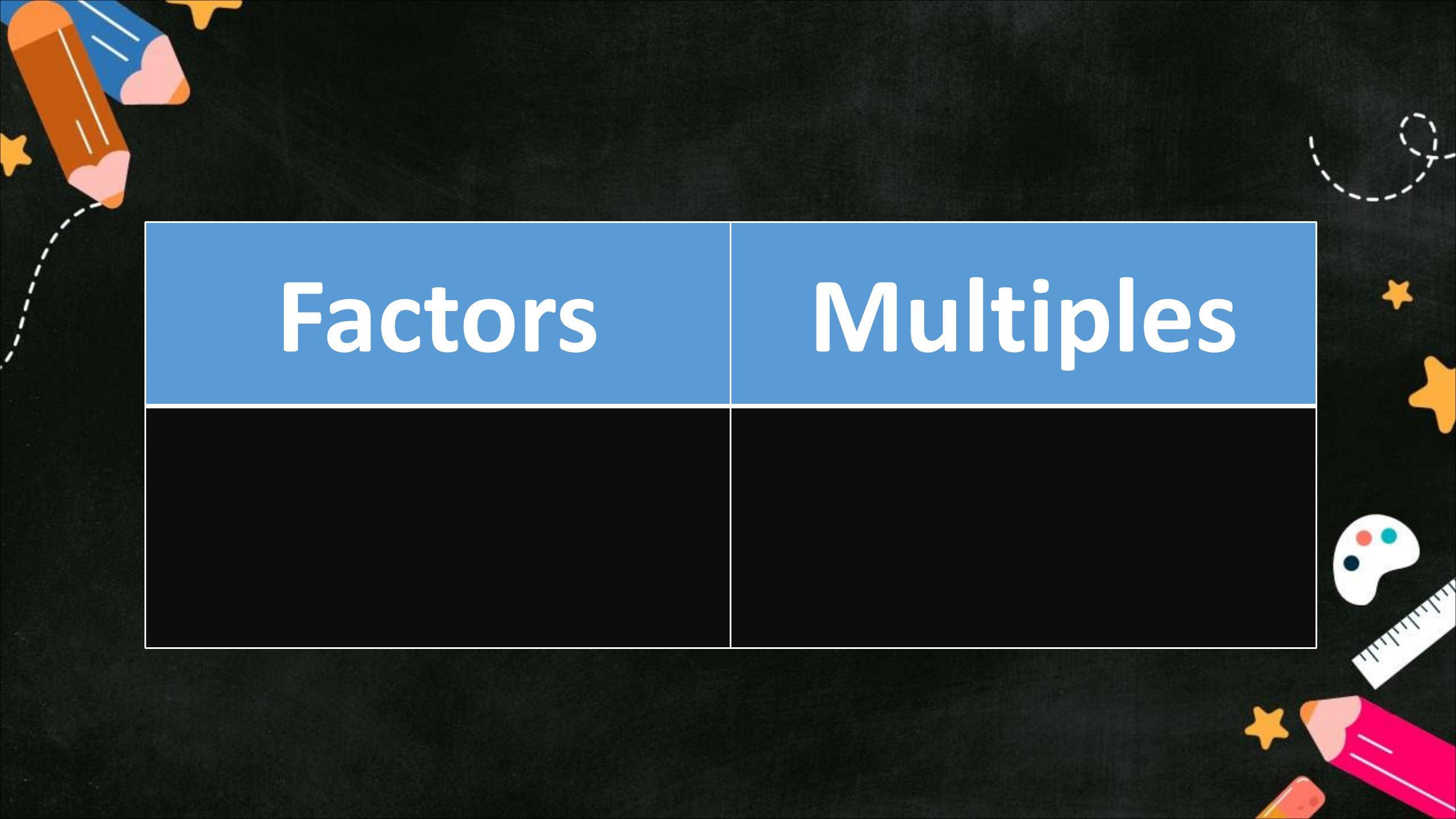


# Real numbers

**ONE SHOT**

# Topics to be covered

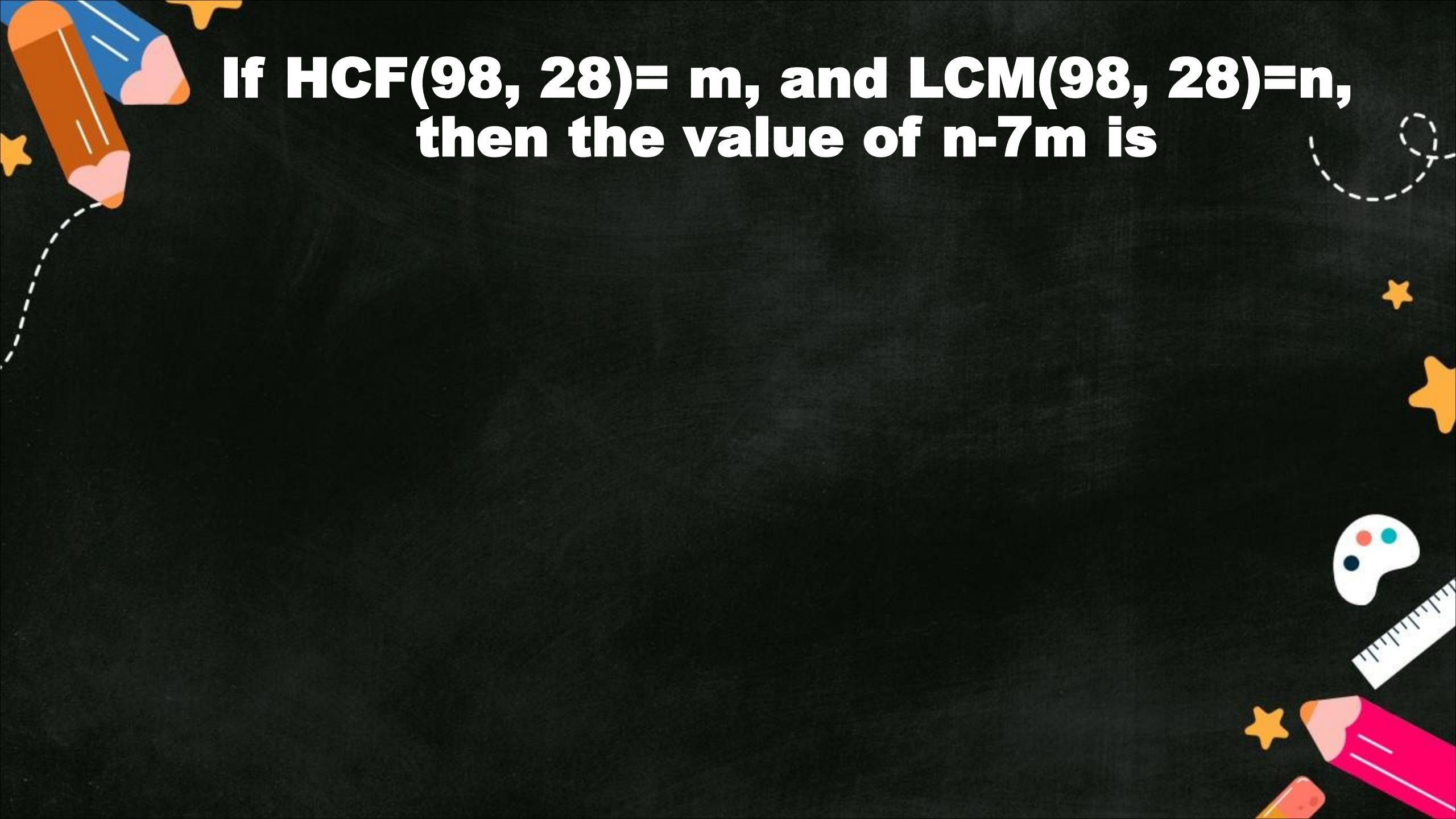
1. HCF nad LCM
2. Prime, composite numbers
3. Relation between HCF and LCM for two positive integers
4. Co-prime number
5. word problem on HCF and LCM
6. Proving irrationality
7. Fundamental theorem of Arithmetics



A decorative border surrounds the central content area. It features a yellow pencil at the top left, a blue pencil at the top right, and a pink pencil at the bottom right. There are also yellow stars of various sizes scattered across the border. The background is a dark grey or black color.

# Factors

# Multiples

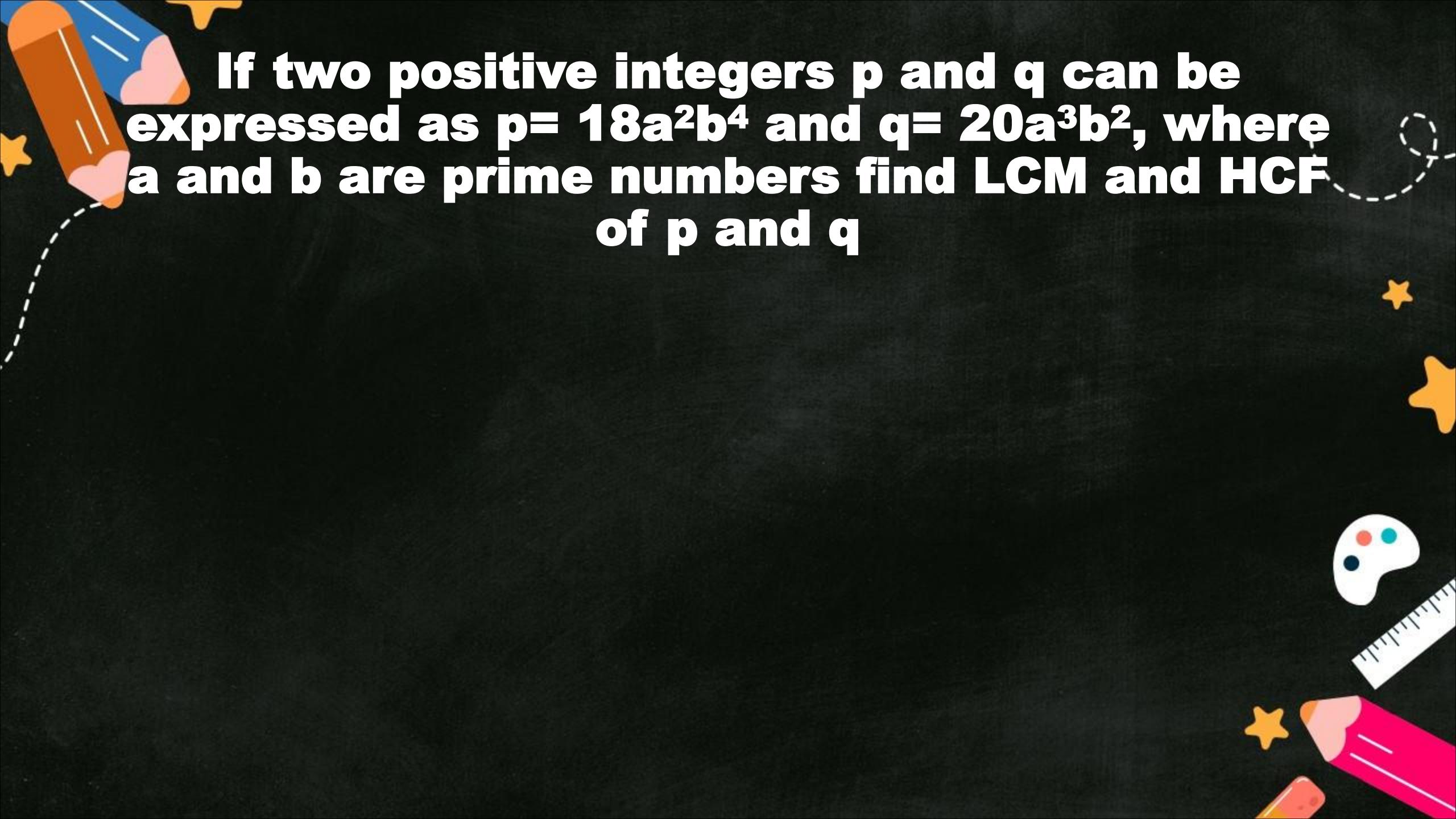


If  $\text{HCF}(98, 28) = m$ , and  $\text{LCM}(98, 28) = n$ ,  
then the value of  $n - 7m$  is



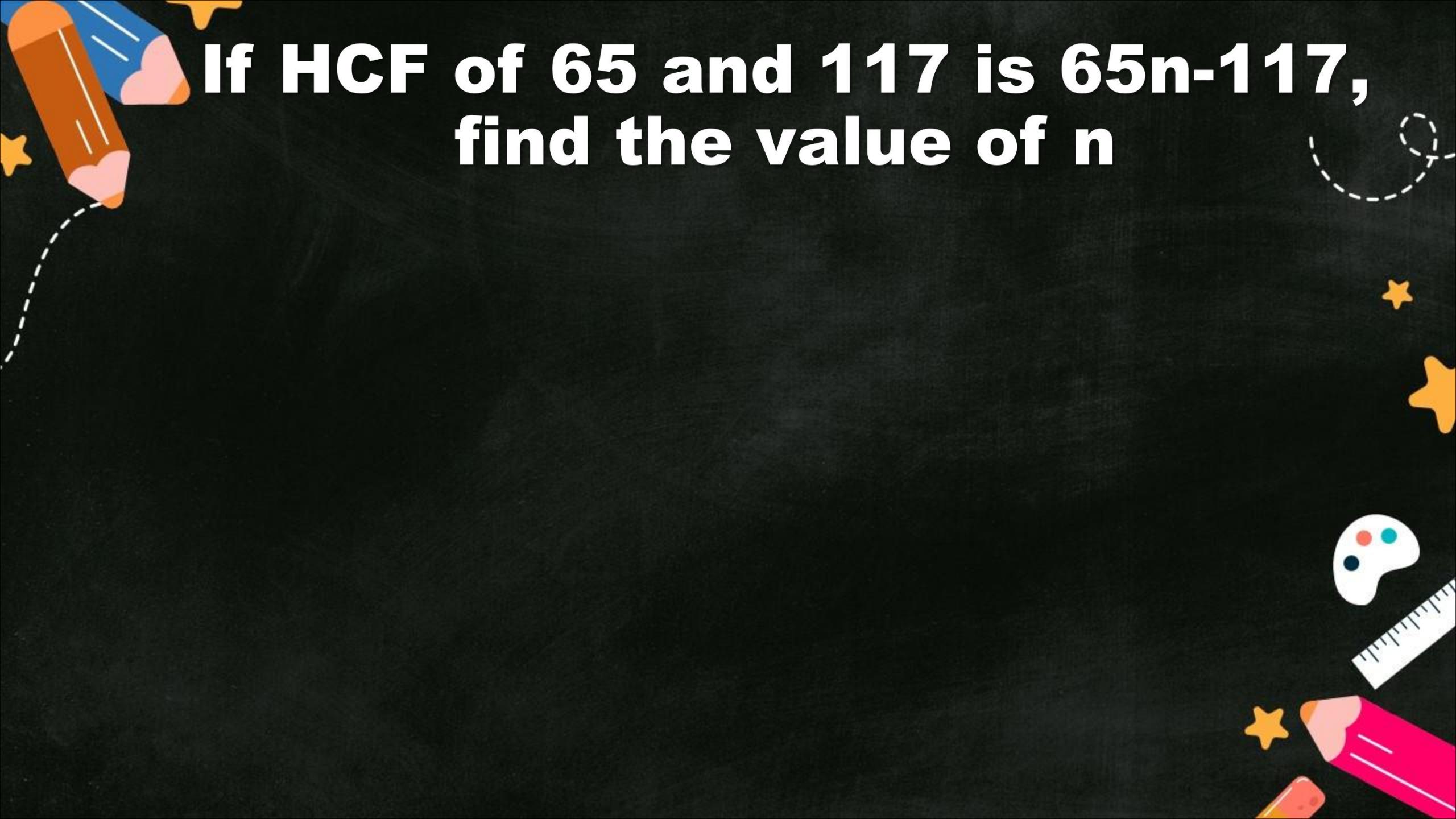
**The greatest number which divides 70 and 125 leaving remainder 5 and 8 respectively is :**





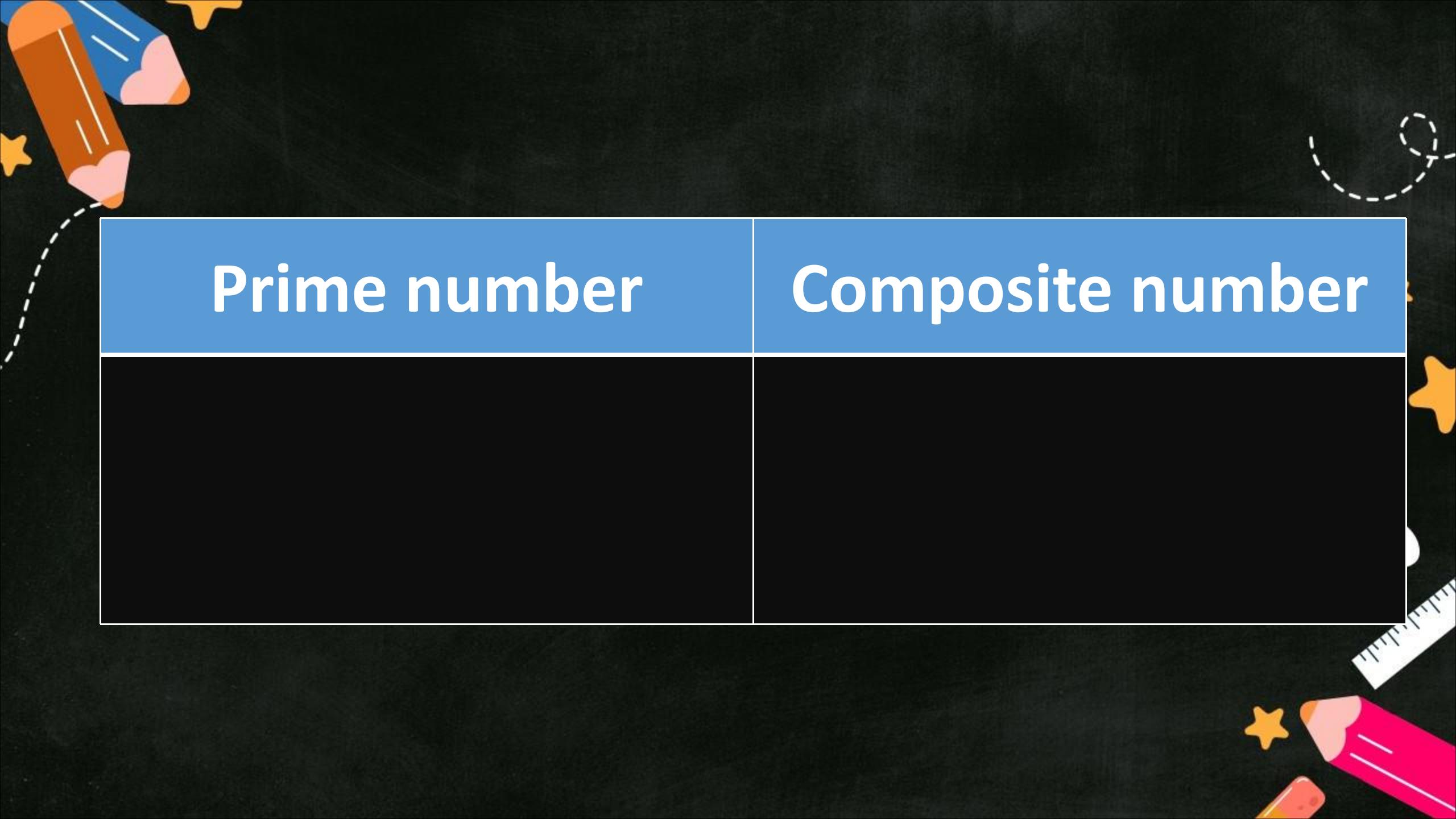
If two positive integers  $p$  and  $q$  can be expressed as  $p = 18a^2b^4$  and  $q = 20a^3b^2$ , where  $a$  and  $b$  are prime numbers find LCM and HCF of  $p$  and  $q$





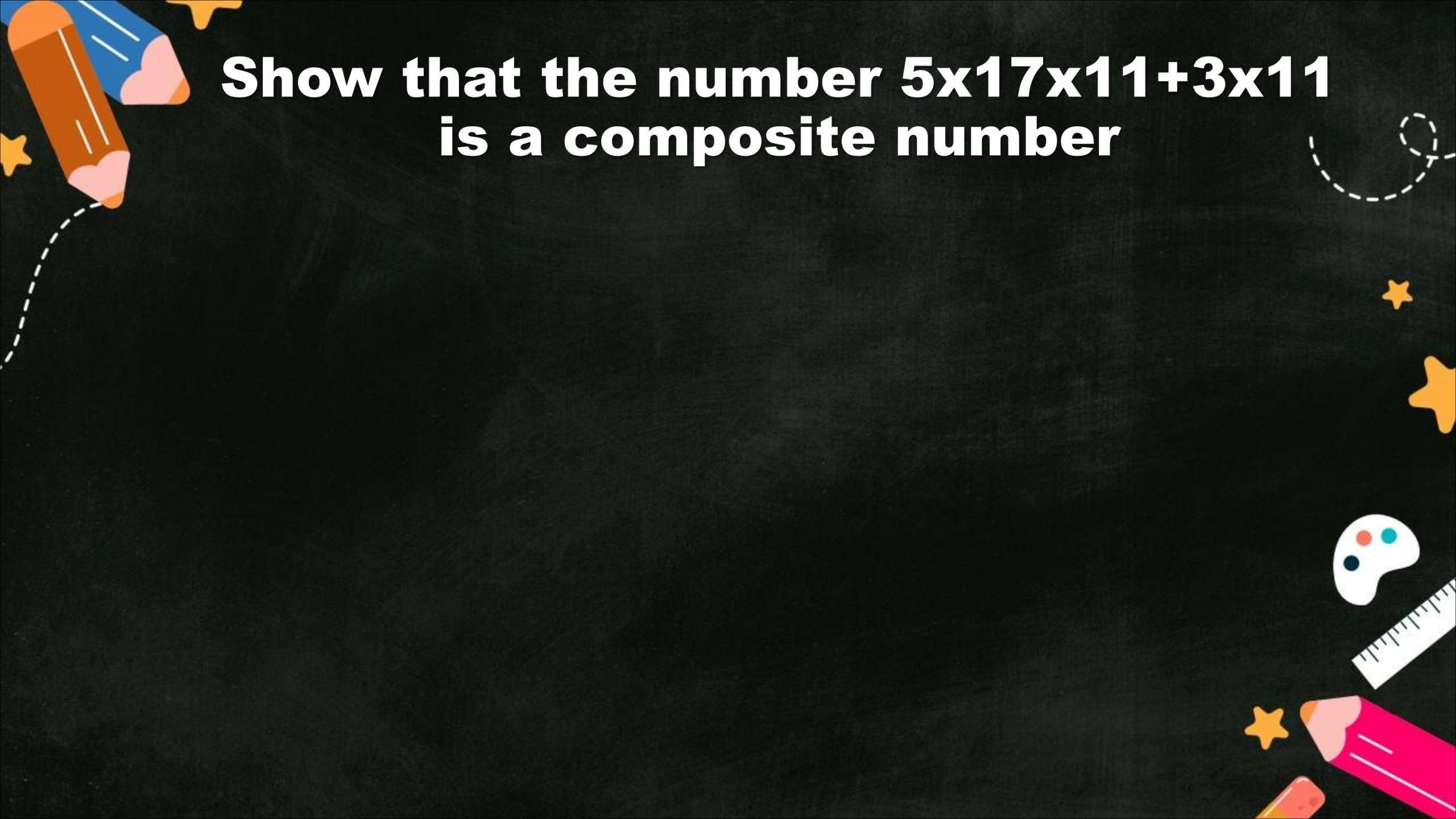
If HCF of 65 and 117 is  $65n-117$ ,  
find the value of n





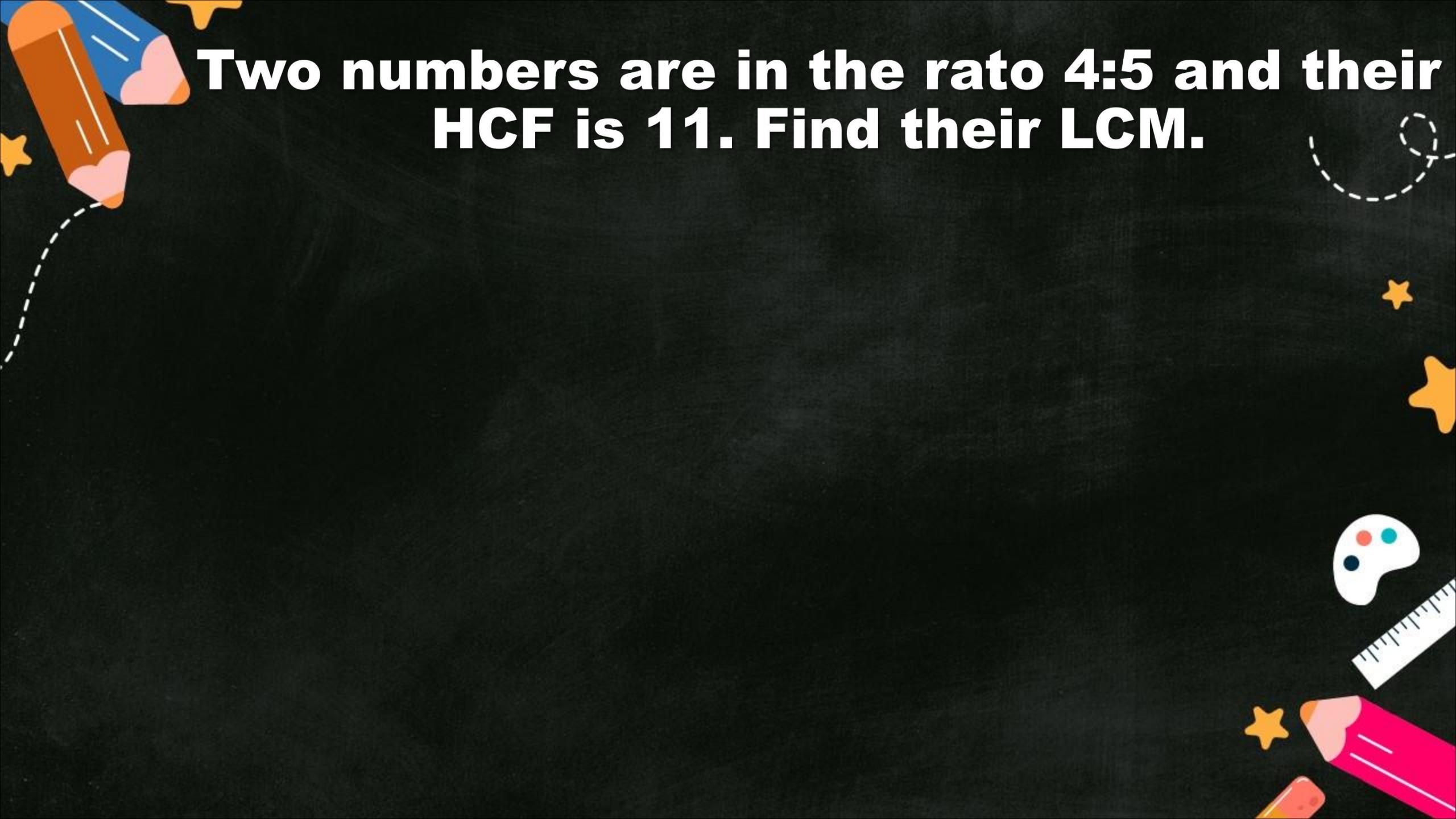
Prime number

Composite number



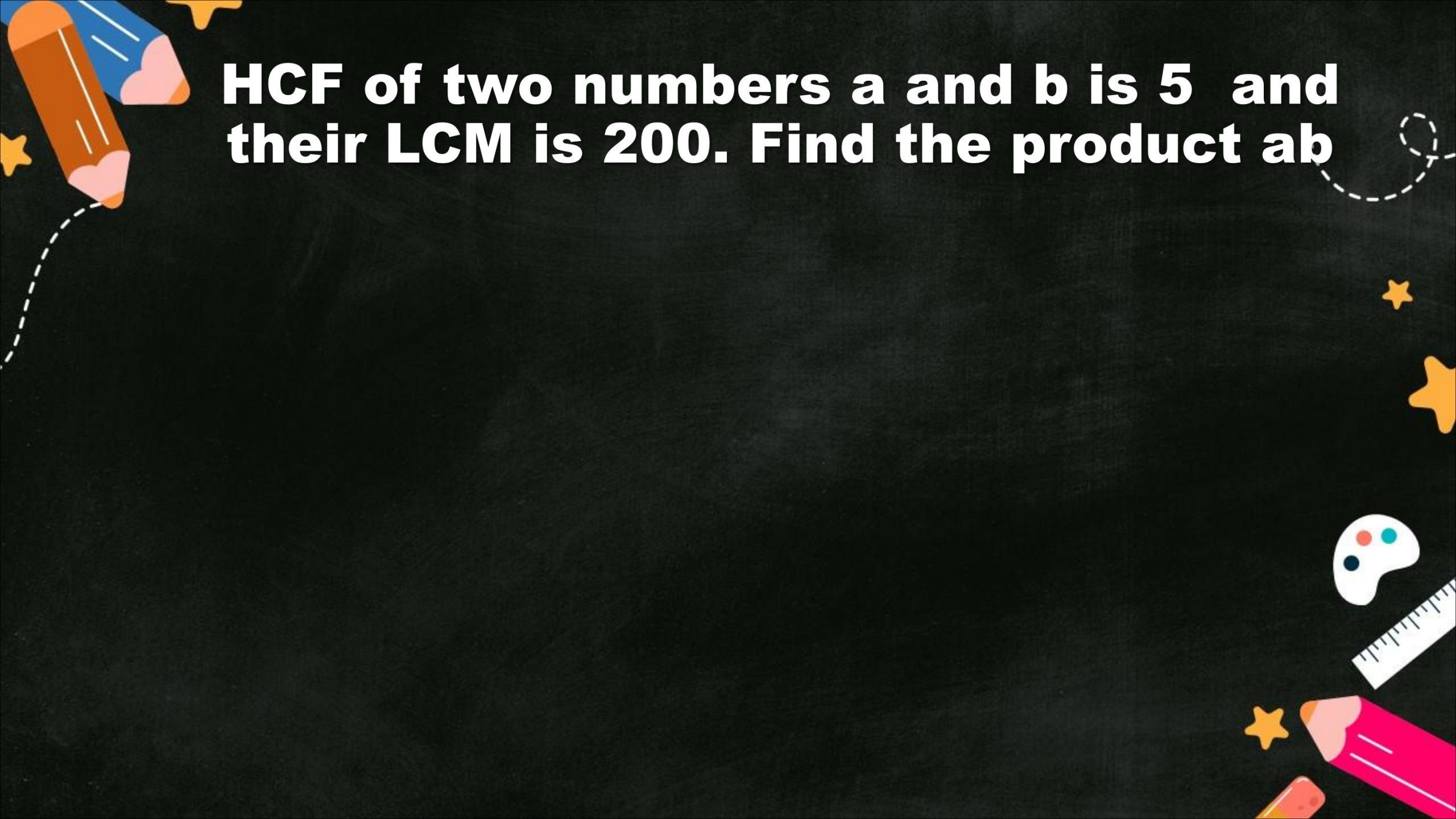
Show that the number  $5 \times 17 \times 11 + 3 \times 11$   
is a composite number





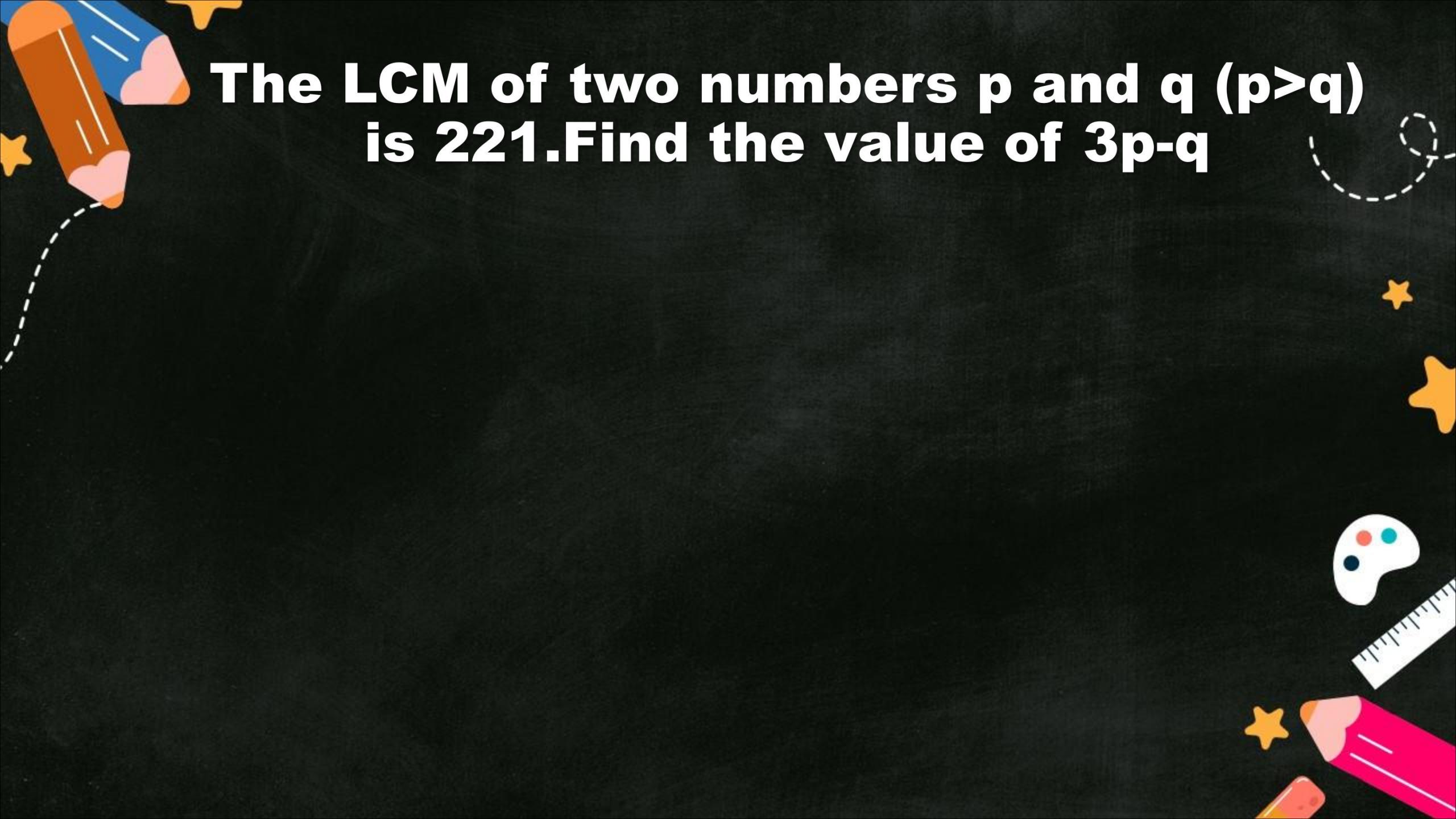
Two numbers are in the ratio 4:5 and their HCF is 11. Find their LCM.





**HCF of two numbers a and b is 5 and their LCM is 200. Find the product ab**



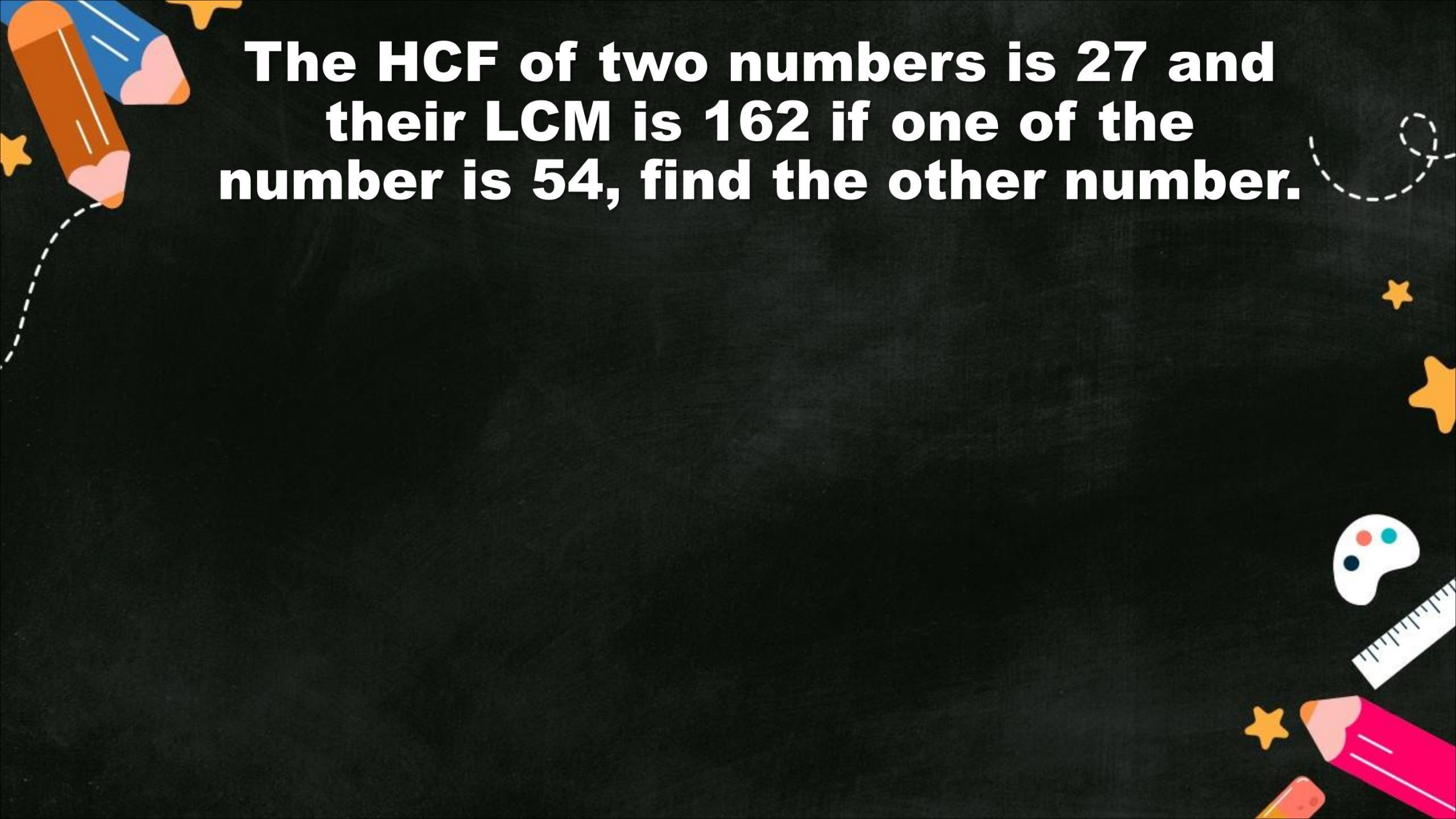


The LCM of two numbers  $p$  and  $q$  ( $p > q$ ) is 221. Find the value of  $3p - q$



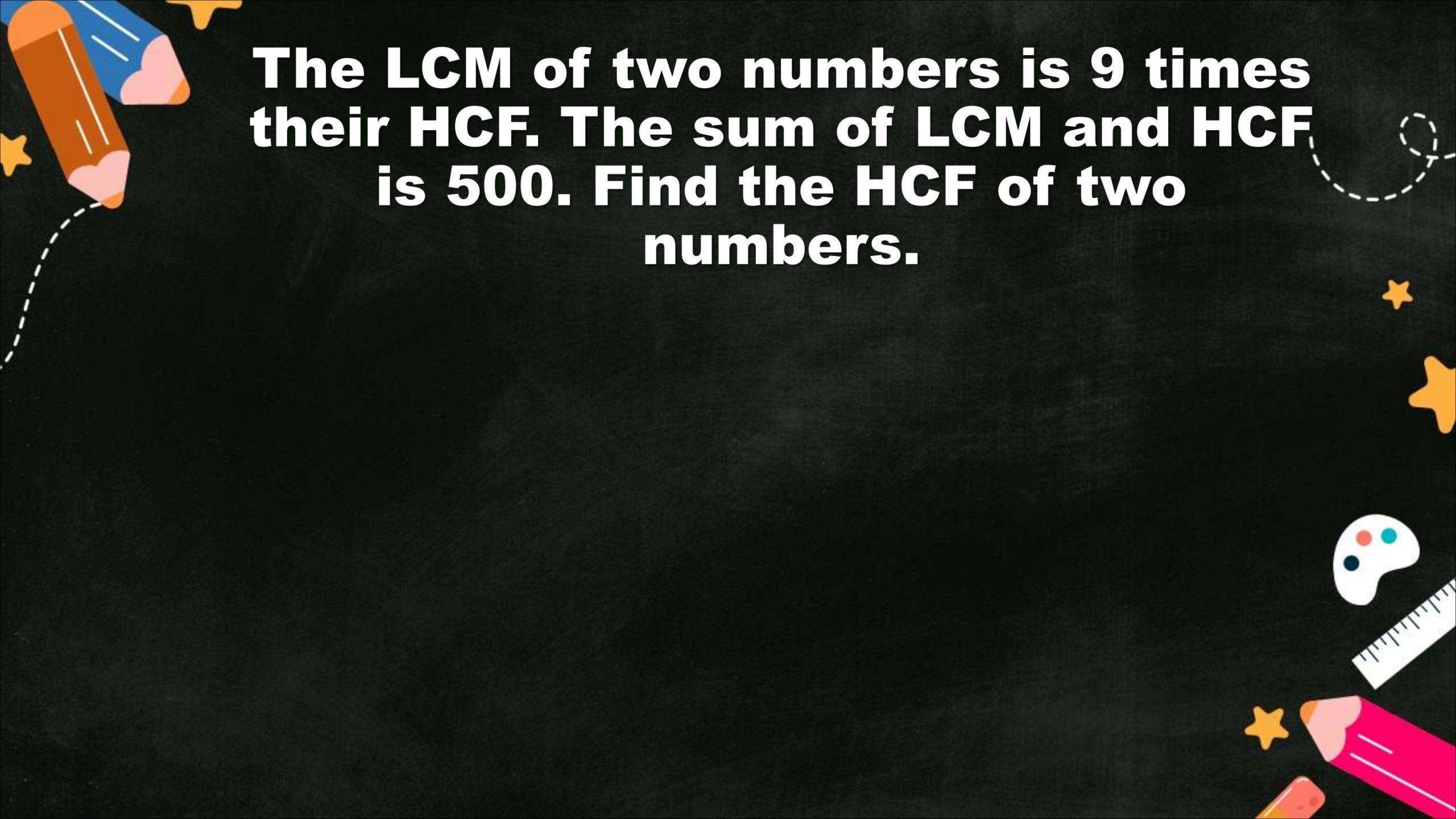
# Relationship between HCF and LCM of two positive integers

$$\text{HCF}(a,b) \times \text{LCM}(a,b) = axb$$



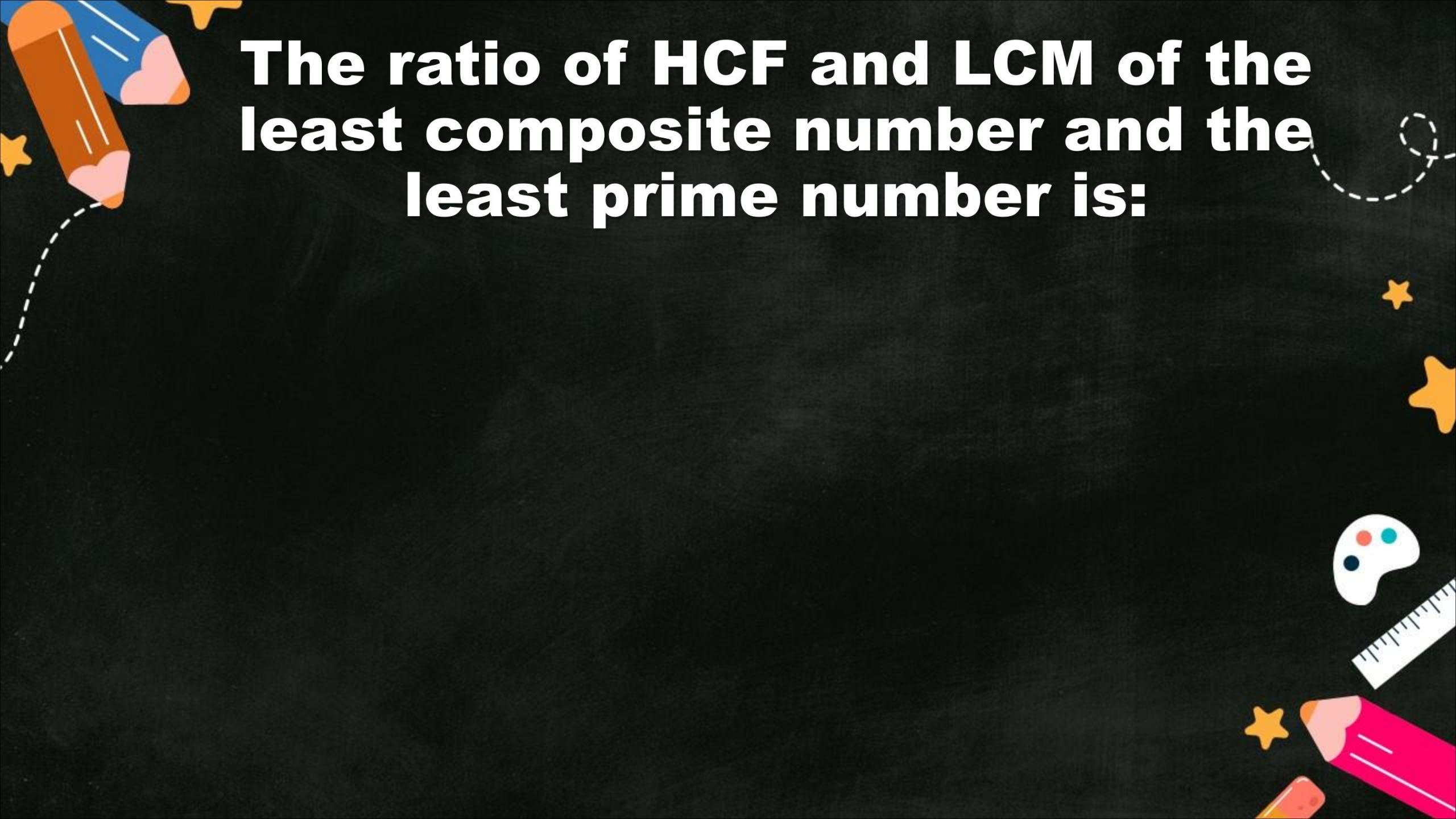
The HCF of two numbers is 27 and their LCM is 162 if one of the number is 54, find the other number.

**The HCF of two numbers is 27 and their LCM is 162 if one of the number is 54, find the other number.**



The LCM of two numbers is 9 times their HCF. The sum of LCM and HCF is 500. Find the HCF of two numbers.

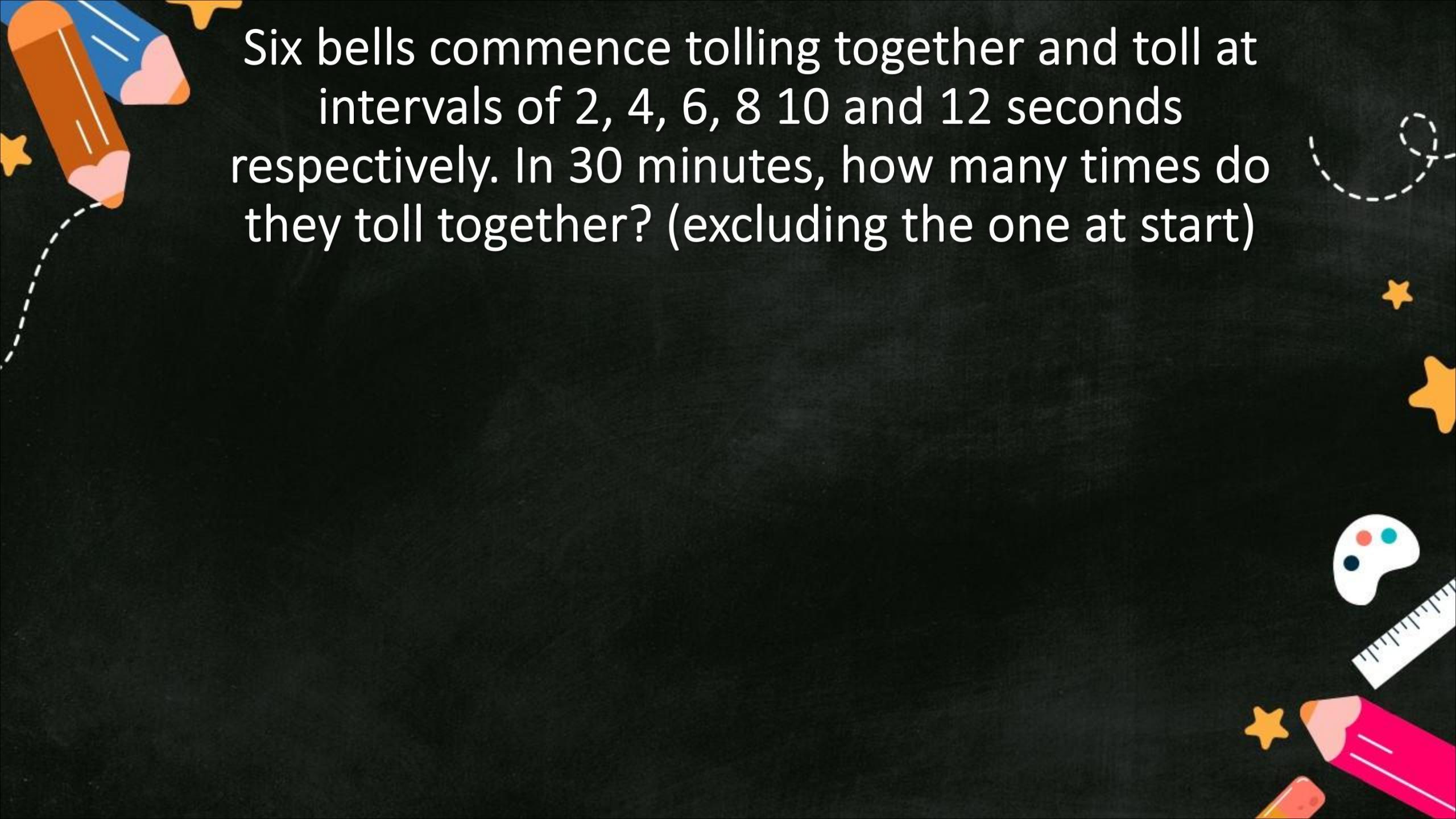
**HCF is a Factor of LCM  
OR  
Lcm is a Multiple of HCF**



The ratio of HCF and LCM of the least composite number and the least prime number is:

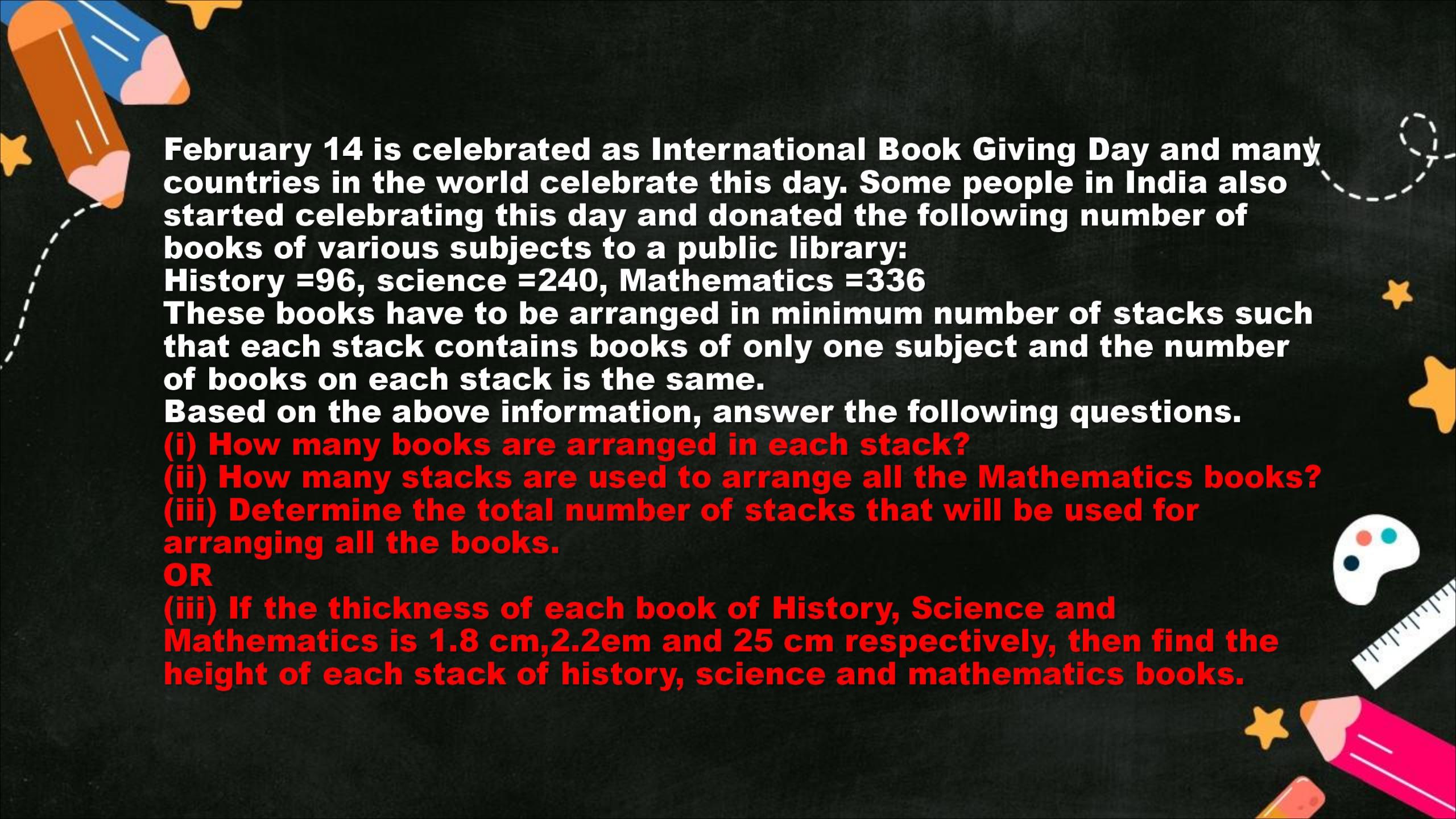


# Word problems on HCF and LCM



Six bells commence tolling together and toll at intervals of 2, 4, 6, 8 10 and 12 seconds respectively. In 30 minutes, how many times do they toll together? (excluding the one at start)





**February 14 is celebrated as International Book Giving Day and many countries in the world celebrate this day. Some people in India also started celebrating this day and donated the following number of books of various subjects to a public library:**

**History =96, science =240, Mathematics =336**

**These books have to be arranged in minimum number of stacks such that each stack contains books of only one subject and the number of books on each stack is the same.**

**Based on the above information, answer the following questions.**

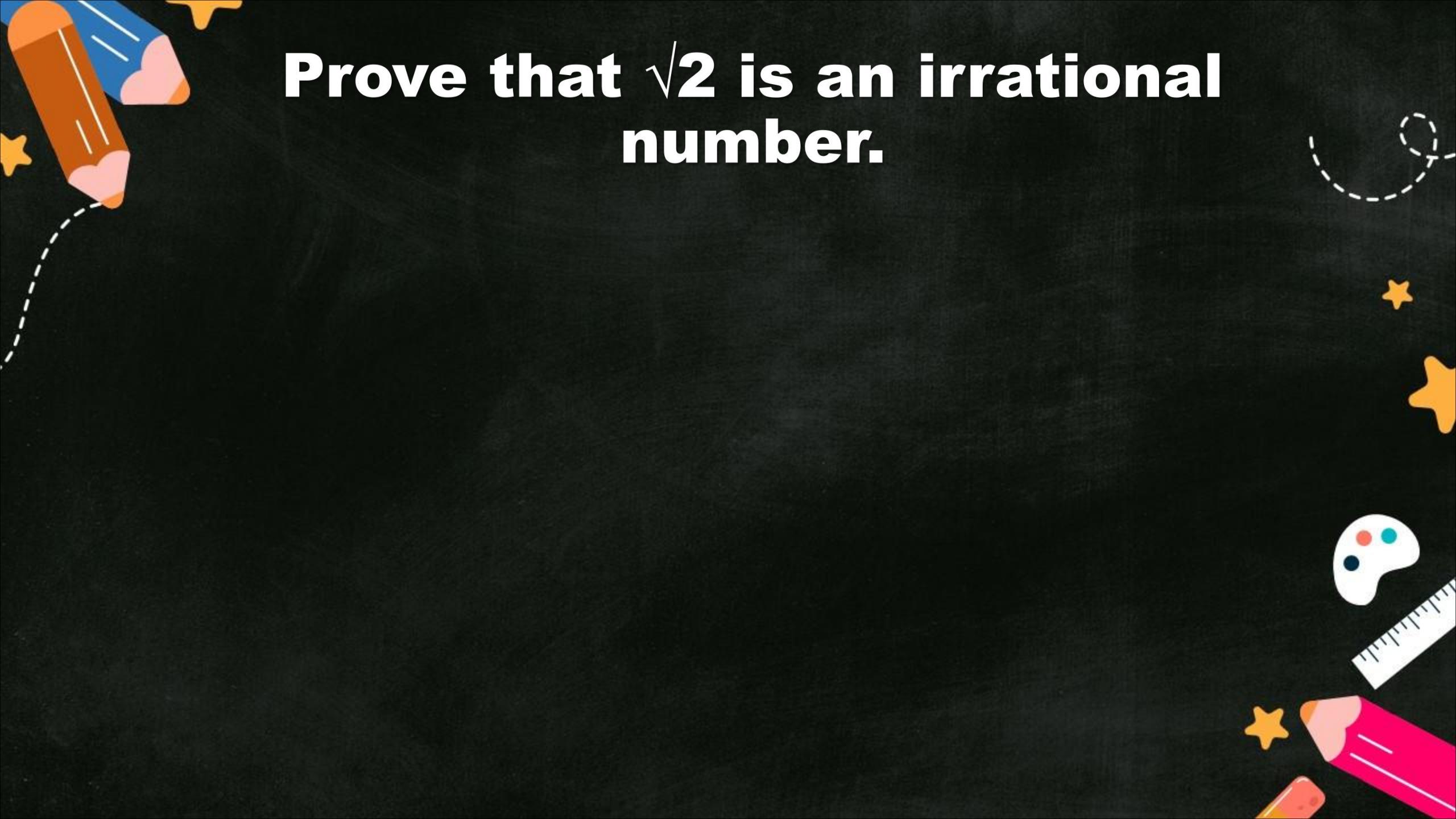
- (i) How many books are arranged in each stack?**
- (ii) How many stacks are used to arrange all the Mathematics books?**
- (iii) Determine the total number of stacks that will be used for arranging all the books.**

**OR**

- (iii) If the thickness of each book of History, Science and Mathematics is 1.8 cm, 2.2 cm and 25 cm respectively, then find the height of each stack of history, science and mathematics books.**

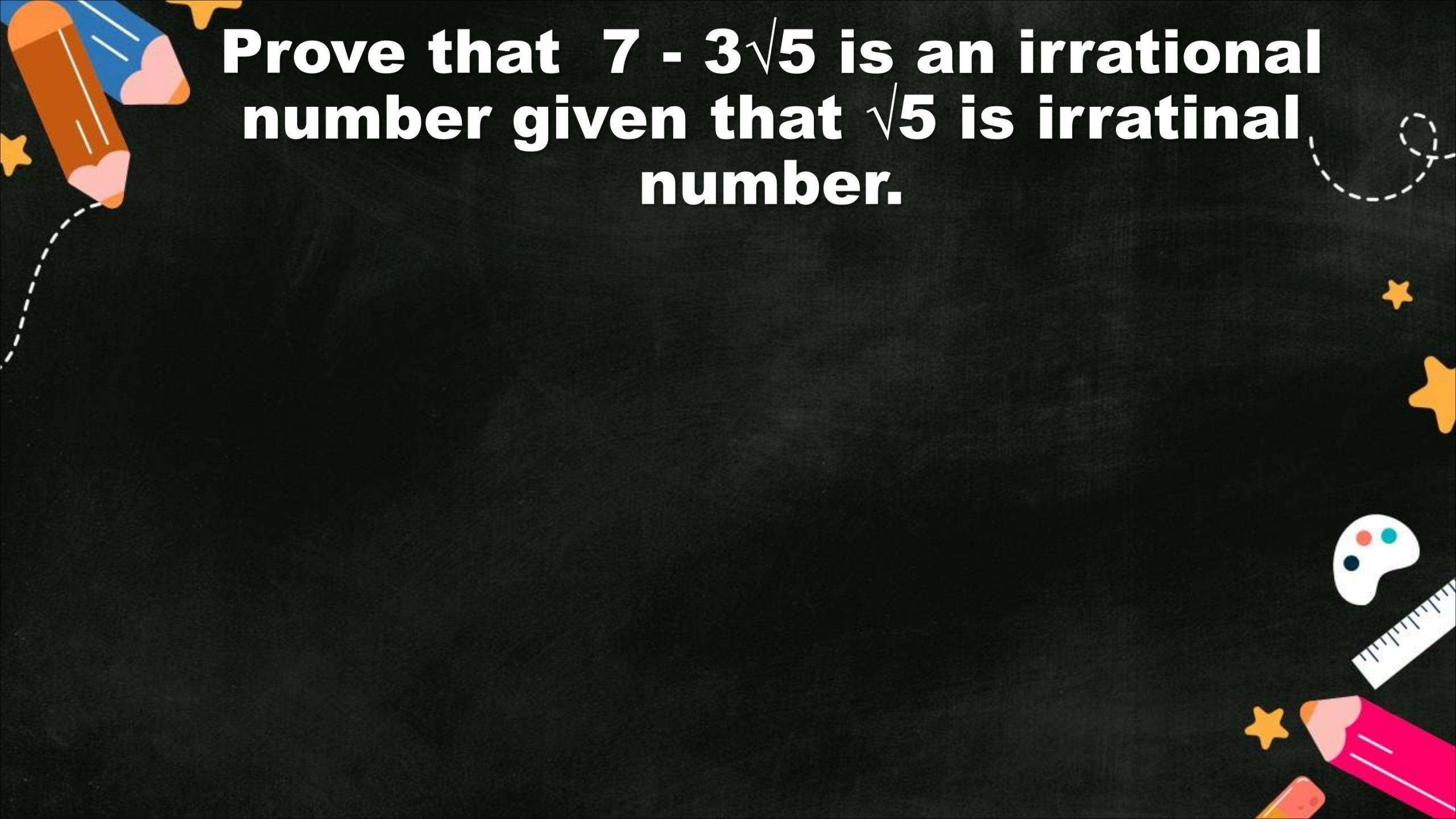


# Proving irrationality



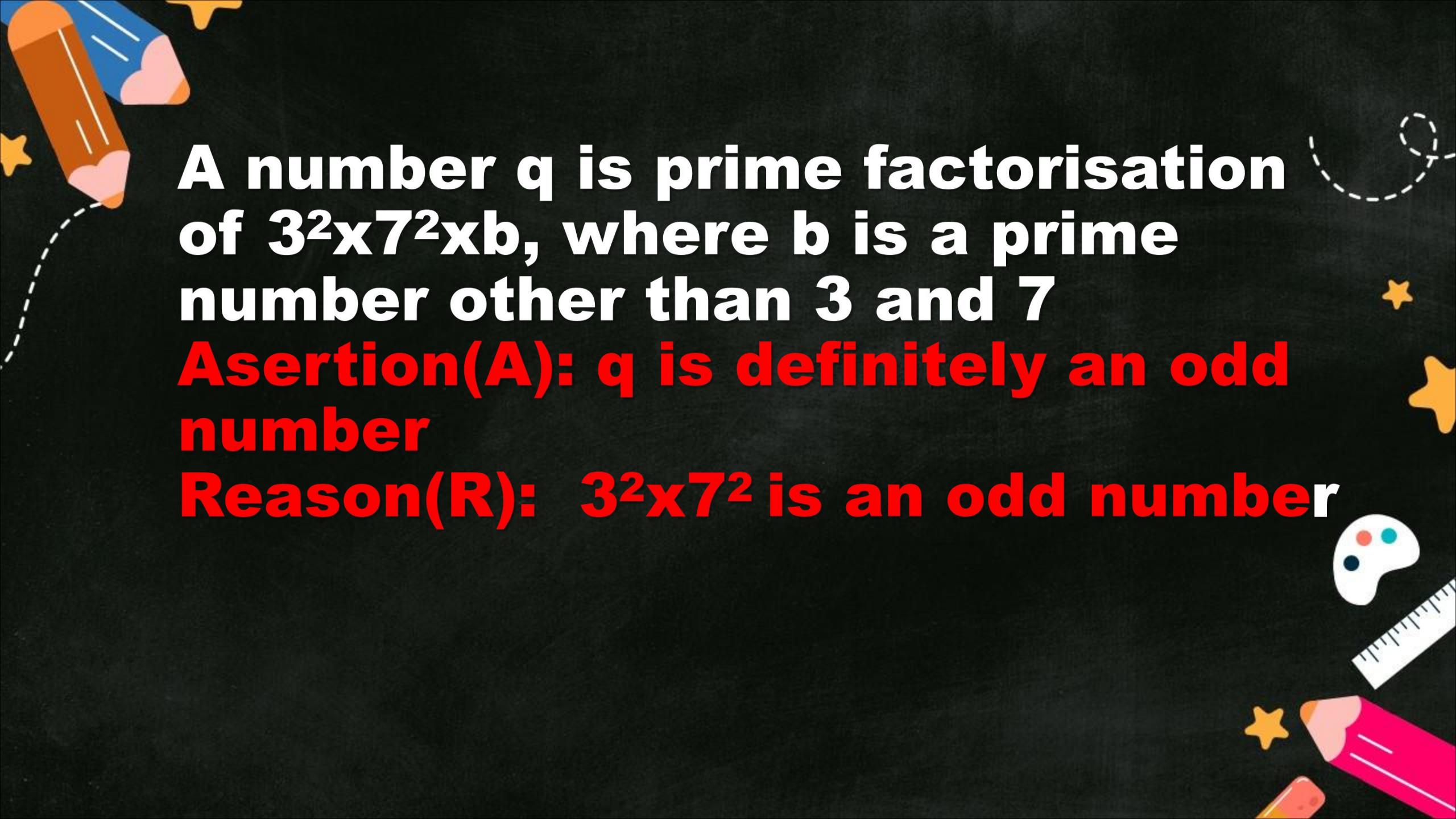
Prove that  $\sqrt{2}$  is an irrational number.





Prove that  $7 - 3\sqrt{5}$  is an irrational number given that  $\sqrt{5}$  is irrational number.

# Fundamental theorem of arithmetics



A number  $q$  is prime factorisation of  $3^2 \times 7^2 \times b$ , where  $b$  is a prime number other than 3 and 7

**Assertion(A):  $q$  is definitely an odd number**

**Reason(R):  $3^2 \times 7^2$  is an odd number**

