

Class 10 Maths

CHAPTER 1 - REAL NUMBERS

26 Previous year questions (PYQS)

Q.1 Explain why $(3 \times 5 \times 7) + 7$ is a composite number? **CBSE 2015**

Q.2 Write the HCF of the smallest composite number and the smallest prime number. **CBSE 2008,18**

Answer: 2

Q.3 Find the LCM and HCF of 120 and 144 by fundamental theorem of arithmetic. **CBSE 2011**

Answer: 720 , 24

Q.4 Two positive integers a and b can be written as $a = x^3y^2$ and $b = xy^3$. x, y are the prime numbers. Find the LCM of (a,b). **CBSE 2019**

Answer: x^3y^3

Q.5 The HCF of two numbers a and b is 5 and the LCM is 20. Find the product of ab. **CBSE 2019**

Answer: 1000

Q.6 Check whether 16^n can end with the digit 0 or 5, for any natural number n. **CBSE 2015**

Q.7 If two positive integers p and q can be expressed as $p = ab^2$ and $q = a^3b$; where a,b being prime numbers, find the LCM (p,q). **CBSE**

2011

Answer: a^3b^2

Q.8 If $\text{HCF}(253, 440) = 11$ and $\text{LCM}(253, 440) = 253 \times R$. find the value of R. **CBSE 2011,12**

Answer: 40

Q.9 Prove that $\sqrt{2}$ is irrational. **CBSE 08, 09, 10, 19**

Q.10 Prove that $\sqrt{3}$ is an irrational number . **CBSE 2020 Basic**

Q.11 Prove that $3\sqrt{2}$ is an irrational number. **CBSE 2008**

Q.12 Prove that $(2 + \sqrt{3})/5$ is an irrational number, given that $\sqrt{3}$ is an irrational number. **CBSE 2019**

Q.13 Is the product of a rational number and an irrational number, a rational number? Is the product of two irrational numbers, a rational number or an irrational number? Justify by giving examples. **CBSE 2015**

Answer: No, either rational or irrational

Q.14 Prove that each of the following is an irrational number.

(i) $2\sqrt{3}/5$ **CBSE 11,12**

(ii) $6 + \sqrt{2}$ **CBSE 10,11**

(iii) $5 - \sqrt{2}$ **CBSE 15**

Q.15 Prove that $2\sqrt{3} + \sqrt{5}$ is an irrational number. Also, check whether $(2\sqrt{3} + \sqrt{5}).(2\sqrt{3} - \sqrt{5})$ is rational or irrational. **CBSE 2012**

Q.16 Find the HCF and LCM of 12, 15 and 21 by applying the prime factorization method. **CBSE 2020 standard**

Answer: 3 and 420

Q.17 Check whether 6^n can end with the digit 0 for any natural number n . **CBSE 2010,11,12**

Q.18 Explain why $(7 \times 11 \times 13) + 13$ and $(7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1) + 5$ are composite numbers? **CBSE 2012,14,15**

Q.20 Prove that $\sqrt{5}$ is an irrational number . **CBSE 2020 (standard) ,19,15**

Q.21 Check whether 15^n can end with the digit 0 for any natural number n. **CBSE 2011,12**

Q.22 Prove that $2 + \sqrt{5}$ is an irrational number . **CBSE 2011, 12**

Q.22 Prove that $(5 + 3\sqrt{2})$ is an irrational number, given that $\sqrt{2}$ is an irrational number. **CBSE 2018**

Q.23 On GT road, three consecutive traffic lights change after 36, 42 and 72 seconds. If the lights are first switched on at 9:00 a.m. then at what time will they change simultaneously? **CBSE 2012**

Answer: 9:08:24 am

Q.24 Find HCF and LCM of 404 and 96 and verify that $\text{HCF} \times \text{LCM} =$ product of the two given. **CBSE 2018**

Answer: HCF: 4 LCM: 9696 product: 38784

Q.25 Manoj and Aarti drive around a circular sports field. Manoj takes 16 minutes to complete one round while Aarti completes the round in 20 minutes. If both start at the same point, at the same time and go in the same direction, then after how much time will they meet at the starting point? **CBSE 2012**

Answer: 80 min

Q.26. Find the least number which when divided by 12, 16 and 24 leaves the remainder 7 in each case. **CBSE 2023**

Answer: 55