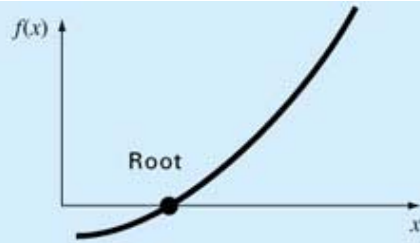
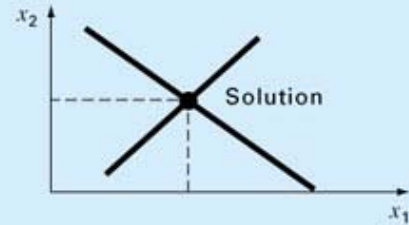


(a) Part 2: Roots of equations
Solve $f(x) = 0$ for x .



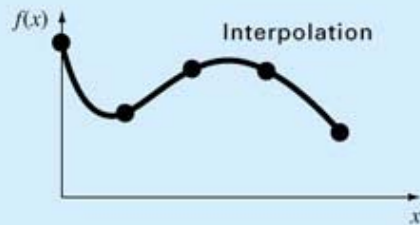
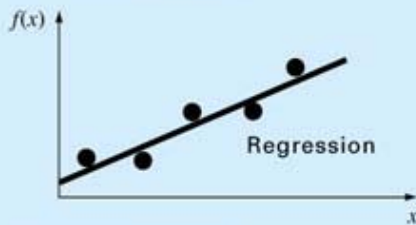
(b) Part 3: Linear algebraic equations
Given the a 's and the c 's, solve
 $a_{11}x_1 + a_{12}x_2 = c_1$
 $a_{21}x_1 + a_{22}x_2 = c_2$
for the x 's.



(c) Part 4: Optimization
Determine x that gives optimum $f(x)$.



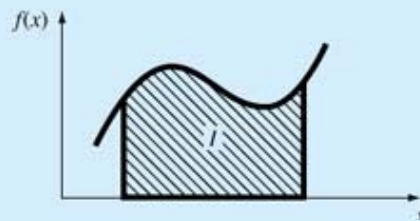
(d) Part 5: Curve fitting



(e) Part 6: Integration

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

Find the area under the curve.



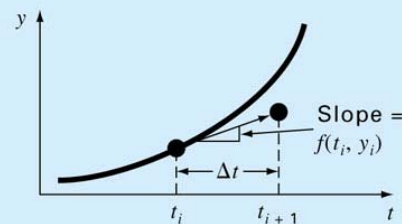
(f) Part 7: Ordinary differential equations

Given

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

solve for y as a function of t .

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



(g) Part 8: Partial differential equations

Given

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

solve for u as a function of x and y

