Frisco FirstBytes Programming Contest

October 14, 2017

BEGINNER PROBLEM SET

The final Beginner winner is decided by the total number of Beginner *and* Novice problems solved.

Beginner teams will receive credit for solving Novice problems only if they solved ALL the Beginner problems.

DO NOT OPEN THIS PACKET UNTIL TOLD TO DO SO

Problem R. **Shipping Cargo**

The Speed-ee Shipping Co. is moving cargo as fast as it can. It has a fleet of super freighter ships that can each haul 12,000 20-foot cargo containers! The Port Manager needs to know how much cargo can be sent with Speed-ee depending on how many ships it has ready to take on cargo today. Given the number of ships Speed-ee has ready, state how much cargo Speed-ee can take today.

Input An integer, n, indicating the number of ships Speed-ee has available today.

Output The number of 20-foot cargo containers that Speed-ee can take.

Assumption: n will not exceed 9126806!

Sample Input 18

Output 216000

Problem S. **Bunnies Abound**

Kelly, a rabbit breeder, has just made a deal with an associate to buy her entire stock of Holland Lops. The Holland Lop is a prized show rabbit for its floppy ears and beautiful coat. Kelly will buy 23 rabbits. Kelly needs to know how many cages she must buy to fit all the rabbits.

Input An integer ***n*** specifying the maximum capacity of a cage, in rabbits per cage.

Output The minimum number of cages needed to fit all the rabbits.

Assumptions ***n*** will be greater than 0.

Sample Input 6

Output 4

Problem T. **Tidbit Cypher**

Your friend has come up with a clever cypher. The tidbit cypher inserts a little bit of benign text into the message several times. All you have to do is remove this tidbit and the message is revealed!

Input The first line contains the tidbit to be removed.
The second line contains the encrypted message.

Output The output will be the decrypted message.

Sample Input abc
I deabcstrabcoy my eabcnemy wabcheabcn I maabcke habcim my frieabcndabc.

Output I destroy my enemy when I make him my friend.

Problem U. **Making Money at Mother Lode**

Sandra works at Mother Lode Data Mining Corp. She loves her job helping people solve problems with big data. She is glad to put her technical skills to use in a rewarding career.

Mother Lode will pay Sandra the standard hourly rate for the first 40 hours in a week. All hours over 40 will be paid at 2 times the standard rate. The company also pays a $20 one time bonus to employees if they work any hours on Saturday. Employees never work on Sundays.

Calculate Sandra's paycheck for the week.

Input

The first line contains the standard hourly rate (dollars/hour) ***d***.
The next 6 lines contain the hours, ***h***, she worked for each day Monday through Saturday.

Output

The amount of dollars Sandra earned this week.

Assumptions

d will not exceed 100.00.
h will be greater than or equal to 0 and less than 24

Sample Input

```
55.00
8
8
10
8
9
2
```

Output

```
$ 2770.0
```

Problem V. **Mammoth Movie House Attendance**

The Mammoth Movie House is tallying up its attendance for the day. Management has asked you to give a final headcount. There are multiple movie times each day. Each movie time has several different movies showing. Each movie has a different number of attendees each show time. Total the attendees for all films shown today.

Input The first line contains the number of movie times ***t*** today. Each of the following t lines contains the number of movies ***m*** shown at that time, followed by m integers for the attendance **a** at each movie.

Output Print the total number of people in attendance as shown below.

Assumptions
t will not exceed 25
m will not exceed 12
a will not exceed 1000

Sample Input

```
4
3 200 100 50
2 10 20
4 100 100 100 100
3 200 200 200
```

Output Mammoth Movie House had 1380 attendees today.

Problem W. **Diamond Selection**

Liam wants to buy Lillian a beautiful diamond. He wants to select the largest diamond in his price range. The jeweler has shown him a selection within his price range. Liam is picky and only wants the best quality. So he will only choose a diamond that is either Flawless (F) or one with that only has a Very Small Inclusion (VS). Diamonds with Small Inclusions (SI) or Large Inclusions (LC) will not do.

Which diamond will Liam purchase?

Input Each line will contain the carat weight and clarity rating for each diamond. There will be an unknown number of diamonds **d**. The final line contains 0 (zero) which indicates the end of the data.

Output The carat weight and clarity rating for the diamond Liam will choose.

Assumptions ***d*** will be between 1 and 20

Sample Input

```
1.25 F
.95 F
2.0 LI
1.32 SI
.78 VS
1.65 SI
1.55 VS
1.35 F
0
```

Output 1.55 VS

Problem X. **As the Bird Flies**

Marco keeps homing pigeons. He wants to know how far his birds fly to get home. Marco grabs his birds and walks X blocks due east and Y blocks due north. Then he lets the birds loose. He assumes that his pigeons fly directly home in a straight line. Calculate how far the birds fly home measured by the length of a standard city block. Assume that Marco's city consists entirely of standard-length city blocks.

Input The first line has a number X, the blocks Marco walks eastbound. The second line has a number Y, the blocks Marco walks northbound.

Output The number of blocks the pigeons will fly home, rounded to a whole number.

Sample Input

```
3.0
4.0
```

Output

```
5
```

Problem Y. **Popsicle Purchase**

Pablo was asked to get a shopping list for popsicles for his pals. He polled each pal for their popsicle preference: papaya, passion fruit, peach, or pineapple. He penned each one as he went.

You must tally the count for each flavor.

Input The first line is the number of pals *p*. The following lines contain each pal's flavor pick, one flavor per pal. The only flavors are: papaya, passion fruit, peach, and pineapple

Output The output will have a count for each flavor. The fruit should be listed in alphabetic order.

Sample Input

```
8
pineapple
papaya
passion fruit
papaya
peach
papaya
pineapple
passion fruit
```

Output

```
3 papaya
2 passion fruit
1 peach
2 pineapple
```