START program

Acceptable parameters: braking

car_1_v (м/с)	distance (м)
10	3
10	4
10	5
10	6
10	7
10	8
10	9
10	10
10	11
10	12
10	13
10	14
11	6
11	7
11	8
11	9
11	10
11	11
11	12
11	13
11	14
11	15
11	16
11	17
11	18
12	9
12	10
12	11
12	12
12	13
12	14
12	15
12	16
12	17
12	18
12	19
12	20
13	12
13	13
13	14
13	15
13	16
13	17
13	18
13	19
13	20
14	15
14	16
14	17
14	18
14	19
14	20
15	18
15	19
15	20

Acceptable parameters: speedup

```
car_1_v (м/с) | distance (м)
     12      0
     12      1
     13      2
     13      3
     14      4
     14      5
     14      6
     15      6
     15      7
     15      8
     15      9
     16      8
     16      9
     16     10
     16     11
     17     10
     17     11
     17     12
     17     13
     17     14
     18     12
     18     13
     18     14
     18     15
     18     16
     19     14
     19     15
     19     16
     19     17
     19     18
     20     16
     20     17
     20     18
     20     19
     20     20


Acceptable parameters: change
car_1_v (м/с) | distance (м) | car_1_min_curvature (1/м) | car_1_max_curvature (1/м)
    10.0000         0      0.0235      0.0471
    10.0000    1.0000      0.0235      0.0471
    10.0000    2.0000      0.0118      0.0471
    10.0000    3.0000      0.0118      0.0471
    10.0000    4.0000      0.0118      0.0471
    10.0000    5.0000      0.0118      0.0471
    10.0000    6.0000      0.0118      0.0471
    10.0000    7.0000      0.0118      0.0471
    10.0000    8.0000      0.0118      0.0471
    10.0000    9.0000      0.0118      0.0471
    10.0000   10.0000      0.0118      0.0471
    10.0000   11.0000      0.0118      0.0471
    10.0000   12.0000      0.0118      0.0471
    10.0000   13.0000      0.0118      0.0471
    10.0000   14.0000      0.0118      0.0471
    11.0000         0      0.0195      0.0389
    11.0000    1.0000      0.0195      0.0389
    11.0000    2.0000      0.0195      0.0389
    11.0000    3.0000      0.0195      0.0389
    11.0000    4.0000      0.0195      0.0389
    11.0000    5.0000      0.0097      0.0389
    11.0000    6.0000      0.0097      0.0389
```

```
11.0000     7.0000     0.0097     0.0389
11.0000     8.0000     0.0097     0.0389
11.0000     9.0000     0.0097     0.0389
11.0000    10.0000     0.0097     0.0389
11.0000    11.0000     0.0097     0.0389
11.0000    12.0000     0.0097     0.0389
11.0000    13.0000     0.0097     0.0389
11.0000    14.0000     0.0097     0.0389
11.0000    15.0000     0.0097     0.0389
11.0000    16.0000     0.0097     0.0389
11.0000    17.0000     0.0097     0.0389
11.0000    18.0000     0.0097     0.0389
12.0000     2.0000     0.0245     0.0327
12.0000     3.0000     0.0164     0.0327
12.0000     4.0000     0.0164     0.0327
12.0000     5.0000     0.0164     0.0327
12.0000     6.0000     0.0164     0.0327
12.0000     7.0000     0.0164     0.0327
12.0000     8.0000     0.0082     0.0327
12.0000     9.0000     0.0082     0.0327
12.0000    10.0000     0.0082     0.0327
12.0000    11.0000     0.0082     0.0327
12.0000    12.0000     0.0082     0.0327
12.0000    13.0000     0.0082     0.0327
12.0000    14.0000     0.0082     0.0327
12.0000    15.0000     0.0082     0.0327
12.0000    16.0000     0.0082     0.0327
12.0000    17.0000     0.0082     0.0327
12.0000    18.0000     0.0082     0.0327
12.0000    19.0000     0.0082     0.0327
12.0000    20.0000     0.0082     0.0327
13.0000     4.0000     0.0139     0.0279
13.0000     5.0000     0.0209     0.0279
13.0000     6.0000     0.0139     0.0279
13.0000     7.0000     0.0139     0.0279
13.0000     8.0000     0.0139     0.0279
13.0000     9.0000     0.0139     0.0279
13.0000    10.0000     0.0139     0.0279
13.0000    11.0000     0.0139     0.0279
13.0000    12.0000     0.0070     0.0279
13.0000    13.0000     0.0070     0.0279
13.0000    14.0000     0.0070     0.0279
13.0000    15.0000     0.0070     0.0279
13.0000    16.0000     0.0070     0.0279
13.0000    17.0000     0.0070     0.0279
13.0000    18.0000     0.0070     0.0279
13.0000    19.0000     0.0070     0.0279
13.0000    20.0000     0.0070     0.0279
14.0000     6.0000     0.0060     0.0240
14.0000     7.0000     0.0120     0.0240
14.0000     8.0000     0.0180     0.0240
14.0000     9.0000     0.0120     0.0240
14.0000    10.0000     0.0120     0.0240
14.0000    11.0000     0.0120     0.0240
14.0000    12.0000     0.0120     0.0240
14.0000    13.0000     0.0120     0.0240
14.0000    14.0000     0.0120     0.0240
14.0000    15.0000     0.0060     0.0240
14.0000    16.0000     0.0060     0.0240
14.0000    17.0000     0.0060     0.0240
14.0000    18.0000     0.0060     0.0240
14.0000    19.0000     0.0060     0.0240
```

```
    14.0000    20.0000    0.0060    0.0240
    15.0000     8.0000    0.0052    0.0209
    15.0000     9.0000    0.0105    0.0209
    15.0000    10.0000    0.0105    0.0209
    15.0000    11.0000    0.0157    0.0209
    15.0000    12.0000    0.0105    0.0209
    15.0000    13.0000    0.0105    0.0209
    15.0000    14.0000    0.0105    0.0209
    15.0000    15.0000    0.0105    0.0209
    15.0000    16.0000    0.0105    0.0209
    15.0000    17.0000    0.0105    0.0209
    15.0000    18.0000    0.0105    0.0209
    15.0000    19.0000    0.0052    0.0209
    15.0000    20.0000    0.0052    0.0209
    16.0000    10.0000    0.0046    0.0184
    16.0000    11.0000    0.0046    0.0184
    16.0000    12.0000    0.0092    0.0184
    16.0000    13.0000    0.0092    0.0184
    16.0000    14.0000    0.0138    0.0184
    16.0000    15.0000    0.0092    0.0184
    16.0000    16.0000    0.0092    0.0184
    16.0000    17.0000    0.0092    0.0184
    16.0000    18.0000    0.0092    0.0184
    16.0000    19.0000    0.0092    0.0184
    16.0000    20.0000    0.0092    0.0184
    17.0000    12.0000    0.0041    0.0163
    17.0000    13.0000    0.0041    0.0163
    17.0000    14.0000    0.0041    0.0163
    17.0000    15.0000    0.0081    0.0163
    17.0000    16.0000    0.0081    0.0163
    17.0000    17.0000    0.0122    0.0163
    17.0000    18.0000    0.0081    0.0163
    17.0000    19.0000    0.0081    0.0163
    17.0000    20.0000    0.0081    0.0163
    18.0000    14.0000    0.0036    0.0145
    18.0000    15.0000    0.0036    0.0145
    18.0000    16.0000    0.0036    0.0145
    18.0000    17.0000    0.0073    0.0145
    18.0000    18.0000    0.0073    0.0145
    18.0000    19.0000    0.0109    0.0145
    18.0000    20.0000    0.0109    0.0145
    19.0000    16.0000    0.0033    0.0130
    19.0000    17.0000    0.0033    0.0130
    19.0000    18.0000    0.0033    0.0130
    19.0000    19.0000    0.0033    0.0130
    19.0000    20.0000    0.0065    0.0130
    20.0000    18.0000    0.0029    0.0118
    20.0000    19.0000    0.0029    0.0118
    20.0000    20.0000    0.0029    0.0118


Acceptable maneuvers:

Parameters:

car_1_v_grid:
    10
    11
    12
    13
    14
```

```
      15
      16
      17
      18
      19
      20


distance_grid:
       0
       1
       2
       3
       4
       5
       6
       7
       8
       9
      10
      11
      12
      13
      14
      15
      16
      17
      18
      19
      20


car_1_v = 10 м/c, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.023544, 0.047088]

car_1_v = 10 м/c, distance = 1 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.023544, 0.047088]

car_1_v = 10 м/c, distance = 2 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 3 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 4 м
```

```
    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 5 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 6 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 7 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 8 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 9 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 10 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 11 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 12 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/c, distance = 13 м
```

```
    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/с, distance = 14 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.011772, 0.047088]

car_1_v = 10 м/с, distance = 15 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 10 м/с, distance = 16 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 10 м/с, distance = 17 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 10 м/с, distance = 18 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 10 м/с, distance = 19 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 10 м/с, distance = 20 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 11 м/с, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.019458, 0.038916]

car_1_v = 11 м/с, distance = 1 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.019458, 0.038916]
```

car_1_v = 11 м/c, distance = 2 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.019458, 0.038916]

car_1_v = 11 м/c, distance = 3 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.019458, 0.038916]

car_1_v = 11 м/c, distance = 4 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.019458, 0.038916]

car_1_v = 11 м/c, distance = 5 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/c, distance = 6 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/c, distance = 7 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/c, distance = 8 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/c, distance = 9 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/c, distance = 10 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS

```
                curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/с, distance = 11 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
                curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/с, distance = 12 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
                curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/с, distance = 13 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
                curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/с, distance = 14 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
                curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/с, distance = 15 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
                curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/с, distance = 16 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
                curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/с, distance = 17 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
                curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/с, distance = 18 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
                curvature_range = [0.0097289, 0.038916]

car_1_v = 11 м/с, distance = 19 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
```

```
    change : NOT NEEDED, COLLISION

car_1_v = 11 м/с, distance = 20 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 12 м/с, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 12 м/с, distance = 1 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 12 м/с, distance = 2 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.024525, 0.0327]

car_1_v = 12 м/с, distance = 3 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.01635, 0.0327]

car_1_v = 12 м/с, distance = 4 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.01635, 0.0327]

car_1_v = 12 м/с, distance = 5 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.01635, 0.0327]

car_1_v = 12 м/с, distance = 6 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.01635, 0.0327]

car_1_v = 12 м/с, distance = 7 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.01635, 0.0327]
```

```
car_1_v = 12 м/c, distance = 8 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/c, distance = 9 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/c, distance = 10 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/c, distance = 11 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/c, distance = 12 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/c, distance = 13 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/c, distance = 14 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/c, distance = 15 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/c, distance = 16 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]
```

car_1_v = 12 м/с, distance = 17 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/с, distance = 18 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/с, distance = 19 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 12 м/с, distance = 20 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.008175, 0.0327]

car_1_v = 13 м/с, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 13 м/с, distance = 1 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 13 м/с, distance = 2 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 13 м/с, distance = 3 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 13 м/с, distance = 4 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.013931, 0.027863]

car_1_v = 13 м/с, distance = 5 м

```
    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.020897, 0.027863]

car_1_v = 13 м/c, distance = 6 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.013931, 0.027863]

car_1_v = 13 м/c, distance = 7 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.013931, 0.027863]

car_1_v = 13 м/c, distance = 8 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.013931, 0.027863]

car_1_v = 13 м/c, distance = 9 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.013931, 0.027863]

car_1_v = 13 м/c, distance = 10 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.013931, 0.027863]

car_1_v = 13 м/c, distance = 11 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.013931, 0.027863]

car_1_v = 13 м/c, distance = 12 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0069657, 0.027863]

car_1_v = 13 м/c, distance = 13 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0069657, 0.027863]

car_1_v = 13 м/c, distance = 14 м
```

```
    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0069657, 0.027863]

car_1_v = 13 м/с, distance = 15 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0069657, 0.027863]

car_1_v = 13 м/с, distance = 16 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0069657, 0.027863]

car_1_v = 13 м/с, distance = 17 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0069657, 0.027863]

car_1_v = 13 м/с, distance = 18 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0069657, 0.027863]

car_1_v = 13 м/с, distance = 19 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0069657, 0.027863]

car_1_v = 13 м/с, distance = 20 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0069657, 0.027863]

car_1_v = 14 м/с, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 14 м/с, distance = 1 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 14 м/с, distance = 2 м
```

```
    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 14 м/с, distance = 3 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 14 м/с, distance = 4 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 14 м/с, distance = 5 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 14 м/с, distance = 6 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0060061, 0.024024]

car_1_v = 14 м/с, distance = 7 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.012012, 0.024024]

car_1_v = 14 м/с, distance = 8 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.018018, 0.024024]

car_1_v = 14 м/с, distance = 9 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.012012, 0.024024]

car_1_v = 14 м/с, distance = 10 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.012012, 0.024024]

car_1_v = 14 м/с, distance = 11 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
```

```
                          curvature_range = [0.012012, 0.024024]

car_1_v = 14 м/с, distance = 12 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.012012, 0.024024]

car_1_v = 14 м/с, distance = 13 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.012012, 0.024024]

car_1_v = 14 м/с, distance = 14 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.012012, 0.024024]

car_1_v = 14 м/с, distance = 15 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0060061, 0.024024]

car_1_v = 14 м/с, distance = 16 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0060061, 0.024024]

car_1_v = 14 м/с, distance = 17 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0060061, 0.024024]

car_1_v = 14 м/с, distance = 18 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0060061, 0.024024]

car_1_v = 14 м/с, distance = 19 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0060061, 0.024024]

car_1_v = 14 м/с, distance = 20 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
```

```
    change : NEEDED, SUCCESS
            curvature_range = [0.0060061, 0.024024]

car_1_v = 15 м/c, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 15 м/c, distance = 1 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 15 м/c, distance = 2 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 15 м/c, distance = 3 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 15 м/c, distance = 4 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 15 м/c, distance = 5 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 15 м/c, distance = 6 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 15 м/c, distance = 7 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 15 м/c, distance = 8 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.005232, 0.020928]

car_1_v = 15 м/c, distance = 9 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
```

```
    change : NEEDED, SUCCESS
            curvature_range = [0.010464, 0.020928]

car_1_v = 15 м/c, distance = 10 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.010464, 0.020928]

car_1_v = 15 м/c, distance = 11 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.015696, 0.020928]

car_1_v = 15 м/c, distance = 12 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.010464, 0.020928]

car_1_v = 15 м/c, distance = 13 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.010464, 0.020928]

car_1_v = 15 м/c, distance = 14 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.010464, 0.020928]

car_1_v = 15 м/c, distance = 15 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.010464, 0.020928]

car_1_v = 15 м/c, distance = 16 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.010464, 0.020928]

car_1_v = 15 м/c, distance = 17 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.010464, 0.020928]

car_1_v = 15 м/c, distance = 18 м

    braking: NEEDED, SUCCESS
```

```
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.010464, 0.020928]

car_1_v = 15 м/с, distance = 19 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.005232, 0.020928]

car_1_v = 15 м/с, distance = 20 м

    braking: NEEDED, SUCCESS
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.005232, 0.020928]

car_1_v = 16 м/с, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 16 м/с, distance = 1 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 16 м/с, distance = 2 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 16 м/с, distance = 3 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 16 м/с, distance = 4 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 16 м/с, distance = 5 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 16 м/с, distance = 6 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 16 м/с, distance = 7 м
```

```
    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 16 м/с, distance = 8 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 16 м/с, distance = 9 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 16 м/с, distance = 10 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0045984, 0.018394]

car_1_v = 16 м/с, distance = 11 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0045984, 0.018394]

car_1_v = 16 м/с, distance = 12 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0091969, 0.018394]

car_1_v = 16 м/с, distance = 13 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0091969, 0.018394]

car_1_v = 16 м/с, distance = 14 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.013795, 0.018394]

car_1_v = 16 м/с, distance = 15 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0091969, 0.018394]

car_1_v = 16 м/с, distance = 16 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
```

```
    change : NEEDED, SUCCESS
            curvature_range = [0.0091969, 0.018394]

car_1_v = 16 м/с, distance = 17 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0091969, 0.018394]

car_1_v = 16 м/с, distance = 18 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0091969, 0.018394]

car_1_v = 16 м/с, distance = 19 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0091969, 0.018394]

car_1_v = 16 м/с, distance = 20 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0091969, 0.018394]

car_1_v = 17 м/с, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 1 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 2 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 3 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 4 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 5 м
```

```
    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 6 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 7 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 8 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 9 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 10 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 11 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 17 м/с, distance = 12 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0040734, 0.016293]

car_1_v = 17 м/с, distance = 13 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0040734, 0.016293]

car_1_v = 17 м/с, distance = 14 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0040734, 0.016293]
```

car_1_v = 17 м/с, distance = 15 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
             curvature_range = [0.0081467, 0.016293]

car_1_v = 17 м/с, distance = 16 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
             curvature_range = [0.0081467, 0.016293]

car_1_v = 17 м/с, distance = 17 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
             curvature_range = [0.01222, 0.016293]

car_1_v = 17 м/с, distance = 18 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
             curvature_range = [0.0081467, 0.016293]

car_1_v = 17 м/с, distance = 19 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
             curvature_range = [0.0081467, 0.016293]

car_1_v = 17 м/с, distance = 20 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
             curvature_range = [0.0081467, 0.016293]

car_1_v = 18 м/с, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 1 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 2 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 3 м

```
    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 4 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 5 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 6 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 7 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 8 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 9 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 10 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 11 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 12 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/с, distance = 13 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
```

```
    change : NOT NEEDED, COLLISION

car_1_v = 18 м/c, distance = 14 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0036333, 0.014533]

car_1_v = 18 м/c, distance = 15 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0036333, 0.014533]

car_1_v = 18 м/c, distance = 16 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0036333, 0.014533]

car_1_v = 18 м/c, distance = 17 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0072667, 0.014533]

car_1_v = 18 м/c, distance = 18 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0072667, 0.014533]

car_1_v = 18 м/c, distance = 19 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0109, 0.014533]

car_1_v = 18 м/c, distance = 20 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0109, 0.014533]

car_1_v = 19 м/c, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/c, distance = 1 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION
```

```
car_1_v = 19 м/с, distance = 2 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 3 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 4 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 5 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 6 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 7 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 8 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 9 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 10 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 11 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 12 м
```

```
    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 13 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 14 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 15 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 19 м/с, distance = 16 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0032609, 0.013044]

car_1_v = 19 м/с, distance = 17 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0032609, 0.013044]

car_1_v = 19 м/с, distance = 18 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.0032609, 0.013044]

car_1_v = 19 м/с, distance = 19 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0032609, 0.013044]

car_1_v = 19 м/с, distance = 20 м

    braking: NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NEEDED, SUCCESS
            curvature_range = [0.0065219, 0.013044]

car_1_v = 20 м/с, distance = 0 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
```

```
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/c, distance = 1 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/c, distance = 2 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/c, distance = 3 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/c, distance = 4 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/c, distance = 5 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/c, distance = 6 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/c, distance = 7 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/c, distance = 8 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/c, distance = 9 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/c, distance = 10 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION
```

```
car_1_v = 20 м/с, distance = 11 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/с, distance = 12 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/с, distance = 13 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/с, distance = 14 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/с, distance = 15 м

    braking: NOT NEEDED, COLLISION
    speedup: NOT NEEDED, COLLISION
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/с, distance = 16 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/с, distance = 17 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NOT NEEDED, COLLISION

car_1_v = 20 м/с, distance = 18 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.002943, 0.011772]

car_1_v = 20 м/с, distance = 19 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.002943, 0.011772]

car_1_v = 20 м/с, distance = 20 м

    braking: NOT NEEDED, COLLISION
    speedup: NEEDED, SUCCESS
    change : NEEDED, SUCCESS
            curvature_range = [0.002943, 0.011772]
```

Acceptable parameters for specific values:
    braking: SUCCESS, speedup: SUCCESS, change: SUCCESS

car_1_v (м/c) | distance (м) | min_curvature (1/м) | max_curvature (1/м)

Acceptable parameters for specific values:
    braking: SUCCESS, speedup: SUCCESS, change: COLLISION

car_1_v (м/c) | distance (м)

Acceptable parameters for specific values:
    braking: SUCCESS, speedup: COLLISION, change: SUCCESS

car_1_v (м/c) | distance (м) | min_curvature (1/м) | max_curvature (1/м)

car_1_v	distance	min_curvature	max_curvature
10	3	0.011772	0.047088
10	4	0.011772	0.047088
10	5	0.011772	0.047088
10	6	0.011772	0.047088
10	7	0.011772	0.047088
10	8	0.011772	0.047088
10	9	0.011772	0.047088
10	10	0.011772	0.047088
10	11	0.011772	0.047088
10	12	0.011772	0.047088
10	13	0.011772	0.047088
10	14	0.011772	0.047088
11	6	0.0097289	0.038916
11	7	0.0097289	0.038916
11	8	0.0097289	0.038916
11	9	0.0097289	0.038916
11	10	0.0097289	0.038916
11	11	0.0097289	0.038916
11	12	0.0097289	0.038916
11	13	0.0097289	0.038916
11	14	0.0097289	0.038916
11	15	0.0097289	0.038916
11	16	0.0097289	0.038916
11	17	0.0097289	0.038916
11	18	0.0097289	0.038916
12	9	0.008175	0.0327
12	10	0.008175	0.0327
12	11	0.008175	0.0327
12	12	0.008175	0.0327
12	13	0.008175	0.0327
12	14	0.008175	0.0327
12	15	0.008175	0.0327
12	16	0.008175	0.0327
12	17	0.008175	0.0327
12	18	0.008175	0.0327
12	19	0.008175	0.0327
12	20	0.008175	0.0327
13	12	0.0069657	0.027863
13	13	0.0069657	0.027863
13	14	0.0069657	0.027863
13	15	0.0069657	0.027863
13	16	0.0069657	0.027863
13	17	0.0069657	0.027863
13	18	0.0069657	0.027863
13	19	0.0069657	0.027863
13	20	0.0069657	0.027863
14	15	0.0060061	0.024024

```
14    16    0.0060061    0.024024
14    17    0.0060061    0.024024
14    18    0.0060061    0.024024
14    19    0.0060061    0.024024
14    20    0.0060061    0.024024
15    18    0.010464     0.020928
15    19    0.005232     0.020928
15    20    0.005232     0.020928
```

Acceptable parameters for specific values:
    braking: SUCCESS, speedup: COLLISION, change: COLLISION

car_1_v (м/с) | distance (м)

Acceptable parameters for specific values:
    braking: COLLISION, speedup: SUCCESS, change: SUCCESS

car_1_v (м/с) | distance (м) | min_curvature (1/м) | max_curvature (1/м)
```
14    6     0.0060061    0.024024
15    8     0.005232     0.020928
15    9     0.010464     0.020928
16    10    0.0045984    0.018394
16    11    0.0045984    0.018394
17    12    0.0040734    0.016293
17    13    0.0040734    0.016293
17    14    0.0040734    0.016293
18    14    0.0036333    0.014533
18    15    0.0036333    0.014533
18    16    0.0036333    0.014533
19    16    0.0032609    0.013044
19    17    0.0032609    0.013044
19    18    0.0032609    0.013044
20    18    0.002943     0.011772
20    19    0.002943     0.011772
20    20    0.002943     0.011772
```

Acceptable parameters for specific values:
    braking: COLLISION, speedup: SUCCESS, change: COLLISION

car_1_v (м/с) | distance (м)
```
12    0
12    1
13    2
13    3
14    4
14    5
15    6
15    7
16    8
16    9
17    10
17    11
18    12
18    13
19    14
19    15
20    16
20    17
```

Acceptable parameters for specific values:
    braking: COLLISION, speedup: COLLISION, change: SUCCESS

```
car_1_v ( м/с) | distance (м) | min_curvature (1/м) | max_curvature (1/м)
10     0     0.023544     0.047088
10     1     0.023544     0.047088
10     2     0.011772     0.047088
11     0     0.019458     0.038916
11     1     0.019458     0.038916
11     2     0.019458     0.038916
11     3     0.019458     0.038916
11     4     0.019458     0.038916
11     5     0.0097289    0.038916
12     2     0.024525     0.0327
12     3     0.01635      0.0327
12     4     0.01635      0.0327
12     5     0.01635      0.0327
12     6     0.01635      0.0327
12     7     0.01635      0.0327
12     8     0.008175     0.0327
13     4     0.013931     0.027863
13     5     0.020897     0.027863
13     6     0.013931     0.027863
13     7     0.013931     0.027863
13     8     0.013931     0.027863
13     9     0.013931     0.027863
13    10     0.013931     0.027863
13    11     0.013931     0.027863
14     7     0.012012     0.024024
14     8     0.018018     0.024024
14     9     0.012012     0.024024
14    10     0.012012     0.024024
14    11     0.012012     0.024024
14    12     0.012012     0.024024
14    13     0.012012     0.024024
14    14     0.012012     0.024024
15    10     0.010464     0.020928
15    11     0.015696     0.020928
15    12     0.010464     0.020928
15    13     0.010464     0.020928
15    14     0.010464     0.020928
15    15     0.010464     0.020928
15    16     0.010464     0.020928
15    17     0.010464     0.020928
16    12     0.0091969    0.018394
16    13     0.0091969    0.018394
16    14     0.013795     0.018394
16    15     0.0091969    0.018394
16    16     0.0091969    0.018394
16    17     0.0091969    0.018394
16    18     0.0091969    0.018394
16    19     0.0091969    0.018394
16    20     0.0091969    0.018394
17    15     0.0081467    0.016293
17    16     0.0081467    0.016293
17    17     0.01222      0.016293
17    18     0.0081467    0.016293
17    19     0.0081467    0.016293
17    20     0.0081467    0.016293
18    17     0.0072667    0.014533
18    18     0.0072667    0.014533
18    19     0.0109       0.014533
18    20     0.0109       0.014533
19    19     0.0032609    0.013044
19    20     0.0065219    0.013044
```

Acceptable parameters for specific values:
    braking: COLLISION, speedup: COLLISION, change: COLLISION

car_1_v (м/с) | distance (м)
10   15
10   16
10   17
10   18
10   19
10   20
11   19
11   20
13   0
13   1
14   0
14   1
14   2
14   3
15   0
15   1
15   2
15   3
15   4
15   5
16   0
16   1
16   2
16   3
16   4
16   5
16   6
16   7
17   0
17   1
17   2
17   3
17   4
17   5
17   6
17   7
17   8
17   9
18   0
18   1
18   2
18   3
18   4
18   5
18   6
18   7
18   8
18   9
18   10
18   11
19   0
19   1
19   2
19   3
19   4
19   5
19   6

```
19     7
19     8
19     9
19     10
19     11
19     12
19     13
20     0
20     1
20     2
20     3
20     4
20     5
20     6
20     7
20     8
20     9
20     10
20     11
20     12
20     13
20     14
20     15

FINISH program
>>
```