

Exercises for Lecture No. 4

Compute, using the steepest descent method, the minimum of the function:

$$f(x_1, x_2) = Ax_1^2 + Bx_2^2 - 0.25Ax_1x_2 - 0.5Ax_1 - 0.5Bx_2 + AB$$

where:

A – number of letters in given name

B – number of letters in surname

initial point: $X = (-2A, 2B)$

Assume a second degree function based on 3 points for local approximation:

center point - current value

the other two points equidistant from the center point

Take the Kuhn – Tucker condition as the convergence (stop) criterion ($< 10e-4$)