

A. Harry Potter and Three Spells

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

A long time ago (probably even in the first book), Nicholas Flamel, a great alchemist and the creator of the Philosopher's Stone, taught Harry Potter three useful spells. The first one allows you to convert a grams of sand into b grams of lead, the second one allows you to convert c grams of lead into d grams of gold and third one allows you to convert e grams of gold into f grams of sand. When Harry told his friends about these spells, Ron Weasley was amazed. After all, if they succeed in turning sand into lead, lead into gold, and then turning part of the gold into sand again and so on, then it will be possible to start with a small amount of sand and get huge amounts of gold! Even an infinite amount of gold! Hermione Granger, by contrast, was skeptical about that idea. She argues that according to the law of conservation of matter getting an infinite amount of matter, even using magic, is impossible. On the contrary, the amount of matter may even decrease during transformation, being converted to magical energy. Though Hermione's theory seems convincing, Ron won't believe her. As far as Ron is concerned, Hermione made up her law of conservation of matter to stop Harry and Ron wasting their time with this nonsense, and to make them go and do homework instead. That's why Ron has already collected a certain amount of sand for the experiments. A quarrel between the friends seems unavoidable...

Help Harry to determine which one of his friends is right, and avoid the quarrel after all. To do this you have to figure out whether it is possible to get the amount of gold greater than any preassigned number from some finite amount of sand.

Input

The first line contains 6 integers a, b, c, d, e, f ($0 \leq a, b, c, d, e, f \leq 1000$).

Output

Print "Ron", if it is possible to get an infinitely large amount of gold having a certain finite amount of sand (and not having any gold and lead at all), i.e., Ron is right. Otherwise, print "Hermione".

Examples

input
100 200 250 150 200 250
output
Ron

input
100 50 50 200 200 100
output
Hermione

input
100 10 200 20 300 30
output
Hermione

input
0 0 0 0 0 0
output
Hermione

input
1 1 0 1 1 1
output
Ron

input
1 0 1 2 1 2
output
Hermione

input
100 1 100 1 0 1
output
Ron

Note

Consider the first sample. Let's start with the 500 grams of sand. Apply the first spell 5 times and turn the sand into 1000 grams of lead. Then apply the second spell 4 times to get 600 grams of gold. Let’s take 400 grams from the resulting amount of gold turn them back into sand. We get 500 grams of sand and 200 grams of gold. If we apply the same operations to 500 grams of sand again, we can get extra 200 grams of gold every time. Thus, you can get 200, 400, 600 etc. grams of gold, i.e., starting with a finite amount of sand (500 grams), you can get the amount of gold which is greater than any preassigned number.

In the forth sample it is impossible to get sand, or lead, or gold, applying the spells.

In the fifth sample an infinitely large amount of gold can be obtained by using only the second spell, which allows you to receive 1 gram of gold out of nothing. Note that if such a second spell is available, then the first and the third one do not affect the answer at all.

The seventh sample is more interesting. We can also start with a zero amount of sand there. With the aid of the third spell you can get sand out of nothing. We get 10000 grams of sand in this manner. Let's get 100 grams of lead using the first spell 100 times. Then make 1 gram of gold from them. We managed to receive 1 gram of gold, starting with a zero amount of sand! Clearly, in this manner you can get an infinitely large amount of gold.