

# Grace in Space

## Problem ID: gracespace

It's the year 2051. Grace, the most advanced spaceship ever built, is sailing across the vast universe from one galaxy to another with its Hopper engine.

The Hopper engine has a unique way of operation. It first needs to be charged for some time and then, by releasing the stored energy, it instantly teleports the spaceship forward and “hops” to the destination. If the charge time is  $t$  microseconds, then the ship will hop  $at^5 + bt^3 + ct$  light-years for some positive coefficient  $a$ ,  $b$ , and  $c$ .

Remembering that rover Perseverance landed in Jezero Crater 30 years ago, which took about 7 months just to travel from Earth to Mars, you wonder how much time it would take for Grace to reach Mars from your current location. Given the distance  $d$  in light-years, can you calculate the time  $t$  needed to charge the Hopper engine in microseconds?

### Input

The input contains a single line contains four real numbers  $a$ ,  $b$ ,  $c$ , and  $d$ .  $1 \leq a, b, c \leq 100$ ,  $1 \leq d \leq 10^9$ . Up to 4 digits after the decimal.

### Output

Output a single real number, the time needed to hop to Mars. Round to 6 digits after the decimal.

#### Sample Input 1

1.0 1.0 1.0 3.0
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#### Sample Output 1

1.000000
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#### Sample Input 2

3.14 15.9 26.5 358979.3
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#### Sample Output 2

10.172151
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