

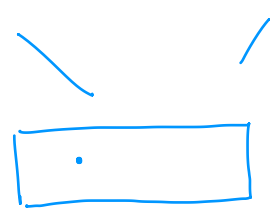
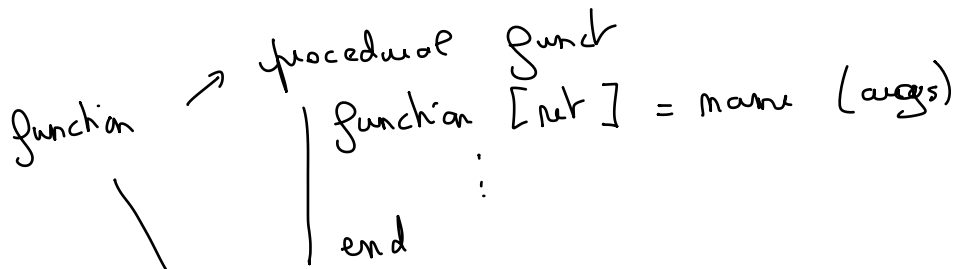
TD1

- Golden section
- Newton
- Parabolic interpolation

* ^
algebraic

. * . ^ . \

coef. - wise

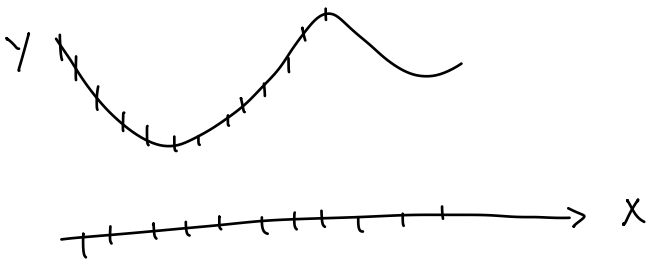


functional style — variable - type func

$f = @(\dots)$... calculus

|

args



plot(X, Y)

```

function [y] = myf(x)
y = zeros(size(x));
for i=1:20
y = y + ((2*i-5)./(x-i^2)).^2;
end
end
    
```

```

clear
clc
X = 0:0.1:10;
Y = myf(X);
Y = min(Y,40);
plot(X,Y, 'r');
    
```

$$f(x) = \sum_i \left(\frac{2i-5}{x-i^2} \right)^2 = \sum_i (2i-5)^2 \times (x-i^2)^{-2}$$

$$(x^m)' = m x^{m-1}$$

$$f'(x) = \sum_i (2i-5)^2 \left(-2 \cdot (x-i^2)^{-3} \right)$$

$$f''(x) = \sum_i (2i-5)^2 \left(6 \cdot (x-i^2)^{-4} \right)$$

newton($f', f'', x_0, \epsilon, N$), φ) \rightarrow critère d'arrêt

$\rightarrow @ (x_i, x_{i+1}) \quad \|x_i - x_{i+1}\| < \epsilon$
 $\rightarrow @ (x_i, x_{i+1}) \quad \frac{\|x_i - x_{i+1}\|}{\|x_i\|} < \epsilon$

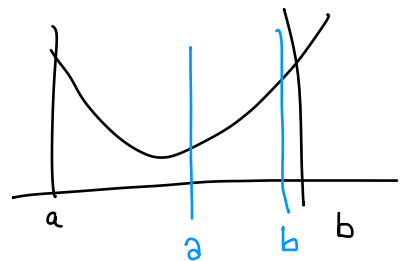
Golden Parabolic) $[a, b]$ tq f unimodal

\downarrow
 $[1.1, 3.9]$

$[4.1, 1.9]$

\vdots

$\leftarrow f$ pas dif. en $0, 1, 4, 9, 25, \dots$



minimum(f, a, b) — Brent Matlab ...