

CH-1 Real Numbers 15 Important Questions MATHS STANDARD

I. Choose the correct alternative from the given options.

Q. 1. The LCM of two numbers is 2400. Which of the following cannot be their HCF?

(A) 300 (B) 400 (C) 500 (D) 600

Q. 2. The difference of the irrational numbers $(5 + 2\sqrt{3})$ and $(5 - 2\sqrt{3})$ is:

(A) $5\sqrt{3}$ (B) $6 + 2\sqrt{3}$ (C) $5 + 4\sqrt{3}$ (D) 10

Q. 3. The LCM of $2^5 \times 3 \times 5$ and $2^2 \times 7 \times 5$ is:

(A) 140 (B) 3260 (C) 1360 (D) 3360

Q. 4. The quotient of $(5 + 3\sqrt{2})$ and $(5 - 3\sqrt{2})$ is:

(A) $(43 + 30\sqrt{2})/7$ (B) $(43 - 30\sqrt{2})/7$

(C) $43 + 30\sqrt{2}$ (D) $-(43 + 30\sqrt{2})$

Q. 5. Given that LCM of two numbers is 1449 and their HCF is 23. If one of the numbers is 207, then other number is:

(A) 261 (B) 161 (C) 361 (D) 167

Q. 6. π is a/an:

(A) rational (B) composite (D) prime (C) irrational

II. Case-Based Question

Q. 7. A sweet seller has 420 Bundi, Laddoo and 130 badam barfis. He wants to stack them in such a way that each stack has the same number, and they take up the least area of the tray.

Read carefully the above paragraph and answer any four questions:

(i) The prime factors of 420 are:

- (A) $2^2 \times 3^2 \times 5 \times 7$ (B) $2 \times 3 \times 5 \times 7$
(C) $2 \times 3 \times 5^2 \times 7$ (D) $2^2 \times 3 \times 5 \times 7$

(ii) Find the HCF of 420 and 130 is:

- (A) 10 (B) 30 (C) 20 (D) 15

(iii) The LCM of 420 and 130 is:

- (A) 4560 (B) 5460 (C) 6540 (D) 5640

(iv) The sum of exponents of prime factors in the prime factorization of 420 is:

- (A) 2 (B) 3 (C) 5 (D) 4

(v) The sum of exponents of prime factors in the prime factorization of 130 is:

- (A) 1 (B) 3 (C) 2 (D) 4

III. Very Short Answer Type Questions

Q. 8. a and b are two positive integers such that the least prime factor of a is 3 and the least prime factor of b is 5. Then calculate the least prime factor of $(a + b)$.

Q. 9. If HCF of two numbers is 18 and their product is 12960, then find the LCM.

Q. 10. If p is a prime number, then find LCM of p , p^2 and p^3 .

IV. Short Answer Type Questions-I

Q. 11. Write whether $(2\sqrt{125} + \sqrt{25})/3\sqrt{5}$ on simplification gives an irrational or a rational number.

Q. 12. On a morning walk three persons steps off together and their steps measure 40 cm, 42 cm and 45 cm respectively. What is the minimum distance each should walk so that each can cover the same distance in complete steps?

Q. 13. Prove that $\sqrt{2}$ is an irrational number.

V. Short Answer Type Questions-II

Q. 14. If p is a prime number, then prove that $\sqrt{p}$ is an irrational.

Q. 15. Three bells toll at intervals of 9, 12, 15 minutes respectively. If they start tolling together, after what time will they next toll together?

VI. Long Answer Type Questions

Q. 16. Prove that $6 + \sqrt{2}$ is an irrational number.