

TLE '16 Contest 6 (Mock CCC) J3 - Two Kangaroos

Time limit: 1.0s **Memory limit:** 256M

Papa Kangaroo needs to catch his son, Little Kangaroo, but Little Kangaroo keeps playing around!

Papa Kangaroo starts at point (x_1, y_1) and can hop an integer distance from 1 to K units, inclusive.

Little Kangaroo starts at point (x_2, y_2) and can hop only a **constant distance** of exactly L units.

Little Kangaroo, always watching Papa Kangaroo, loves to play. Whenever Papa Kangaroo hops any positive distance, Little Kangaroo simultaneously hops L units in the **exact same direction** as Papa Kangaroo. No Kangaroo can hop diagonally.

What is the minimum number of hops Papa Kangaroo will need to catch his son?

Input Specification

The first line will contain the space separated integers x_1, y_1 ($-5 \times 10^8 \leq x_1, y_1 \leq 5 \times 10^8$), and K ($2 \leq K \leq 1000$) in that order.

The second line will contain space separated integers x_2, y_2 ($-5 \times 10^8 \leq x_2, y_2 \leq 5 \times 10^8$), and L ($1 \leq L < K$) in that order.

- For the first 3 out of the 15 points, $-25 \leq x_1, y_1, x_2, y_2 \leq 25$.
- For the second 3 out of the 15 points, $-2000 \leq x_1, y_1, x_2, y_2 \leq 2000$.
- For the third 3 out of the 15 points, $-200\,000 \leq x_1, y_1, x_2, y_2 \leq 200\,000$.
- For the fourth 3 out of the 15 points, $-1\,000\,000 \leq x_1, y_1, x_2, y_2 \leq 1\,000\,000$.

Output Specification

Output a single integer representing the minimum number of hops Papa Kangaroo will need for him to end at the same spot as Little Kangaroo.

Sample Input

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10 10 3
5 5 2
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Sample Output

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10
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