Gauss-Seidel and Relaxation Techniques

**********Matrix**********			Const.		Soln.	Contributed by
-	-	-	-	-		William Ferger
						AS-EASY-AS
-8	1	2	0		1	
5	7	-3	10		2	After you Enter
2	1	-2	-2		3	the Matrix and
-	-	-	-	-		the constants,
		0				press Alt-A
0	0	0<-- X1		Seidel		to perform
0	1.4285714	0<-- X2		Seidel		the calculations
0	1	0<-- X3		Seidel		
-	-	-	-			
		0				This is only me
		0				as a demo of th
0	0	0<-- X1		Over/Und		program's abili
0	0	0<-- X2		Over/Und		Validation of re
0	0	0<-- X3		Over/Und		is specific user'
-	-	-	-	-		responsibility!

***** Press Alt-H for Information ******

This is a simple template to demonstrate the ability of
AS-EASY-AS to perform iterative operations, while also
showing an application of the Gauss-Seidel method of
solving a set of equations using the Over/Under
Relaxation method. The theory behind this method can be
found in any good textbook on numerical methods.

A1..C3   Contain the coefficients for a set of three equations
D1..D3   Contain the constants
E1..E3   Contain the solutions for X,Y, and Z using the matrix
           Solution available in AS-EASY-AS.
C9..C11   Contain the solutions using the Gauss-Seidel method
C15..C17 Contain the solution using the Over/Under technique

* Remember, the initial guess and the relaxation
  factor determine how quickly the answers will converge!

** Press Home to Return to the Data Area **

:
sen
User

/sgpd{let iit1,0} {let init2,0} {let relax,0}/sgpe{goto a4}

/sgrm/rlninit1~/rlninit2~/rlnrelax~
r   /sgpd/aedata~esolve~/sgpe
{invalue "Enter Guess For Seidel Solution: ",c8}{update}
{invalue "Enter Guess For Over/Under Relaxation Solution: ",c13}{
{invalue "Enter Guess For Relaxation Factor: ",c14}{update}
/rlyg13~/rlyg14~{update}
s.   /rlyinit1~/rlyinit2~/rlyrelax~/rlydata~
/rlng13..g18~/reg13..g18~{let g13,"Keep Pressing F9 to"}
{let g14,"Perform the iterations"}
ant   {let g15,"Until Conversion!"}/rlyg13..g18~
ιe   ~
ties.
esults
's

{home} {pgdn}

update}