Goal：To find the boundary points of the reachable sets.

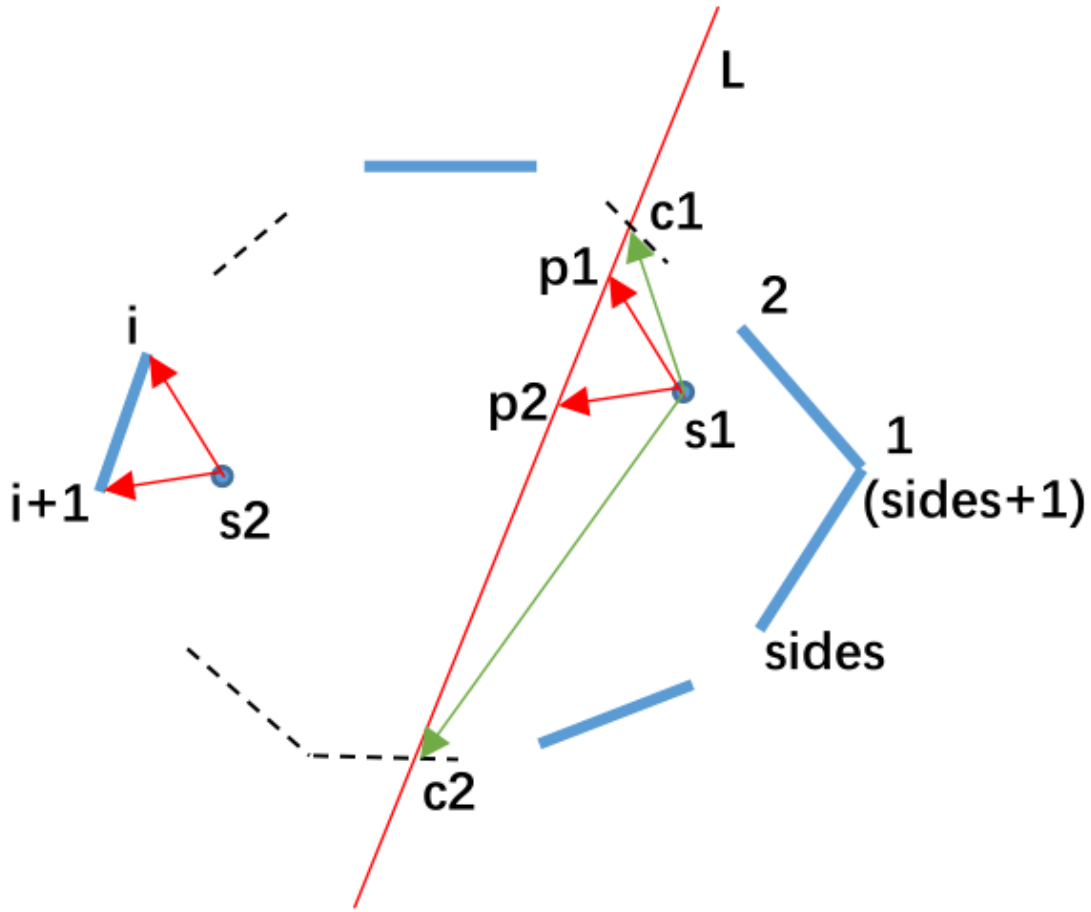

Fig.1

We have a polygon that has ‘sides’ sides. As is shown in the picture, the number of the apexes are from 1 to sides+1.

For the ith side (point i and i+1), how to get the reachable set:

1. For the ith side (point i and i+1), connect point s2 to point i and i+1. (the red arrows in Fig.01)
2. Then do translation for triangle (I, s2, i+1) to make s2 overlapping with s1. Then we can get point p1 and p2.
3. Extend segment p1p2 to line L which has intersection point c1 and c2 with the polygon.

4. If point p1 and p2 are inside the polygon(like Fig.1), we change nothing

   If the situation is like Fig.2 below, we change c1 to p1. (do the similar things in some other similar situations)

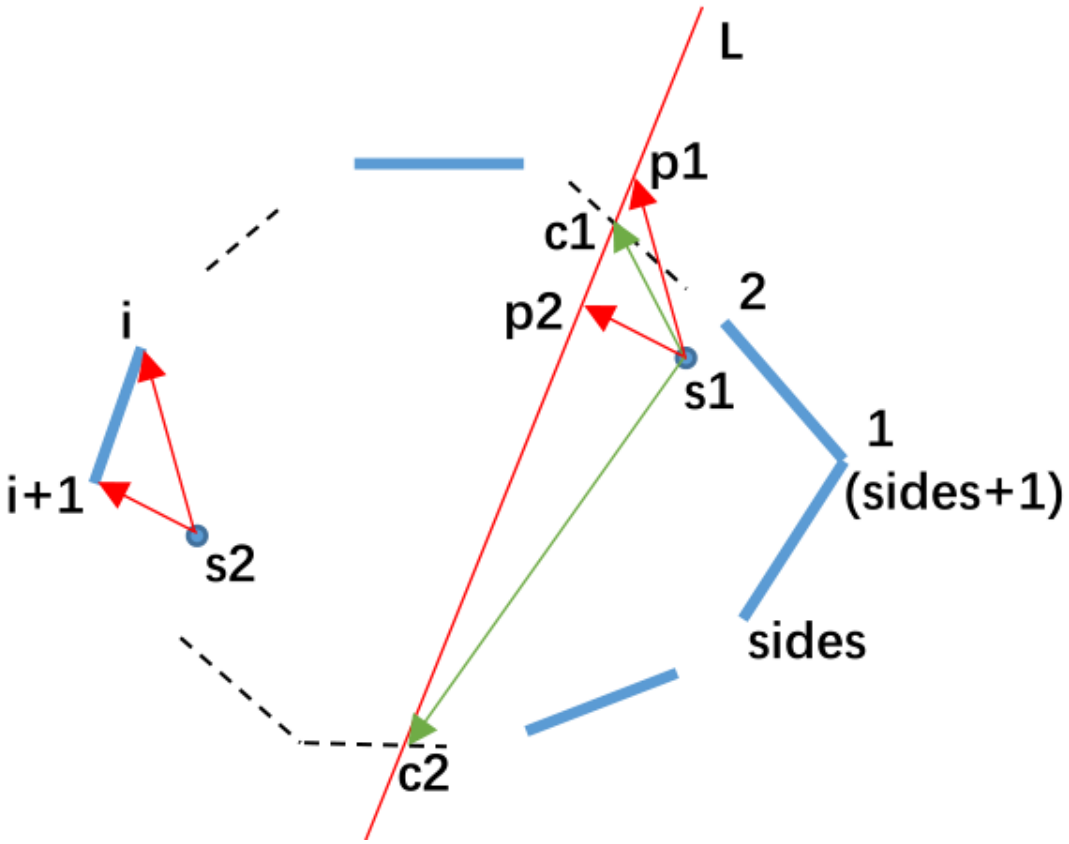

Fig.2

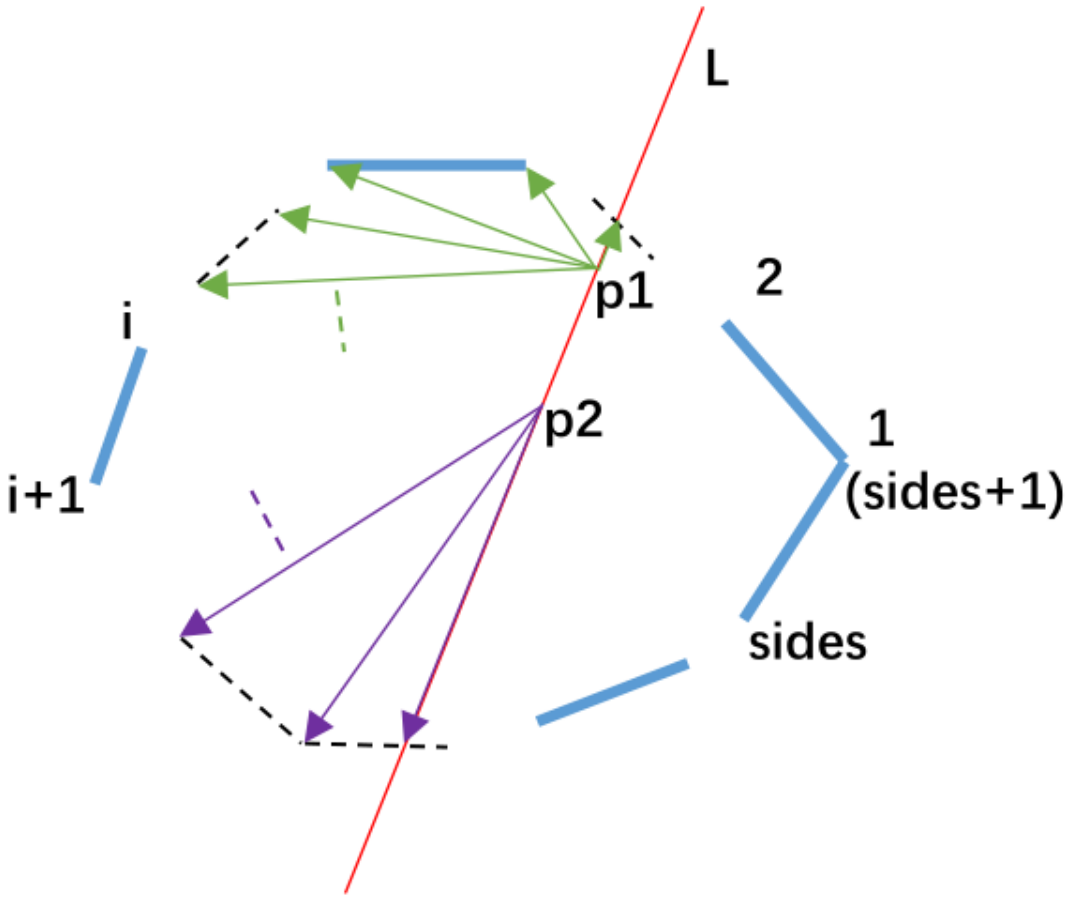

Fig.3

5. To find all apexes of the polygon between line L and line (i, i+1). (including point i, i+1, p1 and p2). Record them in an array named "preVReaSet".
6. Define an array named "vReaSetPt" to record all of the vectors from point p1 and p2 to the points in array "preVReaSet". (The green and purple arrows in Fig.3)
7. Define an array named "TotalReaSet" to record s2-(s1+ vReaSetPt[[k]]).

So, array "TotalReaSet" includes all the boundary points of the reachable set for the ith side. Do polygon[TotalReaSet] to get the area.