



You are taking "Recruitment Test" as a timed test. The timer on the right shows the time remaining in the test. To receive credit for problems, you must select "Submit" for each problem before you select "End Test".

[End Test](#)

1:13:10

Test

Problem 1

A 8 sided die is rolled 3 times. What is the probability of getting all outcomes as unique?

 0.73 0.94 0.48 0.66 0.41[Submit](#)

You have used 0 of 1 attempt

PROBLEM 2

6 individual bells ring at intervals of 1, 2, 3, 6, 7, 8 seconds each respectively. They ring completely independent of each other. At some point, all the bells will ring simultaneously. Find out how many times the bells will ring simultaneously over a span of 3192 minutes.

 1140.0 19.0 840.0 They will never ring together 1143.0 1773.0[Submit](#)

You have used 0 of 1 attempt

Problem 3

M = [33, 21, 1, 21, 'N']

What is the value of N if the mode, mean and median of the list M are equal to each other? Express your answer to the nearest whole number.

Note:

- The mode of a set of data values is the value that appears most often.
- The mean is the average of the numbers: a calculated "central" value of a set of numbers.
- Median is the middle number in a sorted list of numbers.

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You have used 0 of 1 attempt

Problem 4

Braden and Fred are two independent journalists. Braden is usually correct in 63% of his reports and Fred in 87% of his reports. In what percentage of cases are they likely to contradict each other, talking about the same incident where at least one of them is correct.

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You have used 0 of 1 attempt

Problem 5

```

INT mySecretKey(INT num)
{
    print<<num
    IF num < 14
    [
        mySecretKey( mySecretKey( mySecretKey( ++num ) ) )
    ]
    return (num)
}

```

The above psuedocode can generate a secret key for you. What would be the output secret key of the function mySecretKey(12)?

- The secret key is 1213141414141414
- The secret key is 121314141414
- The secret key is 13141414141414
- The secret key is 12131414141414

You have used 1 of 1 attempt

 Answer submitted.

Problem 6

Let's assume we have a singly linked lists: M->Y->H->R->T->F->N->L->O. What would be the output and resultant list after running **func(list.head, 7)**. NOTE: This function is written in some hypothetical language and you can assume it's syntactically correct.

```

function List func(head, i) {
    if (i == 0) {
        temp = head.next;
        return temp;
    }

    head.next = func(head.next, i-1)
    print head.data
}

```

- Output: NFTRHYM List: O->N->F->R->H->Y->M
- Output: NFTRHYM List: M->Y->H->R->T->F->N->L->O
- Output: MYHRTFN List: M->Y->H->R->T->F->N->O
- Output: NFTRHYM List: M->Y->H->R->T->F->N->O

You have used 0 of 1 attempt

Problem 7

```

function void imaginaryString()
{
    arr_1 = ['J', 'H', 'P', 'V', 'N', 'K', 'S', 'M', 'X', 'E', 'O']
    arr_2 = ['H', 'Q', 'T', 'D', 'O', 'F', 'K', 'I', 'E', 'B', 'P']

    arr_3 = get_common_values (arr_1, arr_2)
    arr_3 = sort_ascending (arr_3)

    a = [4, 0, 1, 3, 2]
    i = 0

    while (i < length(arr_3))
    {
        print arr_3[ a[i] ]
        i = i + 1
    }
}

```

What will the **imaginaryString()** function print?

- PEHOK
- PEOKH

- HQTDOF
 - JHPVNKS
 - Raise Index Error
 - 40132

Submit You have used 0 of 1 attempt

Problem 8

An array is used here to represent a Hash Table. Array index starts from **0** and ends at **size_of_array - 1**. Which slot would the number 32 hash to, in the following Hash Table?

```
size_of_table = 11
```

The hash function is :

`hash(number) : number % size_of_table`

For collision resolution use the following rehash function:

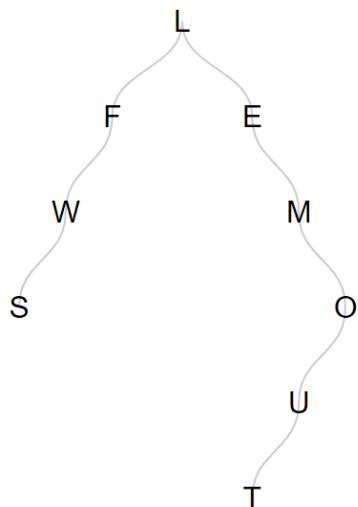
new_hash_value : *rehash(old_hash_value)*
rehash(position) : $(position + 1) \% \text{size_of_table}$

Enter slot number

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Problem 9

What is the in-order traversal of the following binary tree?



Answer (e.g. ARBISOFT)

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Problem 10

Consider a circular queue and a stack of size 5 and 7 respectively. Circular queue also performs following operations:

1. After Enqueue(x):

- Push(x)
- Push($x \bmod 3$)

2. After $x = \text{Dequeue}()$:

- $y = \text{Pop}()$
- Push($x + y$)

What will be the representation of stack after performing following operations:

enqueue(5)	enqueue(9)	dequeue()	enqueue(14)	enqueue(15)	enqueue(17)	dequeue()	dequeue()	enqueue(16)
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None of the above

[5, 5, 10, 6, 17, 5, 41]

[5, 7, 11, 7, 19, 7, 43]

[5, 9, 14, 15, 17, 16]

[5, 2, 9, 5, 14, 2, 38]

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You have used 0 of 1 attempt

Problem 11

A **min-heap** is a heap where the value of each internal node is smaller than or equal to the values of its children. Consider a binary **min-heap** implemented using an array as follows: The root is stored in the first location, **a[0]**, nodes in the next level, from left to right, is stored from **a[1]** to **a[2]**. The nodes from the second level of the tree from left to right are stored from **a[3]** location onward... Which one of the following array represents a binary min-heap?

There is one correct option

12, 51, 36, 135, 155, 126, 60, 112, 56, 192, 69, 158, 198, 165, 171

12, 51, 36, 135, 69, 56, 60, 158, 192, 126, 155, 112, 198, 165, 171

12, 51, 36, 135, 69, 192, 198, 56, 155, 112, 158, 60, 126, 165, 171

12, 51, 36, 135, 69, 192, 158, 60, 56, 126, 155, 112, 198, 165, 171

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You have used 0 of 1 attempt

Problem 12

```
function foo(start) {
    if (start == NULL)
        return

    print(start.value)

    if (start.next != NULL)
        foo(start.next.next);

    print(start.value);
}
```

What will be the output of the the following function if **start** is pointing to **first node** of following linked list?
[45, 63, 44, 32, 42, 9]

45, 44, 44, 9, 44, 45

45, 44, 42, 42, 44, 45

45, 32, 42, 44, 9

45, 42, 42, 63, 44, 45

You have used 0 of 1 attempt

Problem 13

Find out the Customers (CustomerName, PostalCode) who have placed less than 61 orders.

Customers

CustomerID
CustomerName
Address
City
PostalCode

Orders

OrderID
CustomerID
ShipperID
OrderDate

There is one correct option

- SELECT Customers.CustomerName, Customers.PostalCode, COUNT(Orders.OrderID) AS NumberOfOrders FROM Orders INNER JOIN Customers ON Orders.CustomerID = Customers.CustomerID GROUP BY CustomerName ORDER BY NumberOfOrders asc HAVING COUNT(Orders.OrderID) > 61;
- SELECT Customers.CustomerName, Customers.PostalCode, COUNT(Orders.OrderID) AS NumberOfOrders FROM Orders WHERE Orders.CustomerID = Customers.CustomerID GROUP BY CustomerName HAVING NumberOfOrders < 61 ORDER BY NumberOfOrders asc;
- SELECT Customers.CustomerName, Customers.PostalCode, COUNT(Orders.OrderID) AS NumberOfOrders FROM Orders INNER JOIN Customers ON Orders.CustomerID = Customers.CustomerID GROUP BY CustomerName HAVING COUNT(Orders.OrderID) < 61 ORDER BY NumberOfOrders asc;
- SELECT Customers.CustomerName, Customers.PostalCode, Orders.OrderID AS NumberOfOrders FROM Orders, Customers WHERE Orders.CustomerID = Customers.CustomerID GROUP BY CustomerName ORDER BY NumberOfOrders asc HAVING COUNT(Orders.OrderID) < 61;
- SELECT Customers.CustomerName, Customers.PostalCode, COUNT(Orders.OrderID) AS NumberOfOrders FROM Orders INNER JOIN Customers ON Orders.CustomerID = Customers.CustomerID GROUP BY CustomerName WHERE COUNT(Orders.OrderID) < 61 ORDER BY NumberOfOrders asc;

You have used 0 of 1 attempt

Problem 14

Table: A

id	name	age
29	Zara	48
48	Abdullah	41
93	Fatima	42
92	Faran	52
115	Shahryar	35
96	Danish	26

Table: B

id	name	age
19	Abdullah	40
70	Fatima	59
102	Zia	43
100	Mahnor	44
105	Ayesha	45

How many rows does the result of the following SQL query contains?

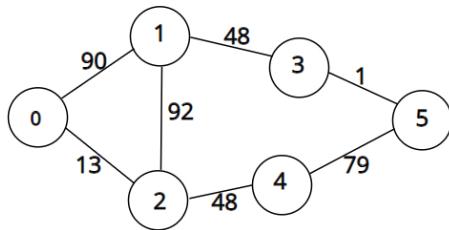
```
SELECT A.id
FROM A
WHERE A.age < ALL (SELECT B.age FROM B WHERE B.name in ['Faran', 'Abdullah', 'Shahryar', 'Gohar'])
```

 2 1 4 3

You have used 0 of 1 attempt

Problem 15

If we represent the following undirected graph in adjacency matrix **M** what would be the sum of **3rd column** of **M**.
NOTE: Counting starts from 0 as (0th, 1st, 2nd, 3rd, 4th, 5th ...)



153

49

127

103

You have used 0 of 1 attempt

Problem 16

Suppose that we have numbers between 1 and 100 in a binary search tree and we want to search for the number 34. Which of the following sequences could not be the sequence of nodes examined ?

[58, 88, 63, 13, 26, 10, 19, 91, 34]

[71, 17, 68, 64, 53, 45, 34]

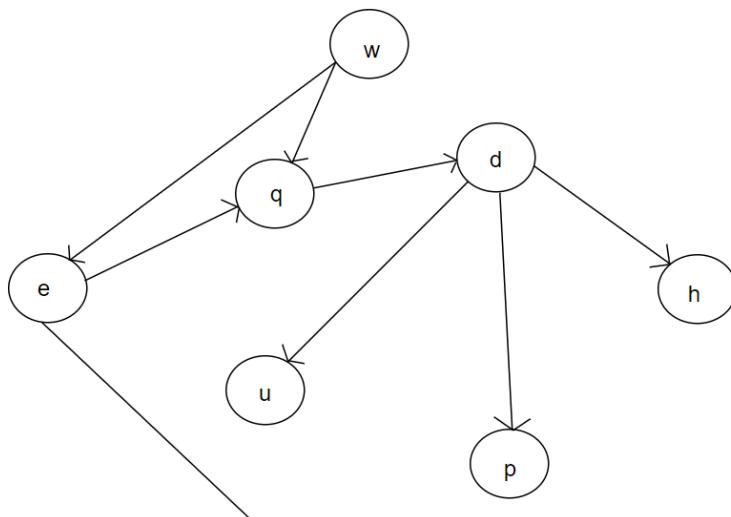
[47, 44, 43, 12, 35, 28, 30, 34]

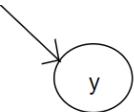
[55, 12, 26, 53, 31, 46, 41, 37, 32, 34]

You have used 0 of 1 attempt

Problem 17

What is the result of running a **depth-first** traversal on the following directed graph? The start vertex is **d**.





Answer without any separators, e.g. ab or bca

Submit You have used 0 of 1 attempt

Problem 18

For the given array, $\text{arr} = [9, 5, 16, 13, 25, 24, 22, 11, 17, 14]$. What will be the state of array after **2 iteration** of **bubble sort (ascending order)**

- [9, 16, 22, 11, 24, 25, 13, 5, 17, 14]
- [14, 25, 11, 5, 24, 13, 17, 16, 9, 22]
- [5, 9, 13, 16, 22, 11, 17, 14, 24, 25]
- [25, 24, 14, 17, 11, 22, 16, 13, 9, 5]

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Problem 19

A CPU scheduler executes processes in time quantum of 100ms and then calculates the next process to execute after each quantum. 3 processes are fed into our CPU's process scheduler with the following attributes

Process A
Arrival Time: 0
Execution Time Needed: 200msec

Process B
Arrival Time: 900msec
Execution Time Needed: 1900msec

Process C
Arrival Time: 200msec
Execution Time Needed: 300msec

There are four main algorithms which our CPU uses to schedule processes:

FCFR: First Come First Serve
SJF: Shortest Job First
SRTR: Shortest Remaining Time First
RR: Round Robin

If the scheduler is using the FCFR algorithm to schedule processes, which processes would have been completed after 2300 ms?

Answer as a comma separated list e.g. A,B or B,C,A

Submit You have used 0 of 1 attempt

Problem 20

The yearly profits at a software house are as follows for two consecutive years:

- The profits decreased by 9% during year 1 and
 - increased by 6% during year 2.
- What was the cumulative percent change for the two years?

- 3.73 % decrease
- 3.54 % decrease
- 3.73 % increase
- 3.54 % increase

Submit You have used 0 of 1 attempt

Problem 21

If

A = {2, 3, 6, 9, {8, 4}, {5}}
B = {2, 4, {4}, 6, 7}
C = {1, 2, 3, 4, 5, 6, {5}}
D = {8, 10, 3, {4}, 6}

Then the set C \cap ((B - A) \cup A) is:

- {{5}, 2, 3, 4, 6}
- {2, 3, 4, 5, 6, 8, 9, 10, {4}}
- {}
- {{5}, 2, 3, 4}

Submit

You have used 0 of 1 attempt

Problem 22

```
function foo(int n)
{
    if n==1
        return
    else if n > 10
        return foo(n - 4)
    else if n > 5
        return foo(n - 2)
    else
        return foo(n - 1)
}
```

In above pseudocode evaluate the number of calls made to function foo(), if n=22

- 9
- 10
- 11
- 8

Submit

You have used 0 of 1 attempt

Problem 23

+ * 5 4 * + 10 12 - 10 9

Evaluate the above stream of input in prefix notation.

- 32
- 62
- 52
- 42

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You have used 0 of 1 attempt

Problem 24

Use the database table EMPLOYEES given below to execute the query:

ID	Name	Department	Salary
1	Steven	HR	9781.89
2	Tim	HR	3766.78
3	John	Business	14266.86
4	Meg	HR	9212.37
5	Nancy	Business	13120.48
6	Neena	HR	7514.66
7	Lexie	Business	8676.71
8	Bruce	Business	10055.25
9	Valli	HR	5794.66

```
SELECT count(*) as SelectedEmployees
FROM EMPLOYEES
WHERE Salary > (
    SELECT AVG ( Salary )
    FROM EMPLOYEES
    WHERE Department = 'Business'
);
```

SelectedEmployees

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Problem 25

A, B and C enter into a partnership with an investment in which A's contribution is \$4000. if out of a total profit of \$1000, A and B get \$400 and \$100 respectively, then what is C's capital?

5050.0

4800.0

5350.0

5000.0

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Problem 26

Here is a pseudo code:

```
function foo(limit):
    result = 0
    for k = 0 to limit do:
        if ( ( k % 3 ) == 1 )
            result = result + k
        otherwise
            result = result + 4
    return result
```

What will be the return value of foo(7)?

36

32

27

37

Submit You have used 0 of 1 attempt

Problem 27

There are 4 Processes A, B, C and D. Their Arrival Times are 0, 2, 6, 11 and Execution Times are 4, 5, 11 and 6 respectively. What will be the Average Waiting Time if non-preemptive, First Come First Serve (FCFS) scheduling algorithm is used?

3.5 6.5 4.2 3.0

You have used 0 of 1 attempt

Problem 28

Machine A can produce **2000** products in **4** hours. Machine B can produce **1720** products in **8** hours. Working together, how many minutes will it take the machines to produce **2270** products?

Give closest answer

 190 200 202 328

You have used 0 of 1 attempt

Problem 29

Suppose there are **218** players. **54** of them only play football and **29** of them play both football and cricket. If **33** players neither play football nor cricket then how many players only play cricket?

 106 131 135 102

You have used 0 of 1 attempt

Problem 30

What is the value of **a**, **b**, and **c** after the following program is executed?

```
function sum(n) {
    if(n != 0)
        return n + sum(n - 1);
    return 0;
}

function main() {
    input = 2;
    a = sum(input);
    b = sum(input++);
    c = sum(++input);
}
```

 a=3, b=7, c=6 a=6, b=7, c=3 a=6, b=3, c=3 a=3, b=3, c=6

Submit

You have used 0 of 1 attempt

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