REAL NUMBERS   [LEARN HERE SERVE EVERYWHERE]

1) What is Euclid Division Algorithm? Show that 12^n cannot end with the digit 0 or 5 where nϵN.

2) Can two numbers have 28 as their HCF and 812 as their LCM? Give reasons.

3) Find the smallest number which leaves remainders 8 & 12 when divided by 28 & 32 respectively.

4) Prove that one and only one out of n, n + 2 and n + 4 is divisible by 3, where n is any positive integer.

5) Prove that product of three consecutive integers is divisible by 6.

6) If 'd ' is the H.C.F of 963 & 657, Find the value of x & y satisfying d = 963x + 657y.

7) Prove that 2- 5√3 is an irrational number.

8) Show that cube of any positive integer is of the form 9m, 9m + 1 or 9m + 8, for some integer m.

9) After how many decimal places the decimal expansion of the rational number $\frac{441}{2^2 \times 5^7 \times 7}$ will terminate.

10) What can you say about the product and difference of two different irrational numbers , justify with examples.

11) Using Euclid's division algorithm, find the largest number that divides 398,436,542 leaving remainders 7,11 & 15 respectively.

12) A mason has to fit a bathroom with square marble type of largest possible size. The size of bathroom is 10 fit by 8 fit. what would be the size in inches of tile and required that has to be cut and how many such tiles are required.

13) If 'd ' is the H.C.F of 210 & 55, Find the value of x & y satisfying d = 210 x + 55y.

14) Prove that if x & y are odd positive integers , then prove that $x^2 + y^2$ is even & not divisible by 4.

15) Find the L.C.M & H.C.F of 144, 180 & 192 by prime factorisation method.

16) Without actually performing the long division, find if 987/10500, 6/15 , 1/16, 5/7 will have terminating or non-terminating (repeating) decimal expansion. Give reasons for your answer.

17) Check whether 24^n can end with digit zero or not where n ϵN .

18) Given that H.C.F. (306, 657) = 9, find L.C.M. (306, 657)

19) Show that cube of any positive integer is of the form 9m, 9m + 1 or 9m + 8, for some integer m.

20) Find the greatest number of 6 digits exactly divisible by 24, 15, 36.

21) Verify by using Euclid's division algorithm that the numbers 350 & 849 are co –primes.

22) The traffic lights at three different road crossings change after every 48 seconds , 72 seconds and 108 seconds respectively. If they all change simultaneously at 8 a.m, then at what time will they again change simultaneously ?

23) Show that square of any positive integer can not be of form 5q +2 Or 5q +3 for any integer q .

24) Prove that there is no rational no, whose square is 5 .

25) Find the LCM of $\frac{1}{4}$ & $\frac{5}{6}$.

26) After how many decimal places the decimal expansion of the rational number $\frac{68}{2^{113} \times 5^{110}}$ will terminate.

27) In a seminar,the number of participants in hindi,english and maths are 60, 84 ,108 respectively.Find the minimum no. of rooms required if in each room the same no of participants are to be seated and all of them being in the same subject.

28) Show that the square of an odd positive integer is of the form 8m + 1, for some whole number m.

29) Can two numbers have 18 as their HCF and 380 as their LCM? Give reasons.

30) A circular field has a circumference of 360 km . Three cyclists start together & can cycle 48 , 60 & 72 km per day , round the field . When will they meet again ?   *TARUN SHARMA*

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