Real Numbers Class 10 Extra Questions Short Answer Type 2

Question 1.An army contingent of 616 members is to march behind an army band of 32 members in a parade. The two groups are to march in the same number of columns. What is the maximum number of columns in which they can march?

Solution:For the maximum number of columns, we have to find the HCF of 616 and 32.

Now, since 616 > 32, we apply division lemma to 616 and 32.

We have, $616 = 32 \times 19 + 8$

Here, remainder $8 \neq 0$. So, we again apply division lemma to 32 and 8.

We have, $32 = 8 \times 4 + 0$

Here, remainder is zero. So, HCF (616, 32) = 8

Hence, maximum number of columns is 8.

Question 2.Find the LCM and HCF of 12, 15 and 21 by applying the prime

factorisation method.

Solution:The prime factors of 12, 15 and 21 are

12 $2^2 \times 3$, 15 = 3 × 5 and 21 = 3 × 7

Therefore, the HCF of these integers is 3.

2^2, 3^1, 5^1 and 7^1 and are the greatest powers involved in the prime factors of 12,

15 and 21.

So, LCM (12, 15, 21) = $2^2 \times 3^1 \times 5^1 \times 7^1$ = 420.

Question 3.Find the LCM and HCF of the following pairs of integers and verify

that LCM × HCF = product of the two numbers.

(1) 26 and 91   (ii) 198 and 144

Solution:(i) We have, 26 = 2 × 13 and 91 = 7 × 13

Thus, LCM (26, 91) = 2 × 7 × 13 = 182   HCF (26, 91) = 13

Now, LCM (26, 91) × HCF (26, 91) = 182 × 13 = 2366

and Product of the two numbers = 26 × 91 = 2366

Hence, LCM × HCF = Product of two numbers.

Solution:

To find the time after which they meet again at the starting point, we have to find LCM of 18 and 12 minutes. We have

2	18
3	9
3	3
	1

2	12
2	6
3	3
	1

Therefore, LCM of 18 and 12 = $2^2 \times 3^2 = 36$

So, they will meet again at the starting point after 36 minutes.

Question 5.Write down the decimal expansions of the following numbers:

(i) 3550 (ii) 151600

Solution:

(i)

We have, $\dfrac{35}{50} = \dfrac{35}{5^2 \times 2} = \dfrac{35 \times 2}{5^2 \times 2 \times 2} = \dfrac{70}{5^2 \times 2^2}$

$= \dfrac{70}{10^2} = \dfrac{70}{100} = 0.70$

(ii)

We have, $\dfrac{15}{1600} = \dfrac{15}{2^6 \times 5^2} = \dfrac{15 \times 5^4}{2^4 \times 2^2 \times 5^2 \times 5^4} = \dfrac{15 \times 625}{2^6 \times 5^6}$

$= \dfrac{9375}{10^6} = \dfrac{9375}{1000000} = 0.009375$