```
======Testing class Point======
Creating Point (0.00, 0.00)
Creating Point (8.00, 6.00)
The distance between a and b is 10.0
Creating Point (314.29, 313.19)
805.0 is illegal value for y and has been replaced with
443.6697421703644
Creating Point (5.00, 443.67)
805.0 is illegal value for x and has been replaced with
2.1875800880638785
Creating Point (2.19, 5.00)
-5.0 is illegal value for x and has been replaced with
154.80026173993454
609.22 is illegal value for y and has been replaced with
296.8430245512029
Creating Point (154.80, 296.84)
=====Testing class Junction======
Creating Junction 1 at Point (181.64, 360.62)
Creating Junction 2 at Point (318.14, 570.42)
The distance between Junction 1 and Junction 2 is 250.2879544503947
The distance between Junction 2 and Junction 1 is 250.2879544503947
======Testing class Road======
Creating Road from Junction 1 to Junction 2, length: 250.29
The length of Road from Junction 1 to Junction 2 is 250.2879544503947
[Road from Junction 1 to Junction 2]
[Road from Junction 1 to Junction 2]
Creating Junction 3 at Point (550.47, 457.43)
Road can not connect a junction to itself, the end junction has been
replaced with Junction 3
Creating Road from Junction 1 to Junction 3, length: 381.32
The length of Road from Junction 1 to Junction 3 is 381.3187857585648
[Road from Junction 1 to Junction 2, Road from Junction 1 to Junction
3]
======Testing class Map=======
Map #1
Creating Junction 4 at Point (669.33, 417.53)
Creating Junction 5 at Point (730.74, 334.89)
Creating Junction 6 at Point (688.12, 241.46)
Creating Junction 7 at Point (593.55, 258.61)
Creating Junction 8 at Point (400.10, 89.97)
Creating Junction 9 at Point (714.71, 284.30)
Creating Junction 10 at Point (89.51, 214.28)
```

```
Creating Junction 11 at Point (181.03, 129.60)
Creating Junction 12 at Point (324.41, 156.33)
Creating Junction 13 at Point (722.29, 279.52)
Creating Road from Junction 4 to Junction 5, length: 102.96
Creating Road from Junction 4 to Junction 6, length: 177.06
Creating Road from Junction 4 to Junction 8, length: 424.00
Creating Road from Junction 4 to Junction 9, length: 140.74
Creating Road from Junction 4 to Junction 10, length: 614.42
Creating Road from Junction 4 to Junction 11, length: 566.88
Creating Road from Junction 4 to Junction 12, length: 432.67
Creating Road from Junction 5 to Junction 6, length: 102.69
Creating Road from Junction 5 to Junction 12, length: 443.84
Creating Road from Junction 6 to Junction 7, length: 96.11
Creating Road from Junction 6 to Junction 8, length: 325.43
Creating Road from Junction 6 to Junction 10, length: 599.23
Creating Road from Junction 6 to Junction 11, length: 519.29
Creating Road from Junction 6 to Junction 12, length: 373.54
Creating Road from Junction 6 to Junction 13, length: 51.15
Creating Road from Junction 7 to Junction 9, length: 123.85
Creating Road from Junction 7 to Junction 10, length: 505.99
Creating Road from Junction 7 to Junction 12, length: 287.93
Creating Road from Junction 7 to Junction 13, length: 130.42
Creating Road from Junction 8 to Junction 4, length: 424.00
Creating Road from Junction 8 to Junction 6, length: 325.43
Creating Road from Junction 8 to Junction 9, length: 369.79
Creating Road from Junction 8 to Junction 10, length: 334.55
Creating Road from Junction 8 to Junction 12, length: 100.66
Creating Road from Junction 9 to Junction 4, length: 140.74
Creating Road from Junction 9 to Junction 5, length: 53.07
Creating Road from Junction 9 to Junction 6, length: 50.42
Creating Road from Junction 9 to Junction 7, length: 123.85
Creating Road from Junction 9 to Junction 10, length: 629.11
Creating Road from Junction 9 to Junction 13, length: 8.96
Creating Road from Junction 10 to Junction 4, length: 614.42
Creating Road from Junction 10 to Junction 8, length: 334.55
Creating Road from Junction 10 to Junction 9, length: 629.11
Creating Road from Junction 10 to Junction 11, length: 124.69
Creating Road from Junction 10 to Junction 13, length: 636.14
Creating Road from Junction 11 to Junction 4, length: 566.88
Creating Road from Junction 11 to Junction 5, length: 586.80
Creating Road from Junction 11 to Junction 6, length: 519.29
Creating Road from Junction 11 to Junction 7, length: 432.23
Creating Road from Junction 11 to Junction 8, length: 222.63
Creating Road from Junction 11 to Junction 9, length: 555.66
Creating Road from Junction 11 to Junction 13, length: 561.64
Creating Road from Junction 12 to Junction 4, length: 432.67
```

```
Creating Road from Junction 12 to Junction 6, length: 373.54
Creating Road from Junction 12 to Junction 8, length: 100.66
Creating Road from Junction 13 to Junction 7, length: 130.42
Creating Road from Junction 13 to Junction 8, length: 373.81
Creating Road from Junction 13 to Junction 9, length: 8.96
Creating Road from Junction 13 to Junction 10, length: 636.14
Creating Road from Junction 13 to Junction 12, length: 416.52
Random TrafficLights Junction 4, delay= 4: green light on Road from
Junction 8 to Junction 4
Sequential TrafficLights Junction 5, delay= 2: green light on Road
from Junction 4 to Junction 5
Sequential TrafficLights Junction 10, delay= 3: green light on Road
from Junction 4 to Junction 10
Sequential TrafficLights Junction 11, delay= 2: green light on Road
from Junction 4 to Junction 11
[Road from Junction 8 to Junction 4]
Map #2
Creating Junction 14 at Point (0.00, 0.00)
Creating Junction 15 at Point (0.00, 3.00)
Creating Junction 16 at Point (4.00, 3.00)
Creating Junction 17 at Point (4.00, 0.00)
Creating Road from Junction 14 to Junction 15, length: 3.00
Creating Road from Junction 15 to Junction 16, length: 4.00
Creating Road from Junction 16 to Junction 17, length: 3.00
Creating Road from Junction 17 to Junction 14, length: 4.00
Creating Road from Junction 14 to Junction 16, length: 5.00
[Road from Junction 14 to Junction 16, Road from Junction 16 to
Junction 17]
======Testing the game=======
Creating Junction 18 at Point (181.63, 141.53)
Creating Junction 19 at Point (470.25, 496.45)
Creating Junction 20 at Point (785.97, 89.11)
Creating Junction 21 at Point (520.62, 427.41)
Creating Junction 22 at Point (128.47, 142.10)
Creating Junction 23 at Point (466.72, 256.77)
Creating Junction 24 at Point (772.54, 424.36)
Creating Junction 25 at Point (333.21, 340.39)
Creating Junction 26 at Point (524.76, 23.94)
Creating Junction 27 at Point (388.68, 178.51)
Creating Road from Junction 18 to Junction 19, length: 457.45
Creating Road from Junction 18 to Junction 23, length: 307.50
Creating Road from Junction 18 to Junction 24, length: 655.11
Creating Road from Junction 18 to Junction 25, length: 250.04
Creating Road from Junction 19 to Junction 18, length: 457.45
```

```
Creating Road from Junction 19 to Junction 21, length: 85.46
Creating Road from Junction 19 to Junction 23, length: 239.70
Creating Road from Junction 19 to Junction 24, length: 310.77
Creating Road from Junction 19 to Junction 27, length: 328.24
Creating Road from Junction 20 to Junction 18, length: 606.61
Creating Road from Junction 20 to Junction 19, length: 515.37
Creating Road from Junction 20 to Junction 21, length: 429.95
Creating Road from Junction 20 to Junction 25, length: 517.82
Creating Road from Junction 20 to Junction 27, length: 407.22
Creating Road from Junction 21 to Junction 22, length: 484.96
Creating Road from Junction 21 to Junction 24, length: 251.93
Creating Road from Junction 21 to Junction 25, length: 206.63
Creating Road from Junction 21 to Junction 27, length: 281.71
Creating Road from Junction 23 to Junction 18, length: 307.50
Creating Road from Junction 23 to Junction 25, length: 157.54
Creating Road from Junction 23 to Junction 27, length: 110.53
Creating Road from Junction 24 to Junction 19, length: 310.77
Creating Road from Junction 24 to Junction 21, length: 251.93
Creating Road from Junction 24 to Junction 22, length: 703.20
Creating Road from Junction 24 to Junction 23, length: 348.73
Creating Road from Junction 24 to Junction 26, length: 470.88
Creating Road from Junction 25 to Junction 22, length: 285.02
Creating Road from Junction 25 to Junction 24, length: 447.28
Creating Road from Junction 25 to Junction 26, length: 369.91
Creating Road from Junction 25 to Junction 27, length: 171.13
Creating Road from Junction 26 to Junction 18, length: 362.72
Creating Road from Junction 26 to Junction 21, length: 403.49
Creating Road from Junction 26 to Junction 22, length: 413.53
Creating Road from Junction 26 to Junction 23, length: 239.95
Creating Road from Junction 26 to Junction 24, length: 470.88
Creating Road from Junction 26 to Junction 25, length: 369.91
Creating Road from Junction 27 to Junction 18, length: 210.33
Creating Road from Junction 27 to Junction 19, length: 328.24
Creating Road from Junction 27 to Junction 20, length: 407.22
Creating Road from Junction 27 to Junction 21, length: 281.71
Creating Road from Junction 27 to Junction 22, length: 262.75
Creating Road from Junction 27 to Junction 25, length: 171.13
Creating Road from Junction 27 to Junction 26, length: 205.93
Random TrafficLights Junction 18, delay= 2: green light on Road from
Junction 26 to Junction 18
Random TrafficLights Junction 19, delay= 2: green light on Road from
Junction 27 to Junction 19
Sequential TrafficLights Junction 20, delay= 3: green light on Road
from Junction 27 to Junction 20
Random TrafficLights Junction 22, delay= 2: green light on Road from
Junction 24 to Junction 22
```

Random TrafficLights Junction 25, delay= 4: green light on Road from Junction 23 to Junction 25

Sequential TrafficLights Junction 26, delay= 4: green light on Road from Junction 24 to Junction 26

Sequential TrafficLights Junction 27, delay= 3: green light on Road from Junction 19 to Junction 27

Creating Vehicle 1, speed: 90, path: [Road from Junction 20 to Junction 19, Road from Junction 19 to Junction 21, Road from Junction 21 to Junction 22]

Creating Vehicle 2, speed: 113, path: [Road from Junction 19 to Junction 21, Road from Junction 21 to Junction 25, Road from Junction 25 to Junction 22]

Creating Vehicle 3, speed: 88, path: [Road from Junction 21 to Junction 24, Road from Junction 24 to Junction 26, Road from Junction 26 to Junction 24, Road from Junction 24 to Junction 19]

Creating Vehicle 4, speed: 66, path: [Road from Junction 24 to Junction 19, Road from Junction 19 to Junction 23, Road from Junction 23 to Junction 18, Road from Junction 18 to Junction 23]

Creating Vehicle 5, speed: 97, path: [Road from Junction 25 to Junction 22]

Turn 1

Vehicle 1 is moving on the Road from Junction 20 to Junction 19 Vehicle 2 is moving on the Road from Junction 21 to Junction 25 Vehicle 3 is moving on the Road from Junction 21 to Junction 24 Vehicle 4 is moving on the Road from Junction 24 to Junction 19 Vehicle 5 is moving on the Road from Junction 25 to Junction 22

Turn 2

Vehicle 1 is moving on the Road from Junction 20 to Junction 19
Vehicle 2 is moving on the Road from Junction 21 to Junction 25
Vehicle 3 is moving on the Road from Junction 21 to Junction 24
Vehicle 4 is moving on the Road from Junction 24 to Junction 19
Vehicle 5 is moving on the Road from Junction 25 to Junction 22
Random TrafficLights Junction 18, delay= 2: green light on Road from Junction 20 to Junction 18

Random TrafficLights Junction 19, delay= 2: green light on Road from Junction 20 to Junction 19

Random TrafficLights Junction 22, delay= 2: green light on Road from Junction 25 to Junction 22

Turn 3

Vehicle 1 is moving on the Road from Junction 20 to Junction 19 Vehicle 2 is moving on the Road from Junction 25 to Junction 22 Vehicle 3 is moving on the Road from Junction 24 to Junction 26 Vehicle 4 is moving on the Road from Junction 24 to Junction 19

Vehicle 5 arrived to it's destination: Junction 22

Sequential TrafficLights Junction 20, delay= 3: green light on Road from Junction 27 to Junction 20

Sequential TrafficLights Junction 27, delay= 3: green light on Road from Junction 20 to Junction 27

Turn 4

Vehicle 1 is moving on the Road from Junction 20 to Junction 19

Vehicle 2 is moving on the Road from Junction 25 to Junction 22

Vehicle 3 is moving on the Road from Junction 24 to Junction 26

Vehicle 4 is moving on the Road from Junction 24 to Junction 19

Vehicle 5 arrived to it's destination: Junction 22

Random TrafficLights Junction 18, delay= 2: green light on Road from Junction 27 to Junction 18

Random TrafficLights Junction 19, delay= 2: green light on Road from Junction 20 to Junction 19

Random TrafficLights Junction 22, delay= 2: green light on Road from Junction 25 to Junction 22

Random TrafficLights Junction 25, delay= 4: green light on Road from Junction 18 to Junction 25

Sequential TrafficLights Junction 26, delay= 4: green light on Road from Junction 25 to Junction 26

Turn 5

Vehicle 1 is moving on the Road from Junction 20 to Junction 19

Vehicle 2 is moving on the Road from Junction 25 to Junction 22

Vehicle 3 is moving on the Road from Junction 24 to Junction 26

Vehicle 4 is moving on the Road from Junction 19 to Junction 23

Vehicle 5 arrived to it's destination: Junction 22

Turn 6

Vehicle 1 is moving on the Road from Junction 19 to Junction 21

Vehicle 2 arrived to it's destination: Junction 22

Vehicle 3 is moving on the Road from Junction 24 to Junction 26

Vehicle 4 is moving on the Road from Junction 19 to Junction 23

Vehicle 5 arrived to it's destination: Junction 22

Random TrafficLights Junction 18, delay= 2: green light on Road from Junction 19 to Junction 18

Random TrafficLights Junction 19, delay= 2: green light on Road from Junction 20 to Junction 19

Sequential TrafficLights Junction 20, delay= 3: green light on Road from Junction 27 to Junction 20

Random TrafficLights Junction 22, delay= 2: green light on Road from Junction 21 to Junction 22

Sequential TrafficLights Junction 27, delay= 3: green light on Road from Junction 21 to Junction 27

Turn 7

Vehicle 1 is moving on the Road from Junction 21 to Junction 22

Vehicle 2 arrived to it's destination: Junction 22

Vehicle 3 is moving on the Road from Junction 24 to Junction 26

Vehicle 4 is moving on the Road from Junction 19 to Junction 23

Vehicle 5 arrived to it's destination: Junction 22

Turn 8

Vehicle 1 is moving on the Road from Junction 21 to Junction 22

Vehicle 2 arrived to it's destination: Junction 22

Vehicle 3 is moving on the Road from Junction 24 to Junction 26

Vehicle 4 is moving on the Road from Junction 19 to Junction 23

Vehicle 5 arrived to it's destination: Junction 22

Random TrafficLights Junction 18, delay= 2: green light on Road from Junction 19 to Junction 18

Random TrafficLights Junction 19, delay= 2: green light on Road from Junction 24 to Junction 19

Random TrafficLights Junction 22, delay= 2: green light on Road from Junction 26 to Junction 22

Random TrafficLights Junction 25, delay= 4: green light on Road from Junction 20 to Junction 25

Sequential TrafficLights Junction 26, delay= 4: green light on Road from Junction 27 to Junction 26

Turn 9

Vehicle 1 is moving on the Road from Junction 21 to Junction 22

Vehicle 2 arrived to it's destination: Junction 22

Vehicle 3 is moving on the Road from Junction 26 to Junction 24

Vehicle 4 is moving on the Road from Junction 23 to Junction 18

Vehicle 5 arrived to it's destination: Junction 22

Sequential TrafficLights Junction 20, delay= 3: green light on Road from Junction 27 to Junction 20

Sequential TrafficLights Junction 27, delay= 3: green light on Road from Junction 23 to Junction 27

Turn 10

Vehicle 1 is moving on the Road from Junction 21 to Junction 22

Vehicle 2 arrived to it's destination: Junction 22

Vehicle 3 is moving on the Road from Junction 26 to Junction 24

Vehicle 4 is moving on the Road from Junction 23 to Junction 18

Vehicle 5 arrived to it's destination: Junction 22

Random TrafficLights Junction 18, delay= 2: green light on Road from Junction 23 to Junction 18

Random TrafficLights Junction 19, delay= 2: green light on Road from Junction 27 to Junction 19

Random TrafficLights Junction 22, delay= 2: green light on Road from Junction 25 to Junction 22