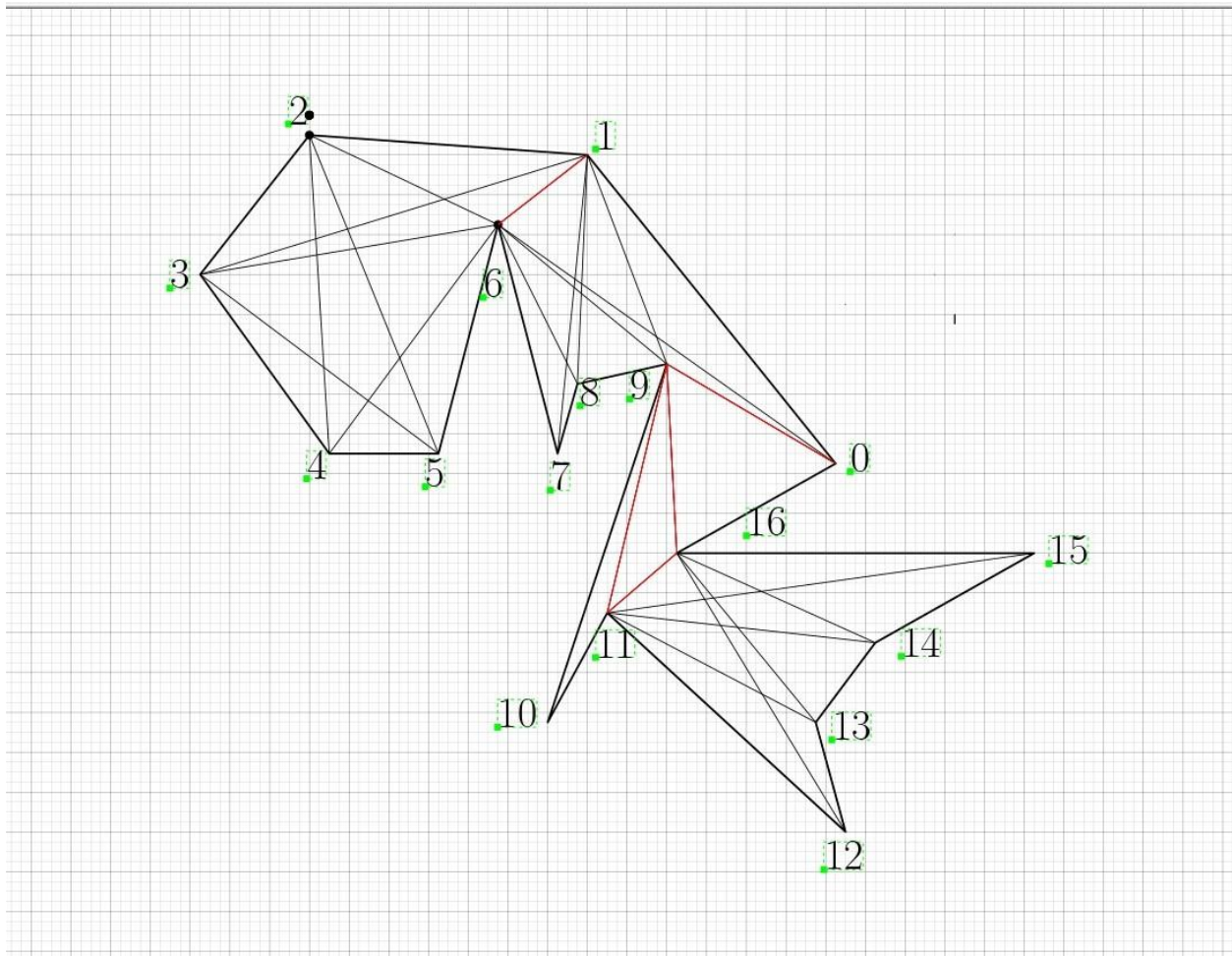


1(a)



The polygon can be divided by the forced diagonals(red).

For the piece of 1 to 6, we can assume edge (1,6) must be an edge of a triangle.

(1) choose edge(2,6), then the rest 2-6 is a convex 5-gon, so the triangulation is $C_3 = 5$.

(2) choose edge (3,6), then 3-6 is a convex 4-gon, so the triangulation is $C_2 = 2$.
 $5+2*1*1= 7$

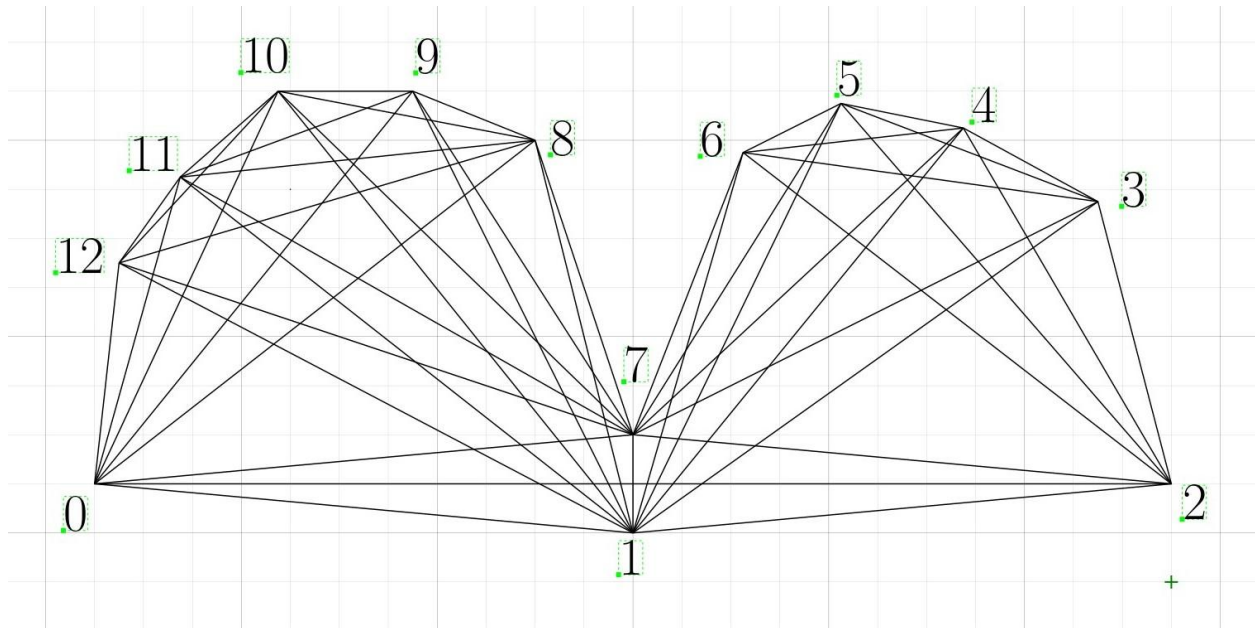
For the piece of 0-9-16, 9-11-16, 9-10-11 is one triangulation.

For the piece 1-6-7-8-9-0, it is a blunt nose fox, so it has 4 triangulations.

For the piece 11 to 16, it is a blunt nose fox, so it has 4 triangulations.

$$\text{Total} = 7*1*1*1*4*4 = 112$$

(b)



There is no forced diagonal.

- (1) We can assume use edge(1,7), then the piece of 0-1-7-8-9-10-11-12 is a convex 6-gon and the piece of 1 to 7 is a convex 5-gon, so the triangulation is $C_6 * C_5 = 132 * 42 = 5544$
- (2) If don't use edge(1,7), then must use edge (0,2). Then edge (0,2) need to use for triangle 0-2-7 and 0-1-2. The rest piece 0-7-8-9-10-11-12 is a convex 5-gon and the piece of 2 to 7 is a convex 4-gon, so the triangulation is $C_5 * C_4 = 42 * 14 = 588$

Total = $5544 + 588 = 6132$