

Numerical Methods - HW7 (Reformatted)

Q1: Jacobi Method

Final Iteration: 100

x1 = -513664022545488646617525001320923136.000000
x2 = 985989410980329385546235018792140800.000000
x3 = -1061361336678598025312260406644834304.000000
x4 = 189314186636562099570701314927099904.000000
x5 = -680994597134863536831122249179201536.000000
x6 = 761493432646395733269771810106245120.000000

Q2: Gauss-Seidel Method

Final Iteration: 100

x1 = 11309831469304029888667346860198410075404209635847581990912.000000
x2 = 20561823998479081188777193491716834109625103839262863785984.000000
x3 = 27888844896780291813822770381877146771157271730155507679232.000000
x4 = 22486795629352921863841463233074945482313830151785501687808.000000
x5 = 7327020898301212018842151798324259007514559931415238017024.000000
x6 = 35215865795081502438868347272037459432689439621048151572480.000000

Q3: SOR Method ($w = 1.2$)

Final Iteration: 100

x1	=
21640014494834672174775213396706906410138507006381766976879630170980352.000000	
x2	=
44354900598813309575534293499136053550333336511281343635176130233761792.000000	
x3	=
70164607580295437335349088478353250178278151592907694638246733646135296.000000	
x4	=
50755035928214874478686186552175317191210539125492170234914200057020416.000000	
x5	=
14975508220719881964958978704137002417011267599063652382628102807748608.000000	
x6	=

98293815399868313071819377247867041503352384049372161829213008128114688.000000

Q4: Conjugate Gradient Method

Final Iteration: 100

$x_1 = -240173459197153728.000000$

$x_2 = 21688873782791576.000000$

$x_3 = 230746241858617536.000000$

$x_4 = 153356828691180992.000000$

$x_5 = 326331978702706944.000000$

$x_6 = 475575327041393792.000000$