Given the function

\[ f(x, y) = (1 - x)^2 + 105(y - x^2)^2, \]

write a computer program(s) to find the minimum of this function from a starting point of \((x, y) = (0, 0)\) using:

1. Steepest Descent Method with Quadratic/Cubic Backtracking Line Search
2. Conjugate Gradient Method with Quadratic/Cubic Backtracking Line Search
3. Newton’s Method with Quadratic/Cubic Backtracking Line Search

Use the norm of the gradient as a stopping condition, with a tolerance of \(10^{-4}\).

Hand in a copy of your computer program(s) (via email) and a plot showing convergence profile (norm of gradient vs. iteration) comparisons.