

Technical Interview

1. Given an array of integers, return the indices of the two numbers that add up to a target value.

Example: Given numbers = [2, 7, 11, 15], target = 9, return [0, 1] because numbers[0] + numbers[1] = 2 + 7 = 9.

Assume that each input would have exactly one solution, and you cannot use the same element twice.

Follow-up: Can you do this in less than O(n²) time complexity?

2. Implement a function to check if a string is a palindrome, considering only alphanumeric characters and ignoring cases.

Example: "A man, a plan, a canal, Panama" is a palindrome. "race a car" is not.

Follow-up: Can you do this without extra space?

3. Given a sorted array of integers, find the starting and ending position of a given target value.

Example: Input: [5, 7, 7, 8, 8, 10], target = 8, Output: [3, 4].

Follow-up: Can you do this in O(log n) time?

4. Implement a function to rotate an image by 90 degrees clockwise.

Example: Input: [[1, 2, 3], [4, 5, 6], [7, 8, 9]], Output: [[7, 4, 1], [8, 5, 2], [9, 6, 3]].

Follow-up: Can you do this in-place?

5. Implement a function to find the maximum sum of a subarray.

Example: Input: [-2, 1, -3, 4, -1, 2, -1, 4, -4], Output: 6.

Follow-up: Can you do this in O(n) time?

6. Implement a function to find the length of the longest substring without repeating characters.

Example: Input: "abcabcbb", Output: 3.

Follow-up: Can you do this in O(n) time?

7. Implement a function to find the length of the longest common subsequence between two strings.

Example: Input: "abcde", "ace", Output: 3.

Follow-up: Can you do this in O(m*n) time?

QUESTION 1

1. The following information is available for the year ended 31/12/2018:

- Sales: 100,000
- Cost of sales: 60,000
- Selling expenses: 10,000
- Administrative expenses: 15,000
- Depreciation: 5,000
- Interest on bank overdraft: 2,000
- Dividend received: 1,000
- Profit on sale of plant: 3,000

Required: Calculate the gross profit.

- A. 40,000
- B. 43,000
- C. 45,000
- D. 48,000

QUESTION 2

2. The following information is available for the year ended 31/12/2018:

- Sales: 100,000
- Cost of sales: 60,000
- Selling expenses: 10,000
- Administrative expenses: 15,000
- Depreciation: 5,000
- Interest on bank overdraft: 2,000
- Dividend received: 1,000
- Profit on sale of plant: 3,000

Required: Calculate the net profit.

QUESTION 3

3. The following information is available for the year ended 31/12/2018:



QUESTION 2

Year	Number of people	Number of people	Number of people	Number of people	Number of people
0	1000	1000	1000	1000	1000
1	1500	1500	1500	1500	1500
2	2000	2000	2000	2000	2000
3	2500	2500	2500	2500	2500
4	3000	3000	3000	3000	3000
5	3500	3500	3500	3500	3500
6	4000	4000	4000	4000	4000
7	4500	4500	4500	4500	4500
8	5000	5000	5000	5000	5000
9	5500	5500	5500	5500	5500
10	6000	6000	6000	6000	6000
11	6500	6500	6500	6500	6500
12	7000	7000	7000	7000	7000

QUESTION 3

QUESTION 4



Item	Quantity	Unit	Price	Total
...
...
...
...

Item	Quantity	Unit	Price	Total
...
...
...
...



Notes:

1. All dimensions are in millimeters unless otherwise specified.

2. The drawing is a technical drawing and should be read in accordance with the relevant standards.

3. The drawing is a technical drawing and should be read in accordance with the relevant standards.

4. The drawing is a technical drawing and should be read in accordance with the relevant standards.

5. The drawing is a technical drawing and should be read in accordance with the relevant standards.

6. The drawing is a technical drawing and should be read in accordance with the relevant standards.

7. The drawing is a technical drawing and should be read in accordance with the relevant standards.

8. The drawing is a technical drawing and should be read in accordance with the relevant standards.

9. The drawing is a technical drawing and should be read in accordance with the relevant standards.

10. The drawing is a technical drawing and should be read in accordance with the relevant standards.

11. The drawing is a technical drawing and should be read in accordance with the relevant standards.

12. The drawing is a technical drawing and should be read in accordance with the relevant standards.

1. Introduction

The purpose of this document is to provide a comprehensive overview of the project's objectives, scope, and key findings. This document is intended for the project team and stakeholders.

2. Project Objectives

The primary objectives of this project are to:

2.1. Objectives

The project aims to achieve the following objectives:

2.2. Objectives

The project aims to achieve the following objectives:

2.3. Objectives

The project aims to achieve the following objectives:

2.4. Objectives

The project aims to achieve the following objectives:

2.5. Objectives

The project aims to achieve the following objectives:

2.6. Objectives

The project aims to achieve the following objectives:

3. Methodology

The methodology used in this project is based on the following principles:

4. Results and Discussion

The results of the project are as follows:

4.1. Results

The results of the project are as follows:

The results of the project are as follows:

4.2. Results

4.3. Results

4.4. Results

4.5. Results

4.6. Results

4.7. Results

4.8. Results

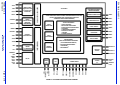
4.9. Results

4.10. Results

5. Conclusion

The project has successfully achieved its objectives and is now ready for implementation.

The project has successfully achieved its objectives and is now ready for implementation.



QUESTION
The following table shows the number of people who attended a concert in each of the five years from 2018 to 2022.

Year	Number of people
2018	1200
2019	1500
2020	1800
2021	2100
2022	2400

Calculate the mean number of people who attended the concert in each of the five years.

ANSWER

Mean = $\frac{1200 + 1500 + 1800 + 2100 + 2400}{5}$

Mean = $\frac{9000}{5}$

Mean = 1800

The mean number of people who attended the concert in each of the five years is 1800.

QUESTION
The following table shows the number of people who attended a concert in each of the five years from 2018 to 2022.

Year	Number of people
2018	1200
2019	1500
2020	1800
2021	2100
2022	2400

Calculate the median number of people who attended the concert in each of the five years.

ANSWER

Median = 1800

The median number of people who attended the concert in each of the five years is 1800.

QUESTION
The following table shows the number of people who attended a concert in each of the five years from 2018 to 2022.

Year	Number of people
2018	1200
2019	1500
2020	1800
2021	2100
2022	2400

Calculate the mode number of people who attended the concert in each of the five years.

ANSWER

Mode = 2400

The mode number of people who attended the concert in each of the five years is 2400.

QUESTION
The following table shows the number of people who attended a concert in each of the five years from 2018 to 2022.

Year	Number of people
2018	1200
2019	1500
2020	1800
2021	2100
2022	2400

Calculate the range number of people who attended the concert in each of the five years.

ANSWER

Range = 2400 - 1200

Range = 1200

The range number of people who attended the concert in each of the five years is 1200.

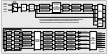


Figure 1: Schematic diagram of the process flow.

Introduction to Algebra

This chapter introduces the basic concepts of algebra, including variables, expressions, and equations. It covers the fundamental rules of algebra and how to solve simple linear equations.

Variables

Variables are symbols that represent unknown values. They are used to write mathematical expressions and equations.

Algebraic Expressions

Algebraic expressions are combinations of numbers, variables, and arithmetic operations. They represent a value that can change.

Evaluating Expressions

Evaluating an expression means finding its value for a given set of values for the variables.

For example, if $x = 2$ and $y = 3$, the expression $x + y$ evaluates to $2 + 3 = 5$.

Linear Equations

Linear equations are equations where the highest power of the variable is 1. They can be written in the form $ax + b = c$.

For example, $2x + 3 = 7$ is a linear equation. Solving for x gives $x = 2$.

Solving Linear Equations

To solve a linear equation, you use the properties of equality to isolate the variable on one side of the equation.

For example, to solve $2x + 3 = 7$, you subtract 3 from both sides to get $2x = 4$, and then divide both sides by 2 to get $x = 2$.

Linear equations are used to model many real-world situations, such as calculating the cost of items or the distance traveled.

Graphing Linear Equations

A linear equation can be graphed on a coordinate plane. The graph is a straight line.

The slope of the line represents the rate of change, and the y-intercept represents the initial value.

For example, the equation $y = 2x + 3$ has a slope of 2 and a y-intercept of 3.

Graphing linear equations helps visualize the relationship between the variables and find solutions to the equation.

Linear equations are also used to model the relationship between two variables in many real-world situations.

For example, a linear equation can be used to model the relationship between the number of hours worked and the amount of money earned.

Graphing linear equations is a useful tool for understanding the relationship between variables and solving problems.

Systems of Equations

A system of equations consists of two or more linear equations with the same variables.

The solution to a system of equations is the set of values that satisfy all the equations in the system.

For example, the system of equations $y = 2x + 3$ and $y = -x + 5$ has a solution at $x = 2$ and $y = 7$.

Systems of equations are used to model many real-world situations, such as finding the intersection of two lines.

Graphing systems of equations helps visualize the relationship between the variables and find the solution to the system.

Systems of equations are also used to solve problems involving multiple variables and constraints.

For example, a system of equations can be used to find the dimensions of a rectangle given its perimeter and area.

Graphing systems of equations is a useful tool for understanding the relationship between variables and solving problems.

Word Problems

Word problems are problems that are presented in a story format. They require you to translate the words into a mathematical equation or system of equations.

For example, a word problem might ask you to find the number of apples and oranges bought given the total cost and the number of items.

Translating word problems into mathematical equations is a key skill in algebra.

Graphing word problems helps visualize the relationship between the variables and find the solution to the problem.

Word problems are used to model many real-world situations and are an important part of algebra.

Applications

Algebra is used in many real-world applications, such as science, engineering, and business.

For example, algebra is used to calculate the trajectory of a projectile or the profit of a business.

Graphing applications helps visualize the relationship between the variables and find the solution to the problem.

Algebra is a powerful tool for understanding the world around us and solving problems.

Graphing applications is a useful tool for understanding the relationship between variables and solving problems.

Algebra is used to model many real-world situations and is an important part of mathematics.

Graphing applications is a useful tool for understanding the relationship between variables and solving problems.

Conclusion

Algebra is a branch of mathematics that deals with symbols and the rules for manipulating these symbols.

It is used to model many real-world situations and is an important part of mathematics.

Graphing applications is a useful tool for understanding the relationship between variables and solving problems.

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Algebra is a powerful tool for understanding the world around us and solving problems.

Question 1

Which of the following is NOT a characteristic of a good research question?

It is clear and specific.

It is broad and general.

It is measurable and testable.

It is relevant and significant.

Correct Answer:

- It is broad and general.
- It is measurable and testable.
- It is relevant and significant.

Question 2

Which of the following is NOT a characteristic of a good research question?

It is clear and specific.	It is broad and general.
It is measurable and testable.	It is relevant and significant.
It is relevant and significant.	It is measurable and testable.
It is broad and general.	It is clear and specific.

Question 3

Which of the following is NOT a characteristic of a good research question?

It is clear and specific.

It is broad and general.

It is measurable and testable.

It is relevant and significant.

Correct Answer:

- It is broad and general.
- It is measurable and testable.
- It is relevant and significant.

It is clear and specific.	It is broad and general.
It is measurable and testable.	It is relevant and significant.
It is relevant and significant.	It is measurable and testable.
It is broad and general.	It is clear and specific.

Question 4

Which of the following is NOT a characteristic of a good research question?

It is clear and specific.

It is broad and general.

It is measurable and testable.

It is relevant and significant.

Question 5

Which of the following is NOT a characteristic of a good research question?

It is clear and specific.

It is broad and general.

It is measurable and testable.

It is relevant and significant.

Question 6

Which of the following is NOT a characteristic of a good research question?

It is clear and specific.

It is broad and general.

It is measurable and testable.

It is relevant and significant.

Question 7

Which of the following is NOT a characteristic of a good research question?

It is clear and specific.

It is broad and general.

It is measurable and testable.

It is relevant and significant.

Item	Description	Quantity	Unit	Material Code	Material Name	Material Description	Material Specification	Material Grade	Material Type
1	Steel Plate	10	Sq Ft	101	Steel Plate	Carbon Steel	A36	36	Structural Steel
2	Steel Plate	20	Sq Ft	102	Steel Plate	Carbon Steel	A36	36	Structural Steel
3	Steel Plate	30	Sq Ft	103	Steel Plate	Carbon Steel	A36	36	Structural Steel
4	Steel Plate	40	Sq Ft	104	Steel Plate	Carbon Steel	A36	36	Structural Steel
5	Steel Plate	50	Sq Ft	105	Steel Plate	Carbon Steel	A36	36	Structural Steel
6	Steel Plate	60	Sq Ft	106	Steel Plate	Carbon Steel	A36	36	Structural Steel
7	Steel Plate	70	Sq Ft	107	Steel Plate	Carbon Steel	A36	36	Structural Steel
8	Steel Plate	80	Sq Ft	108	Steel Plate	Carbon Steel	A36	36	Structural Steel
9	Steel Plate	90	Sq Ft	109	Steel Plate	Carbon Steel	A36	36	Structural Steel
10	Steel Plate	100	Sq Ft	110	Steel Plate	Carbon Steel	A36	36	Structural Steel

Section 1: Introduction

Section 2: Objectives

1. To understand the basic principles of the subject.

Section 3: Methodology

The methodology used in this study is a combination of theoretical and practical approaches. Theoretical aspects are covered through literature review and conceptual analysis, while practical aspects are addressed through case studies and experiments.

Multiple Choice Question

100 points

Time limit: 10 minutes

Attempts: 1



- A
- B
- C
- D
- E
- F
- G
- H
- I
- J
- K
- L
- M
- N
- O
- P
- Q
- R
- S
- T
- U
- V
- W
- X
- Y
- Z



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.