TeamsCode Fall 2018 MIHS Programming Contest Judges Data

Problems:

0. Sample Problem
Input File: practice.txt

Input:

4
5 5 5 5 5
1 2 3 2 1
0 0 0 0 0 0 0 0 0
5 6 7 2 9 3 2 1

Output:

25
9
0
35

1. Elephant
Input File: elephant.txt

Input:

None.

Output:

```
                   __   __
               /    \~~~/    \
        ,----(         ..    )
       /      \__        __/
      / |        (\    |(
    ^   \     /___\   /\ |
        |__|       |__|  -
```
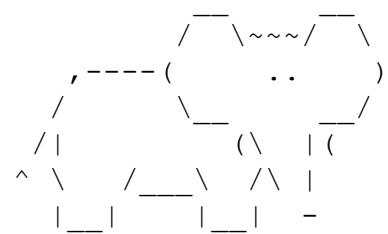
2. Merchant

Input File: merchant.txt

Input:

```
4
500 1 0.01
2 1000 0.99
35 35 0.098
0 0 0.0
```

Output:

```
495.0
20.0
1104.95
0.0
```

3. Secret Message

Input File: message.txt

Input:

```
4
The War of the Worlds
ThhaWil  f MarsWorlds
The Hunger Games
ThRueu gdieGamss
King Arthur
King Arthur
The Strange Case of Dr.Jekyll and Mr.Hyde
The Strange Case of Dr.Hyde a ndd Jekylle
```

Output:

```
hail Mars
Rue dies
No change
Hyde andJekyll
```

4. Pyramid
Input File: pyramid.txt

Input:

```
5
0
7
16
2
200
```

Output:

```
0
140
1496
5
2686700
```

5. Odds and Evens
Input File: oae.txt

Input:

```
4
12 7645 3821 73 7192 82 81 74
0 2 4 6 8 10
8 6 4 2 0 9 7 5 3 1
78 4 454 32 8542 1000 10000 100 10 1
```

Output:

```
73 81 3821 7645 12 74 82 7192
0 2 4 6 8 10
1 3 5 7 9 0 2 4 6 8
1 4 10 32 78 100 454 1000 8542 10000
```

6. Collatz Conjecture
Input File: collatz.txt

Input:

```
5
2
42
262144
85
1000000000
```

Output:

```
1
8
18
9
100
```

7. Word Choice
Input File: word.txt

Input:

```
7
aisle isle
altar alter
cereal serial
sight site
pedal peddle
hoard horde
forward foreword
5
I sat on the isle seat on a plane to the aisle of Britain.
At the site of her I picture the alter and pray for the strength to move foreword.
People pedal serial on the street, and I just can't stand the site on such a sight.
He formed the hoard and I want to ask him to write the forward for my book.
The cereal killer often ate serial taken from his horde.
```

Output:

```
I sat on the aisle seat on a plane to the isle of Britain.
At the sight of her I picture the altar and pray for the strength to move forward.
People peddle cereal on the street, and I just can't stand the sight on such a site.
He formed the horde and I want to ask him to write the foreword for my book.
The serial killer often ate cereal taken from his hoard.
```

8. Fencing

Input File: fence.txt

Input:

```
4
4 4
..X.
X...
...X
.X..
1 8
..X.X...
8 8
........
.X..X...
..XX....
.x.X....
...x....
....x...
.....x..
........
2 2
.X
..
```

Output:

```
4 4
1 3
6 5
1 1
```

9. Unit Conversion
Input File: conversion.txt

Input:

```
2
5
1 km/s equals 1000 m/s
200 cm/s equals 2 m/s
60 mph equals 1 mi/min
1 mi/s equals 60 mi/min
5 mi/s equals 804672 cm/s
5 km/s to mph
6
1 benjamin equals 2 grant
5 jackson equals 2 grant
1 jackson equals 2 hamilton
5 hamilton equals 10 lincoln
1 lincoln equals 5 washington
2 grant equals 10 hamilton
100 benjamin to washington
```

Output:

```
11185
10000
```

10. Area Under the Curves
Input File: area.txt

Input:

```
4
1.0 x + 1.0 y = 4.0
2.0 x + 0.0 y = 2.0
0.75 x - 1.0 y = 1.0
-0.5 x + 1.0 y = 1.0
0.0 x + 1.0 y = 4.0
1.0 x + 0.0 y = 2.0
3.0 x + 2.0 y = 4.0
0.75 x - 1.0 y = -1.0
```

Output:

```
3.500
7.333
8.000
1.111
```

11. Escape Room
Input File: escape.txt

Input:

```
3
8 8
SLOOOOOA
FNNNNNNL
FNNNNNNL
ALOOOOOG
LNNNNNNF
LNNNNNNF
LNNNNNNF
ALLLLLLX
4 4
NNAG
ASFA
ANNL
FXLG
4 4
XGLG
LANN
NAAL
NAGS
```

Output:

```
40
40
50
```

12. Flattened Cube
Input File: cube.txt

Input:

```
4
RB..
.GYO
..W.
....
O
.BXE
..Y.
..W.
..A.
Y
Q...
ZTYA
..W.
....
Q
V...
RB..
.GY.
..W.
B
```

Output:

```
G
A
W
W
```

13. Rubik's Cube
Input File: rubiks.txt

Input:

```
2
R U R' U R U U R'
R L F
```

Output:

```
6
30
```

14. Target

Input File: target.txt

Input:

```
3
4 2 6
93
2 3 6
30
4 1 5
45
```

Output:

```
92
Target
48
```

15. Markov Chain
Input File: markov.txt

Input:

```
3
9
A 0.33 - B
B 0.5 - B
A 0.33 - A
C 0.1 - A
C 0.1 - B
B 0.5 - C
B 0.0 - A
C 0.8 - C
A 0.34 - C
2
A 0.4 - B
B 0.5 - A
16
A 0.25 - A
A 0.25 - B
A 0.25 - C
A 0.25 - D
B 0.33 - A
B 0.0 - B
B 0.33 - C
B 0.34 - D
C 0.0 - A
C 0.5 - B
C 0.0 - C
C 0.5 - D
D 0.1 - A
D 0.1 - B
D 0.1 - C
D 0.7 - D
```

Output:

```
0.10
0.21
0.69
0.56
```

0.44
0.14
0.16
0.14
0.55