



Cats and a Mouse

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Problem

Submissions

Leaderboard

Discussions

Editorial

Two cats named **A** and **B** are standing at integral points on the x-axis. Cat **A** is standing at point **x** and cat **B** is standing at point **y**. Both cats run at the same speed, and they want to catch a mouse named **C** that's hiding at integral point **z** on the x-axis. Can you determine who will catch the mouse?

You are given **q** queries in the form of **x**, **y**, and **z**. For each query, print the appropriate answer on a new line:

- If cat **A** catches the mouse first, print `Cat A`.
- If cat **B** catches the mouse first, print `Cat B`.
- If both cats reach the mouse at the same time, print `Mouse C` as the two cats fight and mouse escapes.

Input Format

The first line contains a single integer, **q**, denoting the number of queries.

Each of the **q** subsequent lines contains three space-separated integers describing the respective values of **x** (cat **A**'s location), **y** (cat **B**'s location), and **z** (mouse **C**'s location).

Constraints

- $1 \leq q \leq 100$
- $1 \leq x, y, z \leq 100$

Output Format

On a new line for each query, print `Cat A` if cat **A** catches the mouse first, `Cat B` if cat **B** catches the mouse first, or `Mouse C` if the mouse escapes.

Sample Input 0

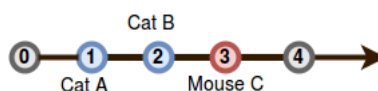
```
3
1 2 3
1 3 2
2 1 3
```

Sample Output 0

```
Cat B
Mouse C
Cat A
```

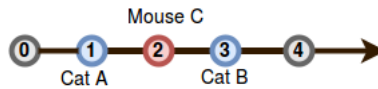
Explanation 0

Query 0: The positions of the cats and mouse are shown below:



Cat **B** will catch the mouse first, so we print `Cat B` on a new line.

Query 1: In this query, cats **A** and **B** reach mouse **C** at the exact same time:



Because the mouse escapes, we print `Mouse C` on a new line.

[f](#) [t](#) [in](#)

Submissions: [37955](#)

Max Score: 15

Difficulty: Easy

Rate This Challenge:

☆☆☆☆☆

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Current Buffer (saved locally, editable)

C++14

```
1 #include <iostream>
2 #include <cmath>
3 using namespace std;
4 int main()
5 {
6     int q=0, x[100], y[100], z[100];
7     cin>> q;
8     if(q>=1 && q<=100)
9     {
10         for(int i=0; i<q; ++i)
11         {
12             cin>>x[i];
13             cin>>y[i];
14             cin>>z[i];
15         }
16
17         for(int i=0; i<q; ++i)
18         {
19             if ( abs(z[i]-x[i]) < abs(z[i]-y[i]) )
20                 cout<<"Cat A"<<endl;
21             else if (abs(z[i]-x[i]) == abs(z[i]-y[i]))
22                 cout<<"Mouse C"<<endl;
23             else
24                 cout<<"Cat B"<<endl;
25         }
26     }
27     return 0;
28 }
29
30
```

Line: 1 Col: 1

[Upload Code as File](#) ☐ Test against custom input

Run Code

Submit Code