Navigating a Drone through an Airport

1.0 Problem Description

The goal is to navigate a drone through an airport in the shortest time possible. The airport is composed of several interconnected circular roads, and the drone's position is described by a road name and the degrees clockwise around the road's circumference. The drone can transfer between roads at points of intersection. An example is illustrated below.
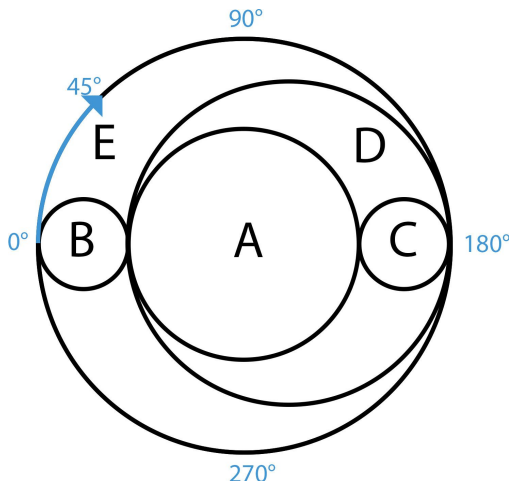
Road	Circle Radius (m)
A	2500
B	1000
C	1000
D	3500
E	4500

The drone is operated using 4 commands:

Command	Description
GO	The drone accelerates at 1 m/s², with a maximum speed of 4 m/s.
STOP	The drone decelerates at 1 m/s² until it has stopped.
REVERSE	If clockwise the drone will face counterclockwise, and vice versa. This operation takes 0.3 seconds to complete and can only be issued when the drone is at rest.
TRANSFER [road id]	The drone changes roads. This operation can only be issued when the drone is located at a point of intersection. This operation takes 0.1 seconds to complete.

2.0 Program Input

Your program will receive a set of circular roads, a set of intersections, an initial position/orientation, and a destination. The exact format is described below.

```
[number of roads]
[road] [radius in meters] [number of intersecting roads]
…

[total number of intersections across all roads]
[road_1] [point of intersection on road_1] [road_2] [point of intersection on road_2]
...

[initial road] [initial position] [initial orientation]
[destination road] [destination position]
```

Example (see illustration in section 1.0):

```
5
A 2500 3
B 1000 3
C 1000 3
D 3500 4
E 4500 3

16
A 0 B 180
A 0 D 0
A 180 C 0
B 0 E 0
B 180 A 0
B 180 D 0
C 0 A 180
C 180 D 180
C 180 E 180
D 0 A 0
D 0 B 180
D 180 C 180
D 180 E 180
E 0 B 0
E 180 C 180
E 180 D 180

A 355 +
B 0
```

Note: Orientation is described using '+' (clockwise) and '-' (counterclockwise).
Note: You may assume that the radius of each road will be at least 1000 meters.

3.0 Program Output

Your program should output the minimum time in seconds (to one decimal place) required to travel from the initial position to the final position, along with the commands required to achieve that time. The drone does not need stop at the destination, just drive through it.

Example:

```
27.1
GO (25.0)
TRANSFER B (0.1)
GO (2.0)
```