Spring 2018 MIHS Programming Contest
Judges Data

Problems:

0. Sample Problem
Input File: practice.txt

Input:

4
ABCBCABCABT
ACBCBCABCBAB
WCBBACAACBABC
ABCDCA

Output:

T
None
W
D

1. Frog

Input:

N/A

Output:

```
  @..@
 (----)
/ >__< \
^^ ~~ ^^
```

2. Bookcase

Input:

```
6
The Lord of the Rings
The Count of Monte Cristo
Harry Potter
State of Wonder
Lord of the Flies
Great Expectations
```

Output:

```
Great Expectations
Harry Potter
Lord of the Flies
State of Wonder
The Count of Monte Cristo
The Lord of the Rings
```

3. Line Graph

Input:

```
5
5 6 7
0 0 0
-1 -1 -1
1000 -5 7001
8 -7 -3
```

Output:

```
37
0
0
2001
-59
```

4. Chopping Trees

Input:

```
4
12  9  7  19
3  5  19  106
8  11  7  100
6  15  7  54
```

Output:

```
2185
3604
9500
5238
```

5. Bunny Island

Input:

```
4
1  1  1
55  89  6
8  13  3
34  55  17
```

Output:

```
2
1597
55
196418
```

6. Digit Search

Input:

```
5
Kd1234567faUHFAp0123o444i6f
Qwerty98bb4321Hfudh111o7
0fdELsfgHFdhFJfeE1
zero0onetwothreefourfivesixseven
01234567801234567910
```

Output:

```
4
None
1
0
9
```

7. Lost Phone

Input:

```
10
(9, 7)
5
Swimming Pool (8, 6)
Field (7, 3)
Neighbor's Home (1, 1)
Home (9, 3)
School Commons (6, 2)
```

Output:

```
Neighbor's Home
```

8. Intersecting Lines

Input:

```
5
3 -5 6 10
53 4 53 4
-11 8 -11 -2
0 1000 250 -500
-2 -81 99 1131
```

Output:

```
-5 -20
Same Line
None
6 1000
-12 -57
```

9. Roman Numerals

Input:

```
6
1
49
999
94
4763
555
```

Output:

```
I
XLIX
CMXCIX
XCIV
MMMMDCCLXIII
DLV
```

10. Reverse Engineering

Input:

```
5
    W
   W W
  W   W
WWWWWWW

MMMMM

CC

CCCCCCCCC
C        C
C        C
C        C
C        C
C        C
C        C
CCCCCCCCC

     M
    M M
   M   M
  M     M
 M       M
MMMMMMMMMMM
```

Output:

```
Triangular; 14; Wood
Linear; 5; Metal
Linear; 2; Clay
Rectangular; 72; Clay
Triangular; 33; Metal
```

11. Swap

Input:

8 2
000X000X
X0X0X0X0
X000X000
X0X0X00X

Output:

7

12. Fast Travel

Input:

```
3
7 9
###C###
##DM#D#
#SSMRR#
#MMMSR#
##RDSR#
#SMR#S#
#RMDSM#
#SMD###
#P#####
9 7
####C####
##RDR####
#DDDR#MD#
#S##R####
#DDDRMD##
##RSD#MS#
######P##
5 5
###C#
#MRS#
##RR#
#RRM#
##P##
```

Output:

```
40
50
29
```

13. 24 Game

Input:

```
6
48 19 1 58
12 3 7 16
24 24 24 24
1 2 3 2
15 30 44 60
60 45 30 15
```

Output:

```
Not Possible
Possible
Possible
Not Possible
Possible
Not Possible
```

14. Geometric Sequence

Input:

```
5
3 5 9 30 81 180 243
4 15 18 26 31 42 51 70 101
3 5 9 25 45 600 1200 3600
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
17 34 68
```

Output:

```
3
1
2
5
3
```

15. Factorization

Input:

```
5
10x^2 + 3x^0 - 21x^1
5x^1 + 1x^2 + 25x^0 - 16x^0 - 11x^1
1x^0
10x^2 - 9x^2 + 7x^1 - 1x^2 + 4x^0
51x^0 + 4x^2 - 2x^1
```

Output:

```
0.154 1.946
3
None
-0.571
None
```