Results Summary

Q1: Jacobi Method

Iterations: 100 (did not converge)

Final solution: [-5.1366e+35, 9.8599e+35, -1.0614e+36, 1.8931e+35, -6.8099e+35, 7.6149e+35]

Q2: Gauss-Seidel Method

Iterations: 100 (did not converge)

Final solution: [1.1310e+58, 2.0562e+58, 2.7889e+58, 2.2487e+58, 7.3270e+57, 3.5216e+58]

Q3: SOR Method (omega = 1.2)

Iterations: 100 (did not converge)

Final solution: [2.1640e+70, 4.4355e+70, 7.0165e+70, 5.0755e+70, 1.4976e+70, 9.8294e+70]

Q4: Conjugate Gradient Method

Iterations: 100 (reached max iteration, but stable)

Final solution: [-2.4017e+17, 2.1689e+16, 2.3075e+17, 1.5336e+17, 3.2633e+17, 4.7558e+17]

Note: Only the CG method produced a numerically stable result. Other methods diverged.