

AEB 6533
Assignment 4

I. Use Newton-Raphson to maximize

$$\max x_1^{25} x_2^{15} x_3^{30} x_4^{10} x_5^{20}$$

$$s.t. \quad 5x_1 + 4x_2 + 3x_3 + x_4 + 2x_5 \leq 200$$

Starting at the initial point

$$x = \begin{pmatrix} 0.1 \\ 0.1 \\ 0.1 \\ 0.1 \\ 0.1 \end{pmatrix}$$

II. Use a conjugate gradient routine to perform the same optimization.

III. Solve the above problem using GAMS.