Drone Trajectories

A text file drones.txt contains the description of flight trajectories that a fleet of drones covers during a given time frame. The goal is to identify the drone that requires the battery with the largest capacity, i.e., the drone with the highest value for the following ratio: total distance covered / number of charging stations visited. Further details and specifications follow.

The format of the drones.txt file is as follows:

```
<drone_id:station_id1,station_id2,...,station_idN>
```

where:

drone_id is the unique identifier code of a drone; station_id is the unique identifier code of a delivery/charging station Example For example, if the drones.txt file was as follows:

```
d01:A,B,D
d02:C,E,D
d03:F,C
d04:A,B,E,D
d05:A,B,A,B
d06:A,D,A,D,A
```

it means that the drone d01 starts from station A and stops to deliver and recharge at stations B and then D; the drone d02 instead follows the trajectory C->E->D; the drone d03 flies from F to C, and so on. Note the drone d05, which follows the circular trajectory A->B->A->B; the same goes for the drone d06.

A second file stops.txt contains the coordinates of all the stations within the flight area. The format of the stops.txt file is as follows:

```
<station_id:x,y>
```

where

station_id is the unique identifier code of a charging station (the same used in the drones.txt file) x,y is the x=column,y=row coordinate in the Cartesian space that represents the flight area; with (0,0) being the coordinate of the top-left corner of the area.

Example stops.txt

```
B:2,1
C:1,4
D:3,5
E:2,7
F:0,7
```

The following assumptions are made:

- since between two stations the drones always fly in a straight line, the distance between two stations is the Euclidean distance,

- there are no limits to the number of stations in a single trajectory,

- a drone can touch the same station multiple times,

- the number of drones and the number of stations is not known in advance,

- there are no two stations with the same coordinate,

- each drone follows a single trajectory,

- the contents of the files are considered correct,

Given the examples above, the program must produce on screen the message

```
highest battery capacity for d06
total distance = 20.0
number of stops = 4
```

Tip: for understanding the text and examples, it's best to draw the position of the stations in a two-dimensional matrix, but the program can be solved without resorting to tabular data structures.