

200+ Questions for Programming Practice

Practicing is one of the best ways to learn to program. But, the very difficult part is finding as many questions to practice.

You probably have searched in so many places. And we must admit, it's tough.

Stop searching. Start Practicing.

You have reached the right place. 200+ questions for you.

What is there for me?

These curated questions are based on

- Numbers, Number Series
- Geometric Measurements
- Arrays
- Sets
- Vectors
- Matrices

How will these benefit me?

Solving these questions will help in

- Improving analytical skills
- Strengthening logical thinking
- Dividing a larger problem into smaller sub-problems
- Mastering Programming Concepts
- Familiarising programming language syntaxes

Are these specific to any programming language?

No. You can choose an Object-Oriented language. Or, a Functional Programming language. Or, a Scripting language. Or, a General Purpose language.

- C
- C++
- Java

- C#
- Go
- JavaScript
- Python
- PHP
- Ruby
- Rust
- Kotlin
- Swift

It's tough to list all the languages. Basically you can choose any programming language and, practice.

Finally

Look at each individual question. And practice as much as you can to learn effectively.

Happy Learning.

Numbers

We will cover questions on

1. Simple Numbers
2. Conversion of Units
3. Calculation
4. Special Numbers

Simple Numbers

1. Find a digit at a specific place in a number
2. Find the count of digits in a number
3. Find the largest digit
4. Find the 2nd largest digit
5. Find the kth largest digit
6. Find the smallest digit
7. Find the 2nd smallest digit
8. Find the kth smallest digit
9. Find the generic root (sum of all digits) of a number
10. Reverse the digits in a number
11. Rotate the digits in a number
12. Find if the number is a palindrome
13. Find the sum of 'n' numbers
14. Check if a number is a perfect square
15. Find a number in an AP sequence
16. Find a number in a GP sequence
17. Find a number in the Fibonacci sequence
18. Check number divisibility by 2, 3, 5, 9
19. Check if a number is primary or not
20. Given a number, print all primes smaller than it
21. Check if a number is circular prime or not
22. Find all prime factors of a number
23. Find the GCD of 2 numbers
24. Find the LCM of 2 numbers
25. Find the exponentiation of a number
26. Find the factorial of a number

Conversion of Units

We will cover conversion of units for

1. Weight
2. Length
3. Area
4. Volume
5. Time
6. Temperature
7. Number Base
8. Currency

Weight

Convert among these weight units

1. Grams to Kilograms
2. Grams to Pounds
3. Kilograms to Grams
4. Kilograms to Quintals
5. Kilograms to Tonnes
6. Kilograms to Pounds
7. Quintals to Kilograms
8. Tonnes to Kilograms
9. Pounds to Grams
10. Pounds to Kilograms
11. Pounds to Ounces
12. Ounces to Pounds

Length

Convert among these length units

1. Centimetres to Metres
2. Centimetres to Inches
3. Centimetres to Feet
4. Metres to Centimetres
5. Metres to Kilometres
6. Metres to Inches
7. Metres to Feet
8. Kilometres to Metres
9. Kilometres to Miles
10. Inches to Centimetres
11. Inches to Metres
12. Inches to Feet
13. Feet to Centimetres
14. Feet to Metres
15. Feet to Inches
16. Feet to Miles
17. Miles to Kilometres
18. Miles to Feet

Area

Convert among these area units

1. Square Metres to Square Centimetres
2. Square Centimetres to Square Metres
3. Square Metres to Square Kilometres
4. Square Kilometres to Square Metres
5. Square Inches to Square Feet
6. Square Feet to Square Inches
7. Square Feet to Square Yards
8. Square Yards to Square Feet
9. Square Yards to Square Metres
10. Square Metres to Square Yards
11. Square Miles to Square Yards
12. Square Yards to Square Miles
13. Square Miles to Square Feet
14. Square Feet to Square Miles
15. Square Miles to Square Kilometres
16. Square Kilometres to Square Miles
17. Hectares to Square Metres
18. Square Metres to Hectares
19. Hectares to Square Kilometres
20. Square Kilometres to Hectares
21. Acres to Square Yards
22. Square Yards to Acres
23. Acres to Square Feet
24. Square Feet to Acres

Volume

Convert among these volume units

1. Cubic Metres to Litres
2. Litres to Cubic Metres
3. Gallons to Cubic Inches
4. Cubic Inches to Gallons
5. Gallons to Pints
6. Pints to Gallons
7. Gallons to Litres
8. Litres to Gallons
9. Barrels to Gallons
10. Gallons to Barrels
11. Barrels to Litres
12. Litres to Barrels
13. Cubic Feet to Cubic Inches
14. Cubic Inches to Cubic Feet

Time

Convert among these time units

1. Seconds to Minutes
2. Minutes to Seconds
3. Seconds to Hours
4. Hours to Seconds
5. Seconds to Days
6. Days to Seconds
7. Minutes to Hours
8. Hours to Minutes
9. Minutes to Days
10. Days to Minutes
11. Hours to Days
12. Days to Hours
13. Days to Weeks
14. Weeks to Days
15. Days to Years (approx.)
16. Years to Days (approx.)

Temperature

Convert among these temperature units

1. Fahrenheit to Celcius
2. Fahrenheit to Kelvin
3. Kelvin to Celcius
4. Kelvin to Fahrenheit
5. Celcius to Fahrenheit
6. Celcius to Kelvin
7. Celcius to Rankine
8. Celcius to Newton
9. Celcius to Rømer
10. Celcius to Réaumur
11. Celcius to Delisle
12. Rankine to Celcius
13. Newton to Celcius
14. Rømer to Celcius
15. Réaumur to Celcius
16. Delisle to Celcius

Number Base

Convert numbers from

1. Decimal to Binary
2. Decimal to Octal
3. Decimal to Hexadecimal
4. Binary to Decimal
5. Binary to Octal
6. Binary to Hexadecimal
7. Octal to Binary
8. Octal to Decimal
9. Octal to Hexadecimal
10. Hexadecimal to Binary
11. Hexadecimal to Octal
12. Hexadecimal to Decimal
13. One Base (X) to Another Base (Y)

Currency

Convert among these currencies

1. USD (\$)
2. EUR (€)
3. GBP (£)
4. JPY (¥)
5. CHF (CHF)
6. CAD (C\$)
7. AUD (A\$)
8. CNY (¥)
9. HKD (HK\$)
10. KRW (₩)
11. SGD (S\$)
12. NZD (NZ\$)
13. INR (₹)
14. ZAR (R)

Calculation

Calculate

1. Loan EMI
2. Fixed Deposit Returns
3. Interest
4. BMI
5. Item Price (considering tax, discount, and shipping)
6. Tip

Special Numbers

Check if a given number is a

1. Strong Number
2. Perfect Number
3. Armstrong Number
4. Harshad Number
5. Kaprekar Number
6. Lychrel Number
7. Narcissistic Decimal Number
8. Lucas Number
9. Catalan Number
10. Duck Number
11. Ugly Number
12. Abundant Number
13. Deficient Number
14. Automorphic Number
15. Magic Number
16. Friendly Pair Numbers
17. Neon Number
18. Spy Number
19. Happy Number
20. Sunny Number
21. Disarium Number
22. Pronic Number
23. Trimorphic Number
24. Evil Number
25. Amicable Pairs

Geometric Measurements

1. Find the distance between 2 points
2. Given 2 sides of a right-angle triangle, find the 3rd
3. Find 3rd angle of a triangle when 2 are given
4. Area of a triangle when 3 sides are given
5. Area of a right angle triangle
6. The perimeter of a Square
7. Area of a Square
8. The perimeter of a Rectangle
9. Area of a Rectangle
10. Circumference of a Circle
11. Area of a Circle
12. Circumference of a Semi-Circle
13. Area of a Semi-Circle
14. Area of a Ring
15. Circumference of an Ellipse
16. Area of an Ellipse
17. Surface Area of a Sphere
18. The volume of a Sphere
19. The surface area of a Hemisphere
20. The volume of a Hemisphere
21. The surface area of a Cube
22. The volume of a Cube
23. The surface area of a Cylinder
24. The volume of a Cylinder

Arrays

Questions will be covered on Arrays

1. To find the smallest and, the largest element
2. Count of elements
3. Statistics of an Array
4. Sorting of an Array
5. Duplicates in an Array
6. Operations on a sorted Array
7. Various other operations

Smallest and, Largest

In a given array of numbers, find the

1. Smallest element
2. 2nd Smallest element
3. 3rd Smallest element
4. kth Smallest element
5. Largest element
6. 2nd Largest element
7. 3rd Largest element
8. kth Largest element

Count of Elements

In a given array of integers, find the number of

1. Odd Numbers
2. Even Numbers
3. Prime Numbers
4. Perfect Squares
5. Perfect Cubes

Statistics

In a given array of numbers, find the

1. Sum of all elements
2. Mean Value
3. Median Value
4. Mode Value

Sorting

1. Bubble Sort
2. Selection Sort
3. Insertion Sort
4. Merge Sort
5. Quick Sort
6. Counting Sort
7. Radix Sort
8. Bucket Sort
9. Heap Sort
10. Shell Sort

Duplicates

In a given **array of numbers**,

1. Remove all instances of the given value from the array in-place
2. Assume all numbers appear twice except one. Find that number.
3. Assume all numbers in a series are there except one. Find that missing number.
4. Assume all numbers in a series appears once except one which appears twice. Find that duplicate number.
5. Count the frequency of an element
6. Find duplicates.
7. Remove duplicates

Sorted Array

In a **sorted array**,

1. Find an element
2. Find the position at which the next element will be inserted

Given a **sorted array of series of integers**,

1. Find the missing number
2. Find duplicates
3. Remove duplicates

Solve these,

1. Merge 2 sorted arrays
2. Find the median of 2 sorted arrays
3. Convert a sorted array to a BST (Binary Search Tree)

Various Operations

Divide

1. Divide an array into 2 equal parts
2. Divide an array into k equal parts
3. Divide an array in k parts where each sub-array contains elements at k-distance

Pick/Drop

1. Return a new array by picking each kth element
2. Return a new array by dropping each kth element

Merge

1. Merge 2 or, more arrays
2. Merge 2 sorted arrays to form another sorted array

Reverse

1. Reverse an array
2. Divide an array into k parts and reverse each
3. Create a mirror reflection of an array (reverse + merge)

Rotate/Shuffle

1. Rotate an array clockwise/anti-clockwise for k times
2. Shuffle an array

Map/Group

1. Return a new array by adding/multiplying each element with some value.

2. Based on some classifying rules, group elements of an array and form separate arrays.

Sets

1. Find the Union of 2 sets
2. Find the Intersection of 2 sets
3. Find the Difference between 2 sets
4. Find the Symmetric Difference between 2 sets
5. Find if a set is a subset/superset of another set
6. Find if 2 sets are disjoint

Vectors

1. Find Scalar Multiplication of a vector
2. Find addition/subtraction of vectors
3. Find the magnitude of a vector
4. Find a unit vector along a given vector
5. Find the dot product of 2 vectors
6. Find cross product of 2 vectors
7. Check if 2 vectors are orthogonal

Matrices

1. Find the determinant of a matrix
2. Find Scalar Multiplication of a matrix
3. Find addition/subtraction of matrices
4. Find the transpose of a matrix
5. Find multiplication of 2 matrices
6. Find if 2 matrices are orthogonal
7. Find inverse of a 2×2 and 3×3 matrix