INFINITY CLASSES

WORKSHEET-1,2019-2020

CLASS: X **SUBJECT: MATHEMATICS** **TOPIC- REAL NUMBERS**

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1) Find the HCF of 867 and 255 using Euclid's division algorithm.
2) Using Euclid's division algorithm, find the HCF of 48250 and 38540
3) Express HCF of 468 and 222 as 468x + 222y.
4) Determine the prime factorization of **i)**13915 **ii)**556920
5) If HCF of 408 and 1032 is expressible in the form 1032m – 408 x 5. Find m.
6) Show that square of any positive integer cannot be of the form 5q+2 or 5q+3 for any integer q.
7) Prove that product of any three consecutive positive integers is divisible by 6.
8) Show that one of the numbers n, n + 2 and n + 4 is divisible by 3.
9) For any positive integer n, prove that $n^3 - n$ is divisible by 6.
10) Show that p^2 will leave a remainder 1 when divided by 8, if p is an odd positive integer.
11) The HCF and LCM of two numbers are 9 and 360 respectively. If one number is 45, write the other number.
12) Find the ratio between the LCM and HCF of 5, 15 and 20.
13) Find the smallest number which when increased by 17 is exactly divisible by both 520 and 468.
14) What is the largest number that divides 626, 3127 and 15628 and leaves a remainder of 1, 2 and 3 respectively.
15) Two equilateral triangles have the sides of lengths 34 cm and 85 cm respectively. Find the greatest length of tape that can measure the sides of both of them exactly.
16) A forester wants to plant 66 apple trees, 88 banana trees and 110 mango trees in equal rows (in terms of number of trees). Also he wants to make distinct rows of trees (i.e., only one type of trees in one row). Find the number of minimum rows required.
17) On a morning walk three persons step off together and their steps measure 40 cm, 42 cm, 45 cm, what is the minimum distance each should walk so that each can cover the same distance in complete steps?
18) Find the LCM of 2.5, 0.5 and 0.175
19) Prove that √2 + √3 is an irrational number.
20) Prove that $15 + 7\sqrt{3}$ be an irrational number.
21) Write whether $\frac{2\sqrt{45}+3\sqrt{20}}{2\sqrt{5}}$ on simplification gives a rational or an irrational number.
22) If $\frac{241}{4000} = \frac{241}{2^m 5^n}$, find the values of m and n where m and n are non-negative integers. Hence write its decimal expansion without actual division.
23) Without actually performing the long division, state whether the following rational numbers will have terminating or non-terminating decimal expansion: i) $\frac{64}{455}$ ii) $\frac{63}{90}$
24) The decimal expansion of the rational number $\frac{43}{2^4 5^3}$, will terminate after how many places of decimal.
25) The HCF of 2472, 1284 and a third number N is 12. If their LCM is $2^3 \times 3^2 \times 5 \times 103 \times 107$. Then find the number N.