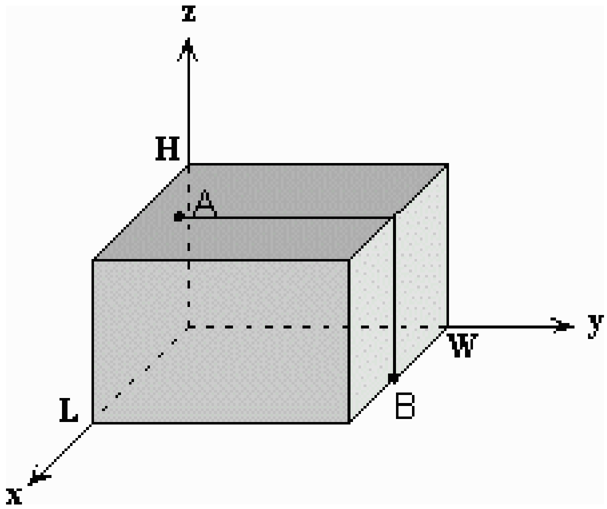
503 Parallelepiped walk

Two points $A(x_1, y_1, z_1)$ and $B(x_2, y_2, z_2)$ are placed on the surface of parallelepiped $P = \{(x, y, z) : 0 \le x \le L, 0 \le y \le W, 0 \le z \le H\}$ with $L * W * H$ dimensions (see figure). These two points can be linked with various curves lying on the surface of P. You are to find out the square of the shortest curve length.

Parallelepiped dimensions L, W, H and coordinates of the points are integers, $0 \le L, W, H \le 1000$.



Input

The input data file consists of a series of lines with each line containing 9 integers (in indicated order): $L, W, H, x_1, y_1, z_1, x_2, y_2, z_2$. The numbers are separated with spaces.

Output

For each line of input there will be one line of output, which should contain the square of the shortest curve length between points A and B on the surface of P.

Sample Input

```
5 5 2 3 1 2 3 5 0
300 600 900 300 550 0 0 550 900
```

Sample Output

```
36
970000
```