icpc global
programming
tools sponsor

Official Problem Set

2017 ACM/ICPC

Asia Kabul First Round Online Programming Contest

icpc.foundation

Problem1 XYZ Programming Contest

We at XYZ programming contest team need a program to help us find the winner of the competition. How do we specify the winner? That is simple, winner is the team which has completed the higher number of question. If equal then, fewer amount of time with fewer number of errors. Why fewer number of errors? Because every incorrect submission has a 20mins penalty.

Input

There is an array of nine string each contain team_name question_number:minute_correct_solution_submitted:number_incorrect_tries

Output

Winner team name

Example

Input

```
a    5:62:1    9:76:3
b    1:219:4   2:37:4    4:22:4    8:167:2
c    1:247:2   5:233:1   6:122:3   7:195:4 9:99:0
d    1:124:4   3:128:0 6:84:0 8:60:1
e    1:227:2   2:197:1 5:66:1 7:214:4 9:21:0
f    1:143:3   3:174:4   7:196:2   8:76:1
g    1:236:3   2:104:2   3:234:1   4:40:3    5:105:4
     6:215:3   7:114:0
h    4:115:0   7:145:1
i    1:161:3   3:26:4 6:244:2 7:206:3 9:192:1
```

Output

g

Test case 2:

Input

```
a    1:246:1   4:150:0   5:163:3   6:94:4    7:156:0
     8:65:3    9:104:3
b    1:61:2    2:94:2    6:139:1   7:80:4
c    1:115:4   3:195:1   4:88:1    5:16:1
d    1:27:1    3:52:4    4:66:2    7:165:0
e    1:51:0    4:149:0   5:77:4    6:182:1   9:93:2
f    2:159:3   3:122:1   4:215:3   6:16:2    8:17:4
     9:115:3
```

```
g    1:151:0   5:75:0    7:92:4    8:219:1
h    1:198:4   3:83:2    5:54:4    7:177:1   8:80:4
     9:202:1
i    1:137:3   3:109:4   6:70:4
```

Output

```
a
```

Test case 3:

Input

```
a    4:193:1   5:226:3   7:243:3   8:228:0
b    1:155:3   3:111:0   4:62:0    5:174:1   7:127:3
     8:247:3   9:230:2
c    1:20:2    3:64:4    4:69:1    8:221:1   9:109:0
d    1:196:1   2:16:2    3:182:0   6:191:4   9:191:2
e    2:212:3   3:241:1   7:241:4   9:130:1
f    3:23:1    5:122:1   6:221:4   9:14:2
g    3:100:1   5:34:0    6:113:0   7:92:1    8:134:4
     9:228:3
h    1:143:0   2:82:1    6:151:3   7:37:0
i    1:169:3   2:182:0   4:170:1   7:141:3   9:158:3
```

Output

```
b
```

Test case 4:

Input

```
a    2:18:4    6:174:4   7:70:1
b    1:203:3   2:220:2   3:102:3   6:136:1   8:46:1
c    3:12:3    5:232:1   6:243:2   8:187:1
d    2:227:1   3:221:3   4:112:4   6:204:2   7:245:2
e    2:93:4    3:126:4   5:104:4   9:84:0
f    2:102:1   3:62:1    8:227:3   9:43:1
g    4:102:1   5:107:4   7:142:2   9:170:0
h    3:114:0   7:247:1   8:28:4
i    1:129:3   2:92:1    4:222:4   5:4:4     9:241:1
```

Output

```
b
```

Test case 5:

Input

```
a    7:46:4    8:92:1    9:242:0
b    2:123:4   5:198:2   8:38:4
```

```
c    2:62:0    4:121:1   8:4:2     9:75:0
d    3:87:3    4:109:4   6:134:0   7:50:4
e    1:81:4    6:70:2    7:212:0
f    2:143:1   6:90:0    7:1:4     8:42:4    9:181:3
g    1:133:1   2:97:4    3:178:2   4:76:0    8:196:3
     9:180:0
h    2:66:0    6:86:1    7:130:3   8:113:4   9:136:2
i    2:187:4   4:228:0   5:238:1   6:80:2    7:13:4
```

Output

```
g
```

Problem2 Car Company

Ali is the owner of the car product company. His company produce cars in various colors. His company's marketing department reported him that some combination of the three colors are interested in some regions. He wants to know what is the total number of three different colors combination can be produced from the available colors.

Note: The "R B Y" and "B R Y" are different combinations.

Input

First argument: N How many different colors is available (1<=N<= 10)
Second argument: Colors identifier tag
Third argument: Interested Colors in First position
Forth argument: Interested color in second position
Fifth argument: Interested colors in Third position

Output

Total number of matched patterns

Example

Input

5
G B Y R W
G B
B Y
W

Output

3

Test case 2:

Input

G B Y R W
G B Y
R W
B

Output

4

Test case 3:

Input

G B Y R W M
G B Y R
Y R M
R W

Output
15

Test case 4:
Input
G B R W
G
B R
W
Output
2

Test case 5:
Input
G B R W
G
B R
R
Output

1

Problem3 Prime Number

Reza and Noria are playing math games to find out the total number of prime number between two integer numbers. N1 and N2 (1 <=N1, N2 <= 50)

Your task is two write a program to help them out to figure out the total number of prime numbers.

Input

First argument N1

Second argument N2

Output

Total number of prime number.

Example

Input

3

17

Output

6

Test case 2:

Input

1

10

Output

4

Test case 3:

Input

4

50

Output

13

Test case 4:

Input

10

20

Output

4

Test case 5:

Input

1

1

Output

0