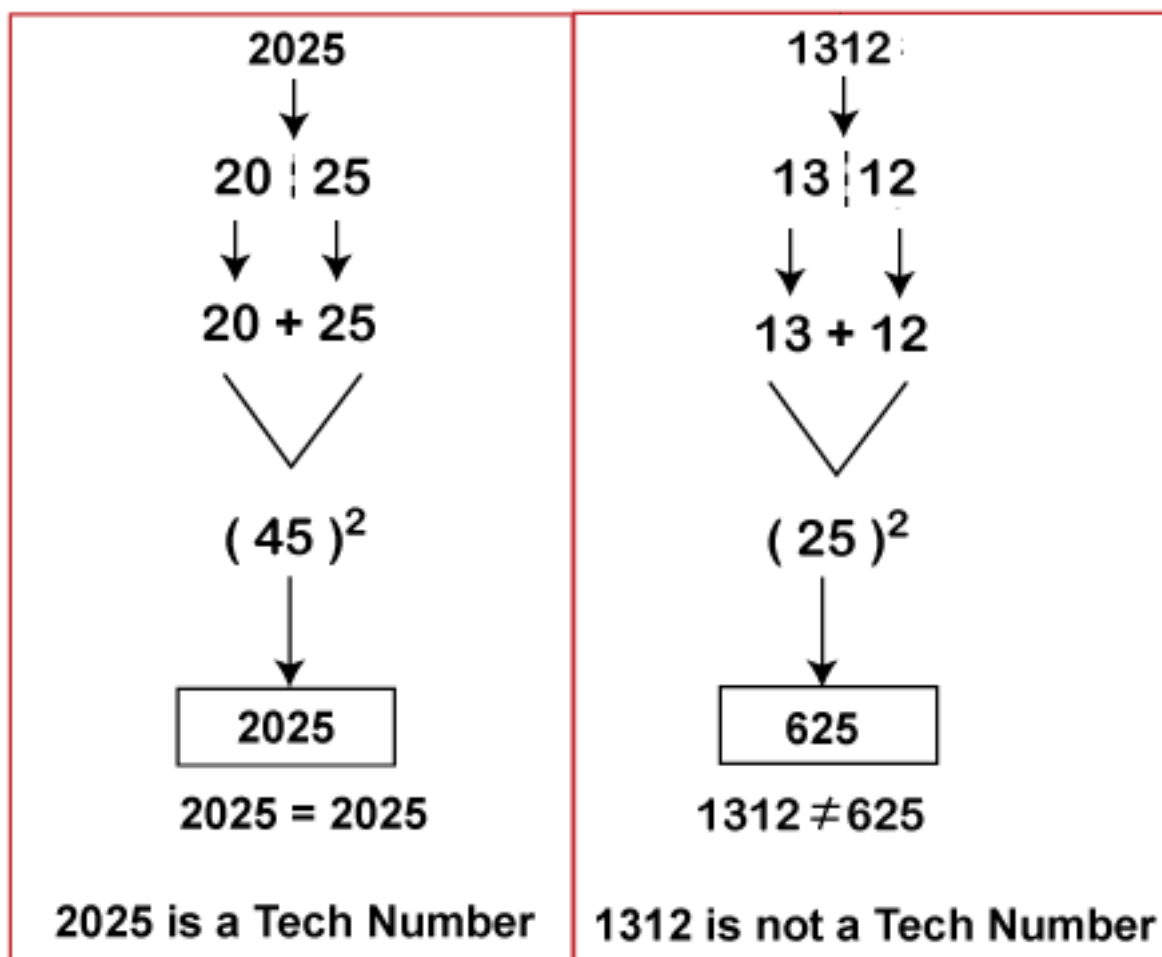


Tech Number

A number is called a **tech number** if the given number has an even number of digits and the number can be divided exactly into two parts from the middle. After equally dividing the number, sum up the numbers and find the square of the sum. If we get the number itself as square, the given number is a tech number, else, not a tech number. For example, 3025 is a tech number.

Tech Number Example

Let's take an example and check 2025 and 1312 are tech numbers or not.



1. Peterson Number

A number is said to be **Peterson** if the sum of factorials of each digit is equal to the sum of the number itself.

Example of Peterson Number

Suppose, we have to check the number (n) 145 is Peterson or not.

Number = 145

$$145 = !1 + !4 + !5$$

$$= 1 + 4 \times 3 \times 2 \times 1 + 5 \times 4 \times 3 \times 2 \times 1$$

$$= 1 + 24 + 120$$

$$145 = 145$$

We observe that the number and the sum of factorials of digits are equal to the number itself. Hence, **145** is a Peterson number.

2. Sunny Number

A number is called a **sunny number** if the number next to the given number is a perfect square. In other words, a number **N** will be a sunny number if **N+1** is a perfect square.

Given, $N=80$ then $N+1$ will be $80+1=81$, which is a perfect square of the number 9. Hence **80** is a sunny number.

Let's take another number 10.

Given, $N=10$ then $N+1$ will be $10+1=11$, which is not a perfect square. Hence **10** is not a sunny number.

Spy Number

A positive integer is called a spy number if the **sum** and **product** of its digits are equal. In other words, a number whose sum and product of all digits are equal is called a **spy number**.

Example of Spy Number

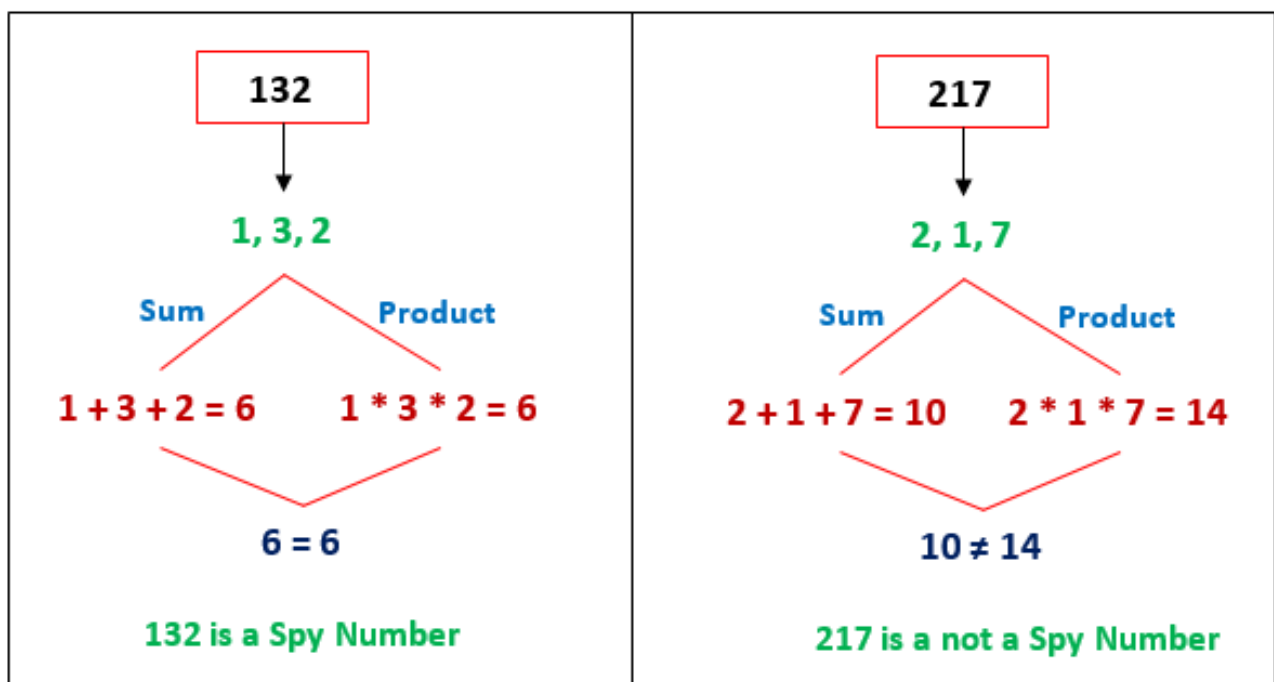
Let's take the number 1124 and check whether the number is a spy or not. First, we will split it into digits (1, 1, 2, 4). After that find the sum and product of all the digits.

$$\text{Sum} = 1 + 1 + 2 + 4 = 8$$

$$\text{Product} = 1 * 1 * 2 * 4 = 8$$

We observe that the sum and product of the digits both are equal. Hence, **1124** is a spy number.

Similarly, we can check other numbers also. Some other spy numbers are 22, 123, 132, etc.

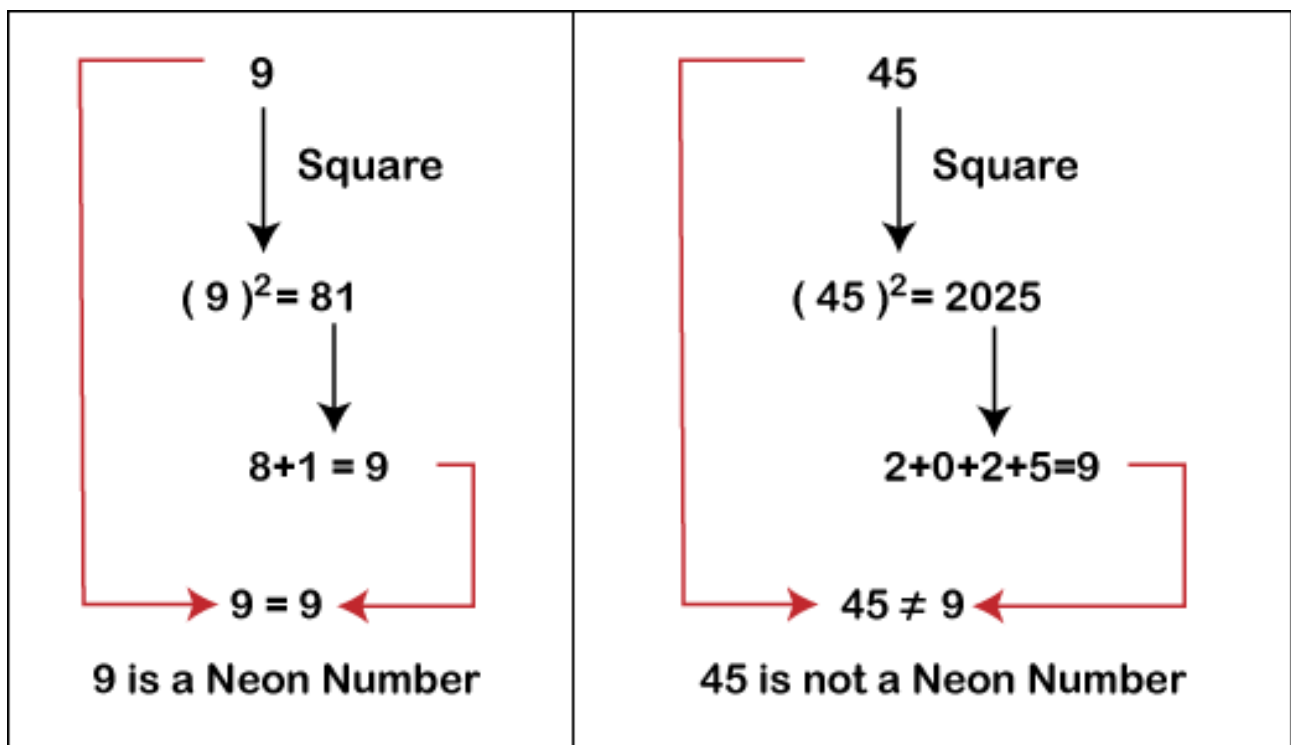


Neon Number

A positive integer whose sum of digits of its square is equal to the number itself is called a **neon number**.

Example of Neon Number

Let's take an example and check 9 and 45 are neon numbers or not.



Keith Number

A positive n digit number X is called a **Keith number** (or repfigit number) if it is arranged in a special number sequence generated using its digits. The special sequence has first n terms as digits of x and other terms are recursively evaluated as the sum of previous n terms. For example, **197**, **19**, **742**, **1537**, etc.

Keith Number Example

Let's check the number **742** is a Keith number or not.

First, we will separate each digit, as **7, 4, 2**

To find the next term of the above-created series, we add these digits (i.e. **7+4+2**), and the resultant (**13**) that we get becomes the next term of the series.

Now, the series becomes, **7, 4, 2, 13**

To find the next term of the above series, we add the last three terms (i.e. **13+2+4**), and the resultant (**19**) that we get becomes the next term of the series.

Now, the series becomes, **7, 4, 2, 13, 19**

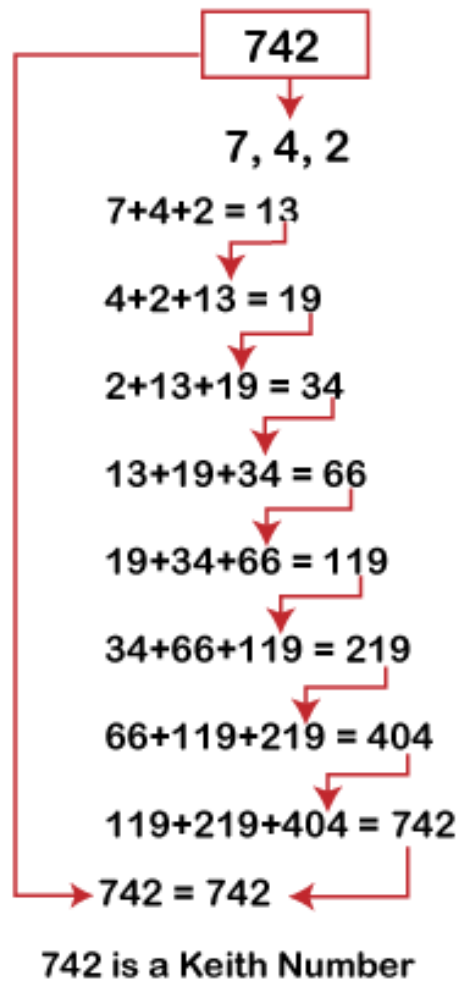
To find the next term of the above series, we add the last three terms (i.e. **19+13+2**), and the resultant (**34**) that we get becomes the next term of the series.

Now, the series becomes, **7, 4, 2, 13, 19, 34**

To find the next term of the above series, we add the last three terms (i.e. **34+19+13**), and the resultant (**66**) that we get becomes the next term of the series.

Now, the series becomes, **7, 4, 2, 13, 19, 34, 66**

Keith Number in Java



Emirp Number

A number is called an **emirp number** if we get another prime number on reversing the number itself. In other words, an emirp number is a number that is prime forwards or backward. It is also known as **twisted prime** numbers.

Note: Palindrome primes are excluded.

Emirp Number Example

Suppose, we want to check the number **79** is emirp or not.

We know that 79 is a prime number means that divisible by 1 and self only. On reversing the number, we get 97 which is another prime number. Therefore, 79 and 97 both are prime numbers. Hence, **79** is a prime number. Similarly, we can check other numbers also.

Some other emirp numbers are **13, 199, 107, 113, 1399, 1583, 1201, 3049**, etc.

Buzz Number Java

Buzz number is another special number in Java that ends with digit 7 or divisible by 7. Unlike Prime and Armstrong numbers, the Buzz number is not so popular and asked by the interviewers.

In simple words, a number is said to be Buzz if it ends with 7 or is divisible by 7.

Let's take some examples of **Buzz numbers**.

1. 42 is a Buzz number because it is divisible by 7.
2. 107 is a Buzz number because it ends with 7.
3. 147 is a Buzz number because it ends with 7 and also divisible by 7.
4. 134 is not a Buzz number because it is neither end with 7 nor divisible by 7.

Duck Number Java

Duck number is another special positive non-zero number that contains zero in it. The digit zero should not be presented at the starting of the number. Zero can be present at any of the positions except the beginning of the number.

Let's understand some examples of Duck numbers.

1. 3210 is a Duck number because it contains zero at the end of the number but not present at the beginning of it.
2. 08237 is not a Duck number because it contains zero at the beginning of it.
3. 7033 is a Duck number because it contains zero at the second position, not at the beginning.
4. 030405 is not a Duck number because it also contains zero in starting of the number.
5. 00153 is also not a Duck number because it contains leading zeros.