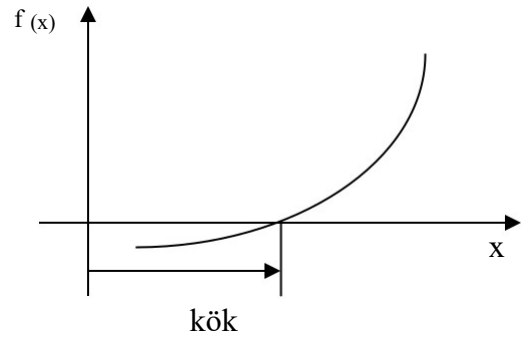


# SAYISAL YÖNTEMLERİN SINIFLANDIRIMASI

## 1 Denklemlerin kökleri

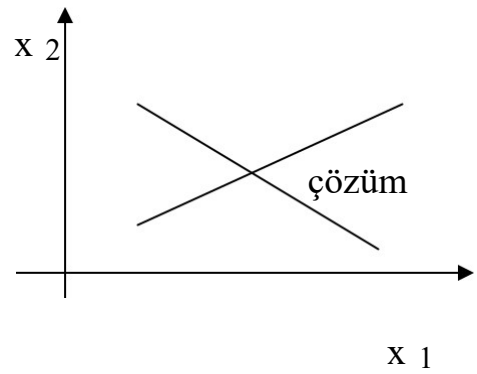
$f(x) = 0$  denklemini sağlayan  $x$  değerlerinin hesabı



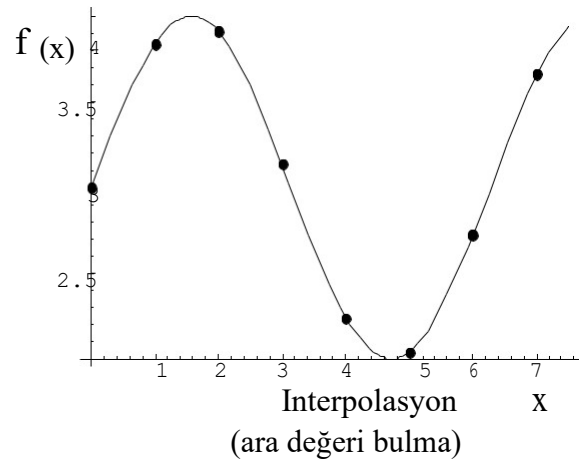
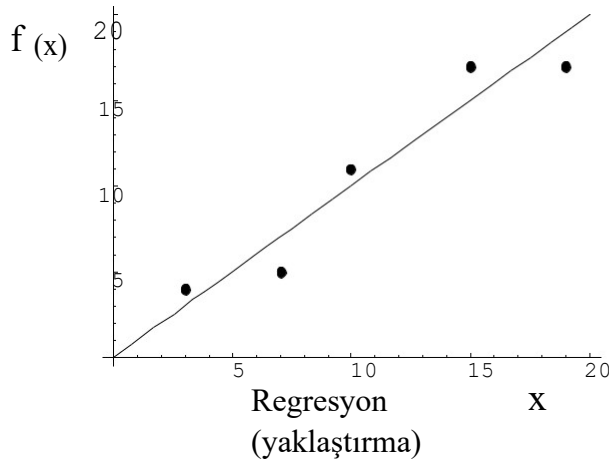
## 2 Lineer denklem sistemlerinin çözümü

$$A_{11} x_1 + A_{12} x_2 = C_1$$

$$A_{21} x_1 + A_{22} x_2 = C_2$$

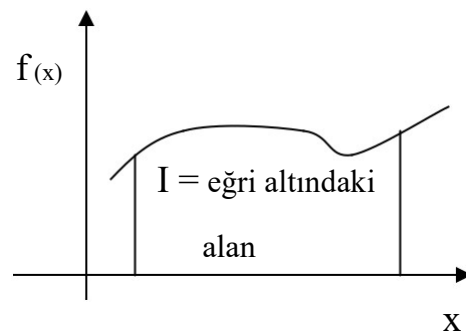


## 3 Eğri uydurulması



## 4 Nümerik integral

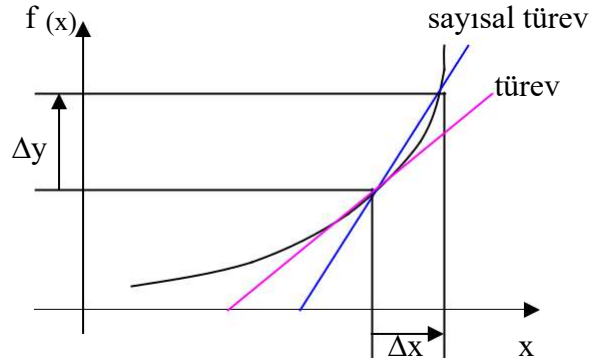
$$I = \int_a^b f(x) dx$$



## 5 Nümerik türev

$$\text{Türev:} \quad \frac{df}{dx} = \lim_{\Delta x \rightarrow 0} \frac{f(x+\Delta x) - f(x)}{\Delta x}$$

$$\text{Nümerik türev :} \quad \frac{df}{dx} \approx \frac{\Delta y}{\Delta x} = \frac{f(x+\Delta x) - f(x)}{\Delta x}$$

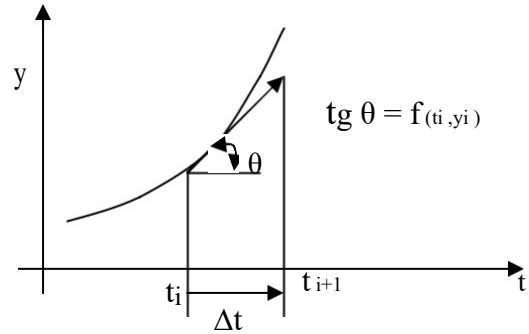


## 6 Adi diferansiyel denklemler

$$\frac{dy}{dt} \approx \frac{\Delta y}{\Delta t} = f(t, y)$$

y nin t ye bağlı çözümü:

$$y_{i+1} = y_i + f(t_i, y_i) \Delta t$$



## 7 Kısmi türevli diferansiyel denklemler

$$\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = f(x, y)$$

x ve y ye bağlı olarak u hesaplanır.

