Problem 1
Nocedal and Wright, Problem 8.3

Problem 2
Nocedal and Wright, Problem 8.4

Problem 3
Nocedal and Wright, Problem 8.8

Problem 4
Nocedal and Wright, Problem 8.9

Problem 5
Nocedal and Wright, Problem 8.10

Problem 6
Program the BFGS method with Armijo line search. Set $B_0 = I$. Set the initial step length equal to 1, and set the step length reduction factor to 0.8. Use your program to minimize the Rosenbrock function, with initial points $(1.2, 1.2)$ and $(-1.2, 1)$. Also use your programs for steepest descent and Newton’s method to minimize the same function. Compare the number of steps taken by each algorithm to attain an objective value of $10^{-6}$. Make a two dimensional plot of the sequence of iterates of each method.