

## 02 - Algoritmos

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# Triangulação

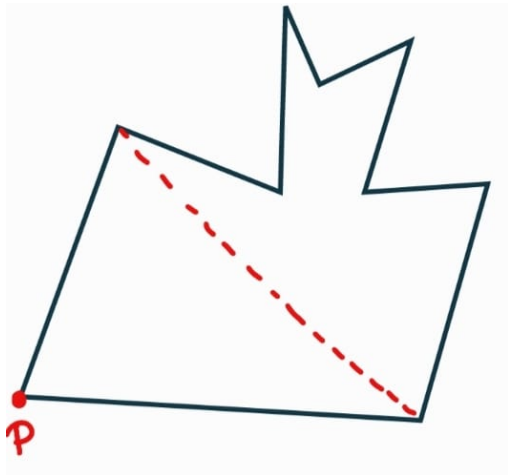
## Problema

Dado um polígono, listar triângulos de alguma triangulação.

# Triangulação

## Problema

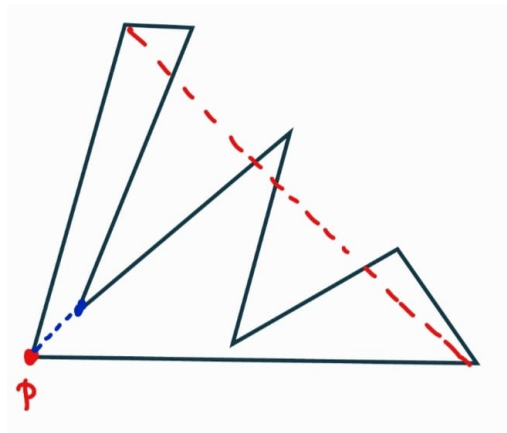
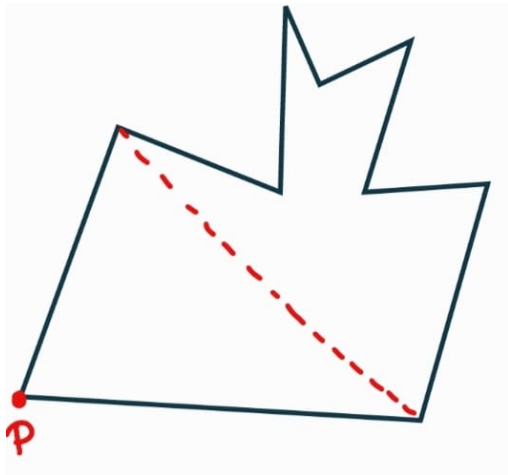
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# Triangulação

## Problema

Dado um polígono, listar triângulos de alguma triangulação.



# Exemplos Utilizados

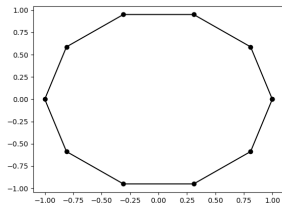


Figura: Polígono Regular

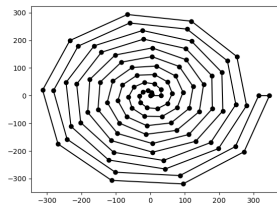


Figura: Espiral

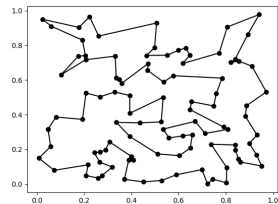
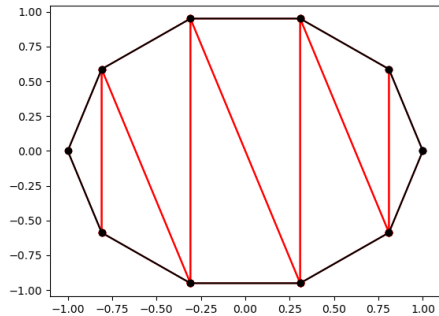
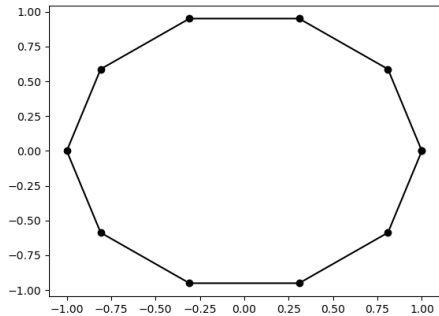
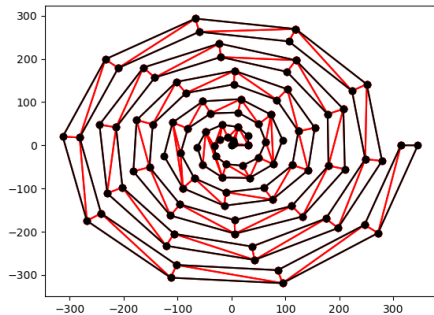
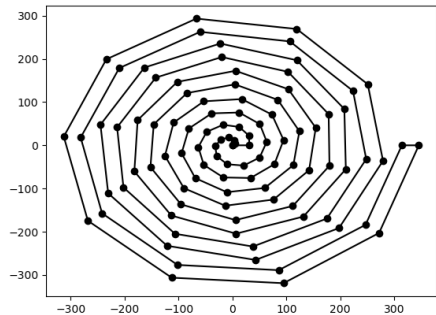


Figura: Caixeiro Viajante

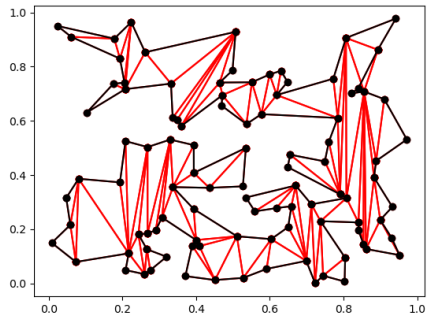
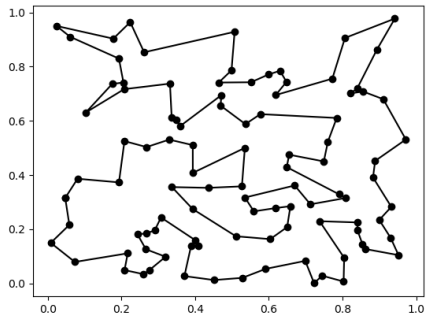
# Resultados triangulação



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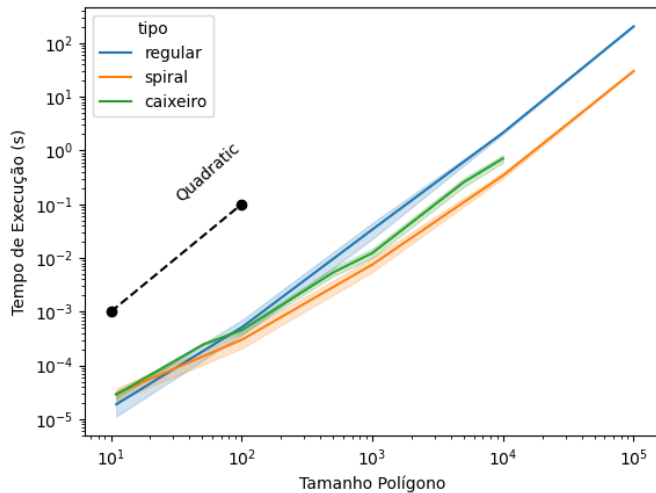


# Resultados triangulação





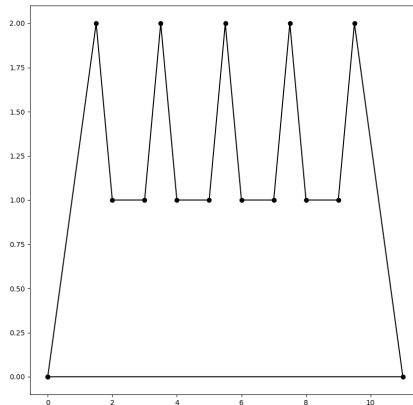
# Performance



Linha pontilhada representa uma função quadrática.

# Câmeras na Galeria de Arte

- Posicionar câmeras em uma galeria de arte de forma a cobrir toda a região interior.

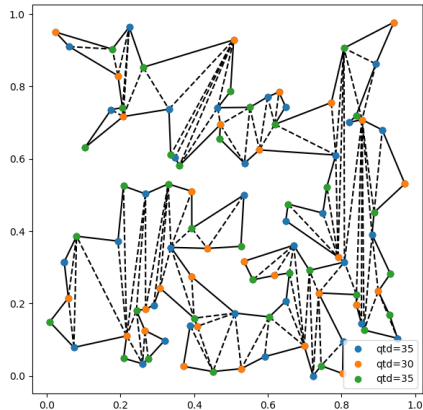
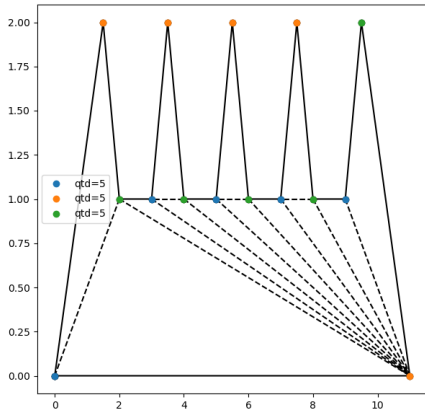


# Algoritmo de Coloração

- ▶ Kooshesh–Moret (1992),  
Three-coloring the vertices of a  
triangulated simple polygon

```
Color( $p_0$ )  $\leftarrow$  1  
Color( $p_1$ )  $\leftarrow$  2  
for  $i = 1$  to  $n - 1$  do  
  if odd(deg( $p_i$ ))  
    then Color( $p_{i+1}$ )  $\leftarrow$  Color( $p_{i-1}$ )  
    else Color( $p_{i+1}$ )  $\leftarrow$  6 - Color( $p_{i-1}$ ) - Color( $p_i$ )  
endfor.
```

# Algoritmo de Coloração



Obrigado!

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