

Tarun Classes of Mathematics

IIT-JEE Mains | CBSE | PU-CET | NDA

CLASS 10 – CBSE | MATHEMATICS

Real Numbers

SECTION -A (Multiple choice questions)

- If the product of two co-prime numbers is 553, then their LCM is:
(a) 1 (b) 553 (c) 7 (d) 79
- Let a and b be two positive integers such that $a = p^3 q^4$ and $b = p^2 q^3$, where p and q are prime numbers. If $\text{HCF}(a, b) = p^m q^n$ and $\text{LCM}(a, b) = p^r q^s$, then $(m + n)(r + s) =$
(a) 15 (b) 30 (c) 35 (d) 72
- If $a = 2^2 \times 3^x$, $b = 2^2 \times 3 \times 5$, $c = 2^2 \times 3 \times 7$, and $\text{LCM}(a, b, c) = 3780$, then x is equal to
(a) 1 (b) 2 (c) 3 (d) 0
- If $\text{H.C.F.}(420, 189) = 21$ then $\text{L.C.M.}(420, 189)$ is
(a) 420 (b) 1890 (c) 3780 (d) 3680
- If sum of two numbers is 216 and their HCF is 27, then the possible number of pairs of such numbers are
(a) 2 (b) 3 (c) 4 (d) 5
- The LCM of two prime numbers p and q ($p > q$) is 221. Find the value of $3p - q$.
(a) 4 (b) 28 (c) 38 (d) 48
- LCM of the numbers ' x ' and ' y ' where y is a multiple of ' x ' is given by
(a) x (b) y (c) xy (d) $x + y$
- The largest number which divides 70 and 125, leaving remainders 5 and 8 respectively, is
(a) 13 (b) 65 (c) 875 (d) N.O.T.

SECTION - B

- Check whether 24^n can end with digit zero or not where $n \in \mathbb{N}$.
- Is the sum of the two different irrational numbers only irrational? Justify your answer.
- Find the L.C.M & H.C.F of 144, 180 & 192 by prime factorisation method.
- Two tankers contain 850 litres and 680 litres of petrol respectively. Find the maximum capacity of a container which can measure the petrol of either tanker in exact number of times.

13. Find the least number which is divisible by all the numbers from 1 to 10 (both inclusive).
14. Prove that $\sqrt{2}$ is an irrational number.
15. If $\sqrt{3}$ is an irrational number, Prove that $5 - 2\sqrt{3}$ is an irrational number
16. Prove that $\frac{2 - \sqrt{3}}{5}$ is an irrational number, if it is given that $\sqrt{3}$ is an irrational number.
17. Three alarm clocks ring at intervals of 4, 12 and 20 minutes respectively. If they start ringing together, after how much time will they next ring together?
18. The traffic lights at three different road crossings change after every 48 seconds, 72 seconds and 108 seconds resp. If they all change simultaneously at 8 a.m, then at what time will they again change simultaneously?
19. In a formula racing competition, the time taken by two racing cars A and B to complete 1 round of the track is 30 minutes and p minutes respectively. If the cars meet again at the starting point for the first time after 90 minutes and the HCF (30, p) = 15, then find the value of p.
20. Ravish runs a book shop at school of Math, Gurgaon. He received 480 chemistry books, 192 physics books and 672 Mathematics books of class XI. He wishes to average these books in minimum numbers of stacks such that each stack consists of the books on only one subject and the number of books in each stack is the same.
- Find the number of books in each stack.
 - Find the Number of stacks of Mathematics books
 - Find the Minimum number of stacks of all the books.