STD – 10 MATHS

CHAPTER - 1

REAL NUMBER

EXERCISE - 1.2 Q-2

2. Find the LCM and HCF of the following pairs of integers and verify that LCM × HCF = product of the two numbers.

(i) 26 and 91

Expressing 26 and 91 as product of its prime factors, we get,

2	26
13	13
	1

7	91
13	13
	1

$26 = 2 \times 13 \times 1$

$91 = 7 \times 13 \times 1$

Therefore, LCM (26, 91)

$= 2 \times 7 \times 13 \times 1$

$= 182$

And HCF (26, 91) = 13

Verification Now, product of 26 and 91

$= 26 \times 91$

$= 2366$

And Product of LCM and HCF

$= 182 \times 13$

$= 2366$

Hence, LCM $\times$ HCF = product of the 26 and 91.

(ii) 510 and 92

Expressing 510 and 92 as product of its prime factors, we get,

2	510
3	255
5	85
17	17
	1

2	92
2	46
23	23
	1

$510 = 2 \times 3 \times 17 \times 5 \times 1$

$92 = 2 \times 2 \times 23 \times 1$

Therefore, LCM (510, 92)

$= 2 \times 2 \times 3 \times 5 \times 17 \times 23$

$= 23460$

And HCF (510, 92) = 2

Verification Now, product of 510 and 92

$= 510 \times 92$

$= 46920$

And Product of LCM and HCF

$= 23460 \times 2$

$= 46920$

Hence, LCM $\times$ HCF = product of the 510 and 92.

(iii) 336 and 54

Expressing 336 and 54 as product of its prime factors, we get,

2	336
2	168
2	84
2	42
3	21
7	7
	1

2	54
3	27
3	9
3	3
	1

$336 = 2 \times 2 \times 2 \times 2 \times 7 \times 3 \times 1$

$54 = 2 \times 3 \times 3 \times 3 \times 1$

Therefore, LCM(336, 54)

$= 2^4 \times 3^3 \times 7$

$= 3024$

And HCF(336, 54)

$= 2 \times 3$

$= 6$

Verification Now, product of 336 and 54

= 336 × 54

= 18,144

And Product of LCM and HCF

= 3024 × 6

= 18,144

Hence, LCM × HCF

= product of the 336 and 54.

Thanks

For watching