



University Interscholastic League

Computer Science Competition

2014 Invitational A Programming Problem Set

JUDGE DATA PRINTOUT - CONFIDENTIAL

I. Instructions

1. The attached printouts of the judge test data are provided for the reference of the contest director and programming judges. Additional copies may be made if needed for this purpose.
2. Printouts must remain CONFIDENTIAL. Additional copies may be made and returned to schools when other confidential contest material is returned.

II. Table of Contents

Number	Name
Problem 1	Candy Fest
Problem 2	Ciao Mondo
Problem 3	Common Names
Problem 4	Connect Four
Problem 5	Family
Problem 6	Farkle
Problem 7	Game Of Life
Problem 8	Italian Flag
Problem 9	Obstacles
Problem 10	Roman Numerals
Problem 11	Series
Problem 12	Triple Prime

1. Candy Fest

Judges Input:

```
8
3
3 2 1
4
1 2 3 4
3
3 1 2
7
12 4 5 3 7 18 4
1
5
5
50 40 30 20 10
6
95 24 53 72 51 82
10
3 10 10 3 10 10 3 10 10 3
```

Judges Output:

```
2
1
2
6
5
30
57
3
```

2. Ciao Mondo

No Input File

Judges Output:

```
Ciao Mondo  
Bonjour Monde  
Hola Mundo
```

3. Common Names

Judges Input:

6

Martha Mary Jane Mary Mary Jane Jane

Johnathan

Joe Mary Joe Shankar Ab Cd Mary

Ram Krishnan Ram Ganapathi This Ram Again Is Krishnan You Is Is

Hello World Hello Hello This Is A Test Hello

This Is A Test This Is A Test This Is A Test

Judges Output:

Jane Mary

Johnathan

Joe Mary

Is Ram

Hello

A Is Test This

4. Connect Four

Judges Input:

7

```
-----  
-----  
---r---  
brbr---  
brbr---  
brbr---  
-----  
-----  
-----  
rrr----  
bbbb---  
rbrrrb  
rbrbbbr  
bbrbrrb  
brrrbrr  
brbbrrb  
rbbrbbr  
-----  
-----  
b-----  
rbrbrbr  
brbrbrb  
rbrbrbr  
rbrrrr-  
rbrbbbb  
bbrbrrb  
brrrbrr  
brbbrrb  
rbbrbbr  
-br--rr  
rbrbbbr  
bbrbrrb  
brrrbrr  
brbbrrb  
rbbrbbr  
rbrrrrb  
rbrbbbr  
rbrbrrb  
brrrbrr  
brbbrrb  
rbbrbbr  
rbrrrrb
```

Judges Output:

```
Red Wins  
Blue Wins  
No win  
Blue Wins  
Blue Wins  
Red Wins  
No win
```

5. Family

Judges Input:

10
John father Jake
John mother Amanda
Mary sibling John
Nigel father Jake
Mary mother Amanda
Mary sibling Aaron
Mary sibling Zeke
Mia father Nigel
Mia sibling Ian
Martha sibling Mary

Judges Output:

Aaron	Mother: Unknown
Father: Unknown	Sibling: Mary
Mother: Unknown	
Sibling: Mary	Mary
	Father: Unknown
Amanda	Mother: Amanda
Father: Unknown	Sibling: Aaron
Mother: Unknown	Sibling: John
	Sibling: Martha
Ian	Sibling: Zeke
Father: Unknown	
Mother: Unknown	Mia
Sibling: Mia	Father: Nigel
	Mother: Unknown
Jake	Sibling: Ian
Father: Unknown	
Mother: Unknown	Nigel
	Father: Jake
John	Mother: Unknown
Father: Jake	
Mother: Amanda	Zeke
Sibling: Mary	Father: Unknown
	Mother: Unknown
Martha	Sibling: Mary
Father: Unknown	

6. Farkle

Judges Input:

```
123 3
1234 2
124 2
223 4
111 3
10 5
```

Judges Output:

```
333
38.2
366
7.7
355
6.7
261361542512132332363552413634632322624444
263.0
23266513243163561334261212345434356122313362543563231141553342151234516552411
1
41.4
4141552545264141522562436233333
1458.9
```

7. Game of Life

Judges Input:

```
3
5
3
00110
01010
01110
00110
00000
10
5
0000111110
1010000000
1001011110
1111001100
0000001100
0000111000
0000011000
0000011100
0000000110
0000001110
10
5
0000000000
0010000000
0001000000
0111000000
0000000000
0000000000
0000000000
0000000000
0000000000
0000000000
0000000000
```

Judges Output:

```
00110
11001
11011
01110
00000

0000000000
0000000000
1010000000
0010000000
1010000000
0000000000
0000000000
0000000000
0000001000
0000001000
0000001000

0000000000
0000000000
0000000000
0010100000
0001100000
0001000000
0000000000
0000000000
0000000000
0000000000
0000000000
```

8. Italian Flag

Judges Input:

```
5
9 5
12 3
12 5
15 3
27 10
```

Judges Output:

```
GGG---RRR
GGG   RRR
GGG   RRR
GGG   RRR
GGG---RRR
```

```
GGGG----RRRR
GGGG   RRRR
GGGG----RRRR
```

```
GGGG----RRRR
GGGG   RRRR
GGGG   RRRR
GGGG   RRRR
GGGG----RRRR
```

```
GGGGG-----RRRRR
GGGGG   RRRRR
GGGGG-----RRRRR
```

```
GGGGGGGGG-----RRRRRRRRR
GGGGGGGGG   RRRRRRRRR
GGGGGGGGG   RRRRRRRRR
GGGGGGGGG   RRRRRRRRR
GGGGGGGGG   RRRRRRRRR
GGGGGGGGG   RRRRRRRRR
GGGGGGGGG   RRRRRRRRR
GGGGGGGGG   RRRRRRRRR
GGGGGGGGG   RRRRRRRRR
GGGGGGGGG-----RRRRRRRRR
```

9. Obstacles

Judges Input:

```
4
2
2
. *
. .
2
3
. * .
* . .
5
4
. . . .
. * . .
. * . .
. . . .
* * * .
5
8
. . . * . * . .
. * . . . * . *
. . . . . . . .
* * * . . * * *
. . . . . . . .
```

Judges Output:

```
1
0
5
10
```

10. Roman Numerals

Judges Input:

```
6
XIX
MCMLIII
MMMIXIV
X
IX
MMCMLDII
```

Judges Output:

```
XIX = 19
MCMLIII = 1953
MMMIXIV = 3013
X = 10
IX = 9
MMCMLDII = 3352
```

11. Series

Judges Input:

```
6
3 5 -1 5
1 2 1 4
-2 2 -2 3
2 1 2 3
1 -3 2 4
2 3 1 5
```

Constraints

Absolute values of $A, B \leq 5; -2 \leq C \leq 2; 2 \leq M \leq 5$

Judges Output:

```
1875
8
256
64
-13824
162
```

12. Triple Prime

Judges Input:

9
8
30
105
210
529
385
150
400
102

Judges Output:

8 [2, 2, 2] NO
30 [2, 3, 5] YES
105 [3, 5, 7] YES
210 [2, 3, 5, 7] NO
529 [23, 23] NO
385 [5, 7, 11] YES
150 [2, 3, 5, 5] NO
400 [2, 2, 2, 2, 5, 5] NO
102 [2, 3, 17] YES