

### Home work 3

Minimize  $f(x) = x_1^2 + x_2^4 + x_1 x_2$  using Trust Region method. The starting point is  $(1, 1)$ , radius  $\Delta_0$  of the trust region in the first step is  $\Delta_0 = 0.7$ . Use quadratic approximation of  $f$ . Perform three steps. Use contour plot to visualize the optimization process.