

6786 AFL Grand Final

Tonight is the 2014 AFL (Australian Football League) Grand Final between the Hawthorn Hawks and the Sydney Swans. Hundreds of thousands of people across Australia will be watching as these two teams compete for bragging rights. Me and a group of my friends are wagering who will win the big game. There is a lot on the line (including my pride), so I have decided to put my emotions aside and have come up with a mathematical model of the game to determine who I should bet on. This model is very complex. In fact, it is too complex to describe during contest time. But I need your help for one of the steps in the process. I have collected statistics from the teams and I need to know which team is closest to average. Let me describe what I mean:

Let K be a multiset of n numbers. Each number has a weight associated with it. There are 2^n subsets of K and each has a corresponding weighted average. (By subset, here and in the following, we mean “submultiset”.) For example, consider the multiset $K = [2, 6, 9, 13]$ with weights $[2, 1, 3, 1]$. Then the **weighted** averages are:

Subset	Average	Subset	Average	Subset	Average	Subset	Average
$\{\}$	Undefined	$\{2\}$	2	$\{6\}$	6	$\{2, 6\}$	$\frac{10}{3}$
$\{9\}$	9	$\{2, 9\}$	$\frac{31}{5}$	$\{6, 9\}$	$\frac{33}{4}$	$\{2, 6, 9\}$	$\frac{37}{6}$
$\{13\}$	13	$\{2, 13\}$	$\frac{17}{3}$	$\{6, 13\}$	$\frac{19}{2}$	$\{2, 6, 13\}$	$\frac{23}{4}$
$\{9, 13\}$	10	$\{2, 9, 13\}$	$\frac{22}{3}$	$\{6, 9, 13\}$	$\frac{46}{5}$	$\{2, 6, 9, 13\}$	$\frac{50}{7}$

Each team is given a score (H for the Hawks and S for the Swans). The *distance* between a score and the multiset K is the minimum difference (in terms of absolute value) between the score and the weighted average of any of the subsets of K . For example, if $H = 5$ and $S = 11$, then H is $\frac{2}{3}$ away from the subset $\{2, 13\}$ and S is 1 away from the subset $\{9, 13\}$. I need to know which team has the smaller distance from K , or in other words, which team is closer to the weighted average of a subset of K .

Input

The input will contain multiple test cases. Each test case will start with three integers n ($1 \leq n \leq 30$), H ($1 \leq H \leq 10^{12}$) and S ($1 \leq S \leq 10^{12}$). The next n lines will contain two integers, k_i ($1 \leq k_i \leq 10^{12}$) and w_i ($1 \leq w_i \leq 3$), denoting the i th element of K and its weight, respectively.

Output

For each test case, you need to determine which team is closer to the average. If they are the same distance from K , output ‘Tie’, otherwise output either ‘Hawks’ or ‘Swans’.

Sample Input

```
4 5 11
2 2
6 1
```

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9 3
13 1
2 1 10
7 1
8 1
2 10 11
10 1
12 1
```

Sample Output

```
Hawks
Swans
Tie
```