

# Friends

Input file: `stdin`  
Output file: `stdout`  
Time limit: 2 seconds  
Memory limit: 256 megabytes

Three friends Alex, Dmitry and Petr want to go abroad for a better life. They start at 09:00 in the morning in their home city  $A$  and want to be in the foreign city  $B$  as soon as possible.

Alex wants to start immediately and decided to use a car and a highway. He has to drive directly to the customs point  $C$ , then spends  $D$  minutes there to pass the customs, and then drives directly to the city  $B$ . He drives the car with a speed of  $V$  kilometers per hour.

Dmitry has bought an airplane ticket. His plane departs at time  $T$  from the city  $A$  and flies for some time  $F$  directly to the city  $B$ .

Petr felt adventurous, so he decided to take his neighbor's tractor and drive straight to the city  $B$  with a speed of  $W$  kilometers per hour. If Petr's path lies through the customs point  $C$ , he spends  $D$  minutes there to pass the customs too. Otherwise, he does not stop during the whole trip.

Now they wonder who will be the first in the city  $B$  and can cook a welcoming dinner for all of them. We assume that friends live on a plane, and the distance between points is the common Euclidean distance.

## Input

The first line of input contains six integers  $X_A, Y_A, X_B, Y_B, X_C$  and  $Y_C$ , the coordinates in kilometers of cities  $A$  and  $B$  and the customs point  $C$  respectively ( $0 \leq X_A, Y_A, X_B, Y_B, X_C, Y_C \leq 1000$ ). It is guaranteed that the customs point  $C$  is closer to  $A$  than the city  $B$  and closer to  $B$  than the city  $A$ .

The second line contains two integers  $D$  and  $V$ , the time to pass the customs in minutes and the speed of Alex's car in kilometers per hour respectively ( $0 \leq D \leq 1000, 40 \leq V \leq 100$ ).

The third line contains the departure time  $T$  and the duration  $F$  of Dmitry's flight, both in the format "HH:MM". It is guaranteed that the departure time is correct, later than 09:00 and earlier than 24:00. The flight duration is greater than 00:00 and less than 24:00.

The fourth line contains one integer  $W$ , the speed of Petr's tractor in kilometers per hour ( $10 \leq W \leq 50$ ).

## Output

Output the name of the first friend in the city  $B$ . It is guaranteed that the absolute difference between arrival times for each pair of friends will be at least one second.

## Examples

stdin	stdout
0 0 10 0 5 5 60 100 10:00 00:05 10	Petr
0 0 100 0 50 50 0 100 09:01 02:10 50	Alex
0 0 1000 0 500 500 0 100 10:00 02:10 33	Dmitry