

## [Easy #1] School Shortcut

Input 1:

1540 1344

Output 1:

840

Input 2:

1080 1794

Output 2:

780

Input 3:

1200 1683

Output 3:

816

## [Easy #2] Competition Rankings

Input 1:

92

27

5 12 13 77 83 93 52 34 11 16 36 72 45 92 46 84 3 6 72 13 12 73  
94 82 94 11 78

Output 1:

4

Input 2:

53

99

37 87 33 84 98 3 5 62 35 25 13 22 15 80 72 76 47 8 42 18 4 7  
39 79 99 67 78 57 55 23 56 70 54 66 90 75 2 28 82 68 77 30 26  
61 44 45 24 95 88 48 93 19 60 71 17 38 58 29 96 11 52 94 49 83  
100 85 16 9 36 12 1 21 51 86 53 34 81 41 14 40 31 6 59 73 27  
65 43 32 20 69 74 97 63 64 46 89 92 50 10

Output 2:

47

Input 3:

3

13

99 99 99 99 99 99 99 99 99 99 99 3 99 0

Output 3:

12

## [Easy #3] DNA Sequencing

Input 1:

```
ATGCGCTACGACATACGACTACGACTACGATTTTCAGCATCGACTAGCAGCAGCAT  
TACGGGATGCTTTATGCTAATGCTGAAGCCAAAGTAGTAGCTGATCGTCGTCGTA
```

Output 1:

6

Input 2:

```
GGGGGGGGACGTAGACATACGATACAGAGAGAGATACAGATACGATACGATGAC  
TTCACACATGCATCTGTATGCTATGTCTCTTTTTTATGTCTATGCTATAATAATT
```

Output 2:

11

Input 3:

```
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC  
ACTACTATCTACTATCTATCATCTATCTATCTATCATCTTATTTTCATCTATTAT
```

Output 3:

55

## [Easy #4] Board Game

Input 1:

17

9 7 8 3 4 13 5 6 2 17 13 0 10 12 16 14 15

Output 1:

15

Input 2:

23

2 5 4 12 3 0 8 9 17 6 22 23 16 18 20 1 18 21 3 14 21 22 10

Output 2:

8

Input 3:

9

9 0 4 1 6 8 3 2 7

Output 3:

-1

## [Easy #5] Cheater Beater

Input 1:

12 17 25 40

8 0 15 24

Output 1:

21

Input 2:

10 15 30 35

0 25 50 30

Output 2:

100

Input 3:

3 5 9 14

9 14 14 35

Output 3:

0

## [Medium #1] Chess Mania

Input 1:

27

18 21

Output 1:

90

Input 2:

1034

657 521

Output 2:

3853

Input 3:

1

1 1

Output 3:

0



```
..***.***...*****.*.**.*****.*
..***.***...*****.*.**.*****.*
..***.***...*****.*.**.*****.*
..***.***...*****.*.**.*****.*
..***.***...*****.*.**.*****.*
..***.***...*****.*.**.*****.*
..***.***...*****.*.**.*****.*
*****
.....*.....
.....
```

Output 2:  
548

Input 3:  
3

```
...
.*.
...
```

Output 3:  
4



## [Medium #3] Returning to Earth

Input 1:

1000

Output 1:

9

Input 2:

6969

Output 2:

11

Input 3:

99999

Output 3:

17

# [Medium #4] Mars Colony

Input 1:

20

```
#.....#####.###...##  
..#####.....##...####  
#####.....##..#.#.##  
##..#####.#####.##  
#.....#.#####.###...##  
..#####.....##...####  
#####.#####.##.##  
##..#####.##.##.  
#.....#####.###...##  
#.#####.....##...####  
#####.....##..#.#.##  
##..#####.#####.##  
#.....#.#####.###...##  
..#####.....##...####  
#####..###.##..#.#.##  
##..#####.#####.##  
#.....#####.###...##  
..#####.....##.##.####  
#####.....##..#.#.##  
##..#####.#####.##
```

Output 1:

106

Input 2:

3

```
#.#  
.#.  
#.#
```

Output 2:

1

Input:

10

```
####.###..  
.###.###..
```

. . . . . # . . .  
. ### . # . . . . .  
. . . . . # . . .  
. ### . . . . .  
. . # . . . . # . . .  
. ### . ### . . .  
. . . . . # . . .  
. ### . ### . . .

Output:

8

## [Medium #5] Civil Cipher

Input 1:

OlcgxLonVqhasytoAhyagHbmr

Output 1:

CivilWarEighteenSixtyFour

Input 2:

Nxjejwhitejxdlkxoltelidurypduregrfcbnyvgsjubs

Output 2:

Pneumonoultramicroscopicsilicovolcanoconiosis

Input 3:

azyxwvutsrqponmlkjihgfedcba

Output 3:

aaaaaaaaaaaaaaaaaaaaaaaaaaaa

# [Hard #1] Yourcraft

Input 1:

3  
7 1 2  
6 **S H**  
5 4 3

Output:

0

Input 2:

15  
1 2 3 9 9 9 9 9 2 3 4 **H 9** 8 9  
9 8 4 5 7 2 8 3 8 4 2 9 **2** 3 9  
9 3 9 6 2 5 7 4 6 3 3 3 **1** 2 9  
9 6 8 7 3 8 5 8 5 8 5 2 **1** 1 9  
3 4 9 9 8 4 9 7 2 2 4 3 **3** 3 9  
1 3 4 1 2 3 6 9 4 5 1 2 **3** 1 9  
3 2 5 9 9 9 8 3 5 9 3 6 **2** 5 9  
7 9 9 9 5 3 8 4 8 4 8 7 **4** 8 9  
4 5 **S** 1 8 9 9 9 5 **2 1 3 2** 7 9  
2 7 **2** 3 7 6 9 3 1 **3** 1 4 5 6 9  
3 1 **2** 9 5 7 3 5 8 **2** 4 6 6 7 0  
9 9 **1 1 1 1** 3 2 2 **3** 2 4 4 6 9  
9 1 1 1 1 **1 2 1 1 1** 3 1 1 7 9  
8 8 8 8 8 8 8 8 8 8 2 8 8 9  
9 9 9 9 9 9 9 9 9 9 9 9 9 9

Output 2:

54

Input 3:

7  
**H 1** 5 3 5 8 9  
8 **9** 9 8 9 4 6  
7 **2 1** 9 1 1 5  
7 8 **1** 9 1 1 6  
**1 3 2** 7 6 9 7  
**1** 7 9 3 9 9 4  
**2 1 2 2 2 2 S**

Output 3:

32

## [Hard #2] Froggers

Input 1:

23 2

00000101001000001000100

Output 1:

50

Input 2:

30 15

010010001100011100011110000010

Output 2:

63872

Input 3:

90 3

01001010001010100010101010010100100000010100101000000100100101  
0100010101001010001000000000

Output 3:

1367233238





## [Hard #4] Last Knight

Input 1:

```
4
N***
***★
*★K*
****
```

Output 1:

```
2
```

Input 2:

```
7
*K***#*
####*#*#
***#*#*#
***###*#
***#*#*#
#***N**
#*****
```

Output 2:

```
4
```

Input 3:

```
10
*****#*****
####*#*#*#
***#*#*N**
#*#*#*#*#*#
***#####
#####
###*#*#*#*#
*##*#*#*#*#
*#*#*#*#*#
*#*#*#*#*#
*#*#*#*#*#
```

Output 3:

```
7
```

## [Hard #5] Intense Poker

Input 1:

```
C D S C H K 9 10 8 6
H 5 S K
H 7 D J
```

Output 1:

```
D9 S10 C8 H6 H7
```

Input 2:

```
C H S H H 10 Q 8 10 5
D 10 S 8
H 6 H 3
```

Output 2:

```
HQ H10 H5 H6 H3
```

Input 3:

```
C S H D D K J Q Q 3
C A S K
D K D 10
```

Output 3:

```
CK CA SK
```