

## Article:-

### Interesting 91

→ Indranil Majumder

In this article, we will get introduced to some interesting properties of 91. This odd number shows some typical properties in the case of division. Also, the number acts as a constant. These properties are written based on observations and calculations by the author.

#### **Division properties**

Suppose, a number is of the form  $x0x0x0$  (where  $x$  is any number between 1 to 9). If this number is divided by 91, then, we always get the result as  $xxx0$ .

For example,  $606060 \div 91 = 6660$

$$303030 \div 91 = 3330$$

$$101010 \div 91 = 1110.$$

Similar types of results can be found in the case of 202020, 404040, 505050, 707070 and 909090. That is if this number is divided by 91 we get 2220, 4440, 5550, 7770, 9990 respectively.

Again, if any number of form  $x0x0x$  (where  $x$  is any number between 1 to 9) is divided by 91, we always get the result as  $xxx$ .

For example,  $30303 \div 91 = 333$

$$40404 \div 91 = 444$$

$$50505 \div 91 = 555.$$

In this way, we obtain 111, 222, 666, 777, 888 and 999 by dividing 91 by 10101, 20202, 60606, 70707, 80808 and 90909 respectively.

## Constant Properties

It can be shown from the division properties that 91 can act as a constant. From the first case of division, it can be derived that if any number of the form  $x0x0x0$  is divided by  $xxx0$  (where  $x$  is any number from 1 to 9), then we always get the result as 91.

For example,  $606060 \div 6660 = 91$

$$202020 \div 2220 = 91$$

$$505050 \div 5550 = 91.$$

In this way, we always get 91 by dividing 101010, 303030, 404040, 707070, 808080 and 909090 by 1110, 3330, 4440, 7770, 8880 and 9990 respectively.

Again, from the second case of division, if we divide the number of the form  $x0x0x$  by  $xxx$  (where  $x$  is any number from 1 to 9), then we always obtain 91.

For example,  $80808 \div 888 = 91$

$$10101 \div 111 = 91$$

$$90909 \div 999 = 91.$$

Similarly, 91 can be obtained by dividing 20202, 30303, 40404, 50505, 60606 and 70707 by 222, 333, 444, 555, 666 and 777 respectively.

Thus, by studying the two cases, it can be easily found that 91 can act as a constant. The unique and unknown division and constant properties of 91 make this an interesting number among the other numbers in the number line.

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**Author's photo:**



**Profession:** Postgraduate in Applied Mathematics (From NSHM College of Management & Technology under Maulana Abdul Kalam Azad University of Technology). Science Writer and Teacher. Also, write other types of articles, stories and others that are published in India and abroad. The number of published articles exceeds 50.

**Address:** 87/189, Raja S.C. Mullick Road, Gangulybagan, Kolkata-700047, West Bengal, India.

**Contact no. :** +91 9830051040

**E-mail:** iti\_4ever@yahoo.co.in