

**PROBLEM H****CROQUET FREE TURNS****10 POINTS**

In a golf croquet (GC) handicap doubles event, each side may be awarded free turns according to the handicaps of the 4 players. In GC, handicaps range from -6 for the strongest players up to +20 for beginners.



To calculate free turns, the handicaps of all 4 players are needed. In a match between Team A and Team B, the stronger player in Team A is compared to the weaker player in Team B. The difference between their handicaps is halved to give the number of free turns awarded to the weaker of the two players. This is repeated for the stronger player in Team B who is compared to the weaker player in Team A. The number of free turns will be zero if two players being compared have the same handicap.

In a game where both players in one team are weaker than both players in the other team, then both sets of free turns will go to the weaker team.

Half turns are not allowed, so any half from the calculation is normally rounded up. However, if both members of the same team have half turns, one is rounded up and the other rounded down.

**Input**

Input will consist of 4 lines each representing a player in a match. The first and second players will be one team, the third and fourth the other.

Each line will consist of a name, as defined in the preamble, followed by a space, followed by an integer representing that player's handicap (in the range -6 to +20 inclusive). + signs will not be used.

Where two players on the same side have the same handicap, the first named player is to be considered the stronger player in that team.

**Output**

Two lines will be output showing the results of the two free turn calculations, starting with that for the stronger player of the first team. Both lines end with a full stop.

If one team receives two half turns, the turns of the weaker player will be rounded up, those of the stronger player rounded down.

If one player receives free turns, the line will say

<Player 1> receives <F> free turns from <Player 2>.

Where <Player 1> is the weaker player and <Player 2> is the stronger player, and <F> is the calculated number of free turns. If the number of free turns is 1, the output must read 1 free turn.

**[Continued]**

If a calculation results in 0 free turns, the line will say:

No free turns between <Player 1> and <Player 2>.

Where <Player 1> is the weaker player of their team, and <Player 2> is the stronger player of their team.

### **Sample Input 1**

Albert 8  
Bernice 4  
Chen 3  
Dimitri 12

### **Output for Sample Input 1**

Dimitri receives 4 free turns from Bernice.  
Albert receives 3 free turns from Chen.

### **Explanation**

Albert and Bernice are playing Chen and Dimitri.

Bernice is the stronger player in the first team (has the lower handicap) so is compared to Dimitri, who is the weaker player in the second team. The handicap difference is 8, which is halved to give 4 free turns for Dimitri.

Chen is now compared to Albert. The difference is 5 which is halved to  $2\frac{1}{2}$ . This is rounded up to 3 free turns for Albert.

### **Sample Input 2**

Walter 4  
Xerxes 2  
Yasmin 1  
Zac -5

### **Output for Sample Input 2**

No free turns between Yasmin and Xerxes.  
Walter receives 5 free turns from Zac.

### **Explanation**

Walter and Xerxes are playing Yasmin and Zac.

Xerxes is compared to Yasmin. The handicap difference is 1 so is halved to give  $\frac{1}{2}$  free turn for Xerxes. Walter is compared to Zac. With a handicap difference of 9 this gives  $4\frac{1}{2}$  free turns for Walter. With Xerxes and Walter both receiving  $\frac{1}{2}$ s, Xerxes' (the stronger team member) is rounded down to 0, Walter's is rounded up to 5. Yasmin is the weaker player in her team so comes first in the output.