

REAL NUMBER

1-10: Basics of Real Numbers

1. Which of the following is a rational number?

- a) $\sqrt{2}$
- b) 0.1010010001...
- c) $\frac{4}{5}$
- d) π

Answer: c) $\frac{4}{5}$

2. What is the decimal expansion of an irrational number?

- a) Terminating
- b) Non-terminating and repeating
- c) Non-terminating and non-repeating
- d) None of the above

Answer: c) Non-terminating and non-repeating

3. The HCF of two co-prime numbers is:

- a) 0
- b) 1
- c) The product of the numbers
- d) None of these

Answer: b) 1

4. The LCM of 6 and 8 is:

- a) 14
- b) 48
- c) 24
- d) 12

Answer: c) 24

5. If the HCF of 210 and 55 is 5, what is their LCM?

- a) 2310
- b) 105
- c) 420
- d) 550

Answer: a) 2310

6. Which of the following is NOT a real number?

- a) -3
- b) 0
- c) $\sqrt{-4}$
- d) π

Answer: c) $\sqrt{-4}$

7. The product of two consecutive positive integers is always:

- a) Even
- b) Odd
- c) Prime

d) None of these

Answer: a) Even

8. The number $7\sqrt{5}$ is:

a) Rational

b) Irrational

c) Integer

d) None of these

Answer: b) Irrational

9. What is the prime factorization of 84?

a) $2 \times 3 \times 14$

b) $2^2 \times 3 \times 7$

c) $2 \times 3 \times 7^2$

d) None of these

Answer: b) $2^2 \times 3 \times 7$

10. Every rational number is:

a) A whole number

b) A natural number

c) A real number

d) An irrational number

Answer: c) A real number

11-20: Fundamental Theorem of Arithmetic

11. According to the Fundamental Theorem of Arithmetic, every composite number can be expressed as:

a) A sum of primes

b) A product of primes

c) A power of 2

d) None of these

Answer: b) A product of primes

12. The prime factorization of 90 is:

a) $2 \times 3 \times 15$

b) $2 \times 3^2 \times 5$

c) $2^2 \times 3 \times 5$

d) None of these

Answer: b) $2 \times 3^2 \times 5$

13. Which of the following numbers is NOT a prime number?

a) 2

b) 7

c) 15

d) 19

Answer: c) 15

14. The LCM and HCF of two numbers are 120 and 6, respectively. If one number is 24, the other number is:

- a) 20
- b) 30
- c) 18
- d) 12

Answer: a) 20

15. Which number is divisible by 2, 3, and 5?

- a) 12
- b) 30
- c) 45
- d) 60

Answer: b) 30

16. The HCF of 65 and 117 is:

- a) 13
- b) 5
- c) 65
- d) 1

Answer: a) 13

17. The number of prime factors of 210 is:

- a) 2
- b) 3
- c) 4
- d) None of these

Answer: c) 4 (2, 3, 5, 7)

18. Which of the following is NOT divisible by 3?

- a) 123
- b) 456
- c) 789
- d) 140

Answer: d) 140

19. What is the smallest prime number?

- a) 0
- b) 1
- c) 2
- d) 3

Answer: c) 2

20. The HCF of two numbers is 15, and their product is 450. What is their LCM?

- a) 45
- b) 30
- c) 15
- d) 30

Answer: d) 30

21-30: Properties of Rational and Irrational Numbers

21. The square root of 144 is:

- a) Rational
- b) Irrational
- c) Prime
- d) None of these

Answer: a) Rational

22. The sum of two irrational numbers is always:

- a) Irrational
- b) Rational
- c) Integer
- d) Not always irrational

Answer: d) Not always irrational

23. If p and q are integers ($q \neq 0$), then p/q is:

- a) Always rational
- b) Always irrational
- c) Always an integer
- d) Always a prime number

Answer: a) Always rational

24. The value of $\sqrt{50}$ can be written as:

- a) $5\sqrt{2}$
- b) $10\sqrt{5}$
- c) $5\sqrt{5}$
- d) None of these

Answer: a) $5\sqrt{2}$

25. Which of the following is an example of an irrational number?

- a) $22/7$
- b) 3.142857...
- c) $\sqrt{3}$
- d) 0.5

Answer: c) $\sqrt{3}$

26. The product of a rational and an irrational number is:

- a) Rational
- b) Irrational
- c) Whole number
- d) None of these

Answer: b) Irrational

27. If a number has a terminating decimal expansion, it is:

- a) Rational
- b) Irrational
- c) Real
- d) None of these

Answer: a) Rational

28. The decimal expansion of $1/3$ is:

- a) Terminating

- b) Non-terminating and repeating
- c) Non-terminating and non-repeating
- d) None of these

Answer: b) Non-terminating and repeating

29. The cube root of 64 is:

- a) 4
- b) 3
- c) 5
- d) None of these

Answer: a) 4

30. If the HCF of two numbers is 1, they are called:

- a) Co-prime numbers
- b) Prime numbers
- c) Rational numbers
- d) None of these

Answer: a) Co-prime numbers

31-40: Advanced Real Numbers

31. What is the LCM of 9 and 12?

- a) 36
- b) 18
- c) 24
- d) 48

Answer: a) 36

32. If a/b is rational, then a and b are:

- a) Integers
- b) Whole numbers
- c) Natural numbers
- d) Irrational numbers

Answer: a) Integers

33. Which of the following is NOT a perfect square?

- a) 16
- b) 25
- c) 10
- d) 81

Answer: c) 10

34. $\sqrt{225}$ is equal to:

- a) 10
- b) 15
- c) 20
- d) 25

Answer: b) 15

35. Which of the following is divisible by 11?

a) 121

b) 133

c) 144

d) 155

Answer: a) 121