

Question — ①

 $S \rightarrow A B C$ $(S_{ok}) : A_{count} = B_{count} = C_{count} .$ $A_1 \rightarrow A_2 a$ $A_1 count = A_2 count + 1$ $A \rightarrow a$ $A_{count} = 1$ $B_1 \rightarrow B_2 b$ $B_1 count = B_2 count + 1$ $B \rightarrow b$ $B_{count} = 1$ $C_1 \rightarrow C_2 c$ $C_1 count = C_2 count + 1$ $C \rightarrow c$ $C_{count} = 1$

Question — ②

Because associativity is used for grouping when consecutive identical operators are present.

It doesn't determine the order in which evaluate the operands of a binary operator are evaluated.

So, they are not contradictory.

Question — (2)

Yes. due to the fact that with increment in number of references to the similar object it is hard to maintain the references to the object, so we need a garbage collection.

Question — (4)

```
int flag = 1;
```

```
while (flag) {
```

```
    line = read-line();
```

```
    flag = all-blank(line)
```

```
    if (flag) break;
```

```
    consume-line(line);
```

```
}
```

Question → ③

Maybe, don't find it convincing. Here can be a good alternative in C

i: Row
j: Column.

| i \ j | 0 | 1 | 2 | 3 |
|-------|---|---|---|---|
| 0 | | | | |
| 1 | | | | |
| 2 | 0 | 0 | 0 | 0 |
| 3 | | | | |

```
int is_zero_row(arr[][], int size) {  
    int i;  
    int j;  
  
    for (i = 0; i < size; i++) {  
        int counter = 0;  
        for (j = 0; j < size; j++) {  
            if (arr[i][j] == 0) {  
                counter++;  
            }  
            if (counter == size) {  
                return 1;  
            }  
        }  
    }  
    return 0;  
}
```