Solar rocket   P64151_en

At a planet far away, an alien civilization is developing a rocket that works with solar energy. Assume this simplified model: The rocket is a point that moves vertically. Due to gravity, there is a constant downward acceleration of a everywhere. At the rocket location, there are h hours of daytime, followed by h hours of nighttime, followed by h hours of daytime, etc. During the daytime hours, the solar engines of the rocket provide an upward acceleration of b. Will the rocket reach a vertical distance of d? If so, can you compute the first time to reach that point?

Input

Input consists of several cases, each with a, b, h and d. Assume that a and b are real numbers such that $1 \leq a < b \leq 10$, that h is an integer number between 1 and 20, that d is an integer number between 1 and 10000, and that all the units used are km and hours.

Output

For every case, print "never" if the rocket will never reach height d. Otherwise, print the minimum time to reach that height, with four digits after the decimal point. The input cases have no precision issues, nor ill-conditioned cases. With the given cases, the answer will never be larger that 200 hours.

Sample input 1

```
1 4 3 10
1 4 3 1000
2 5 7 10000
3.1 5.3 12 2000
3.1 5.3 12 200
6.15 9.95 19 1024
3.12 5.96 19 1481
```

Sample output 1

```
2.5820
41.8100
183.3596
never
13.7570
25.4604
59.0880
```

Problem information

Author: Salvador Roura

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